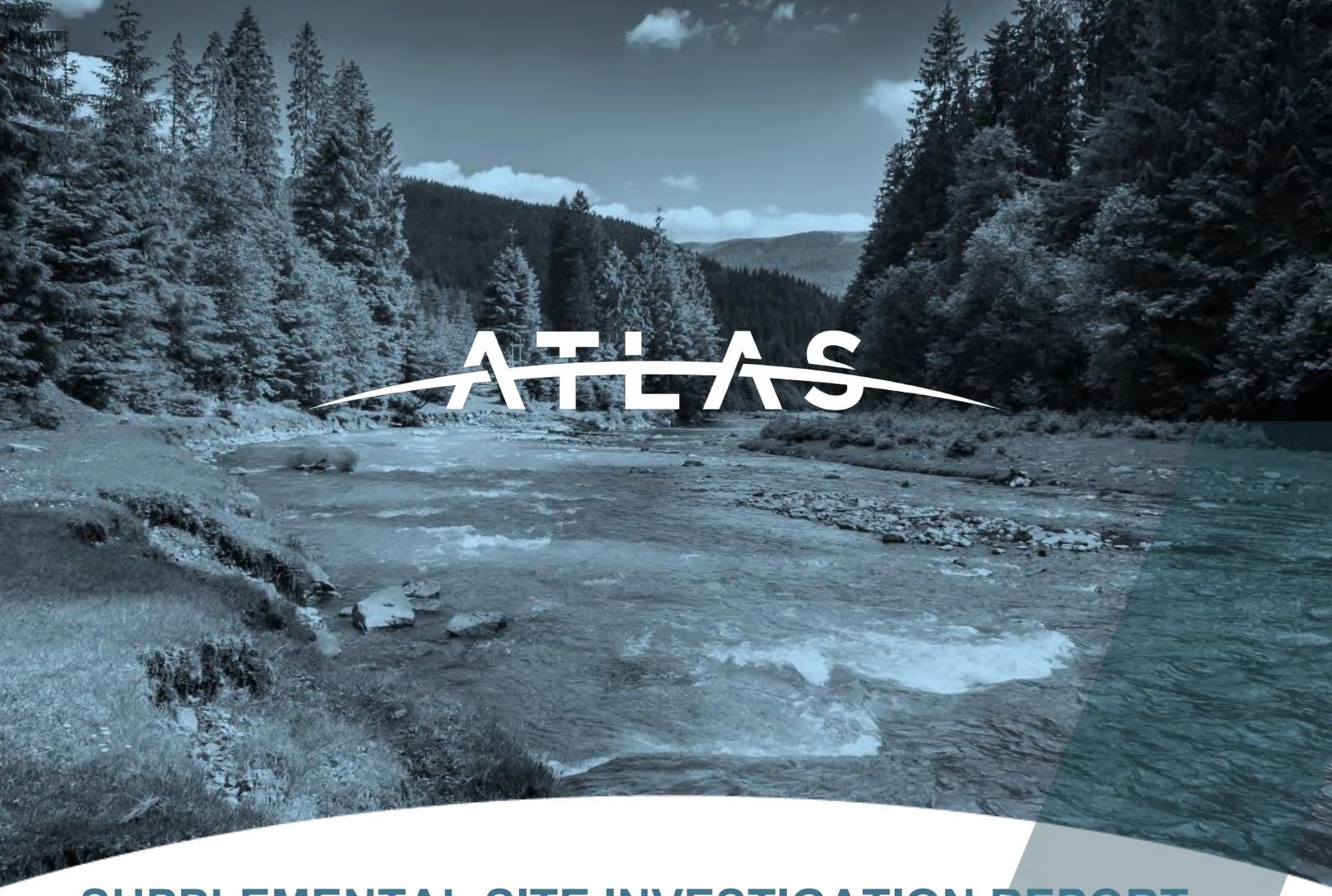

SUPPLEMENTAL SITE INVESTIGATION REPORT

GRAFTON ELEMENTARY SCHOOL

SMS SITE #2018-4794

ATLAS PROJECT #280EM00864

58 School Street, Grafton, VT, 05146

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EXECUTIVE SUMMARY

Atlas Technical Consultants, LLC (Atlas) prepared this report for the Vermont Department of Environmental Conservation (VTDEC) to document the Supplemental Site Investigation (SSI) perfomed to further define the nature and extent of per- and polyfluoroalkyl substances (PFAS) in overburden groundwater at the Grafton Elementary School (GES; herein referred to as "the Site"). The property is listed as a hazardous site SMS #2018-4794 and is located at 58 School Street, Grafton, Vermont. This SSI was performed in accordance with Atlas' Standard Operating Procedures (SOPs), Vermont's *Investigation and Remediation of Contaminated Properties Rule* (I-Rule, July 2019), and Atlas' SSI Work Plan dated April 28, 2022, which was approved by Kimberly Caldwell of the VTDEC. The VTDEC requested additional site investigation activities to address remaining data gaps at the Site in order to assist in future decision-making processes.

The GES water supply has been found to contain PFAS and the water is presently treated using granular activated carbon (GAC). Site investigations conducted by The Verterre Group (Verterre, October 12, 2018 and September 26, 2019), and a geophysical investigation by ATC Group Services (ATC, now dba Atlas; September 30, 2019), determined that PFAS is entering the Site's water supply well via a series of fractures in the bedrock, and indicated that the source of PFAS is likely the nearby shallow GES leach field that sits atop shallow bedrock (encountered at approximately 20 feet below ground surface) and possibly some PFAS contributions from nearby residential leach fields. The PFAS is suspected to have been present in floor wax and cleaning supplies used at the school and disposed of in wash water to the active onsite septic system. It is suspected that the PFAS migrated through the former leach field and into the underlying overburden and shallow bedrock aquifers.

The objective of this SSI was to attempt to fill remaining data gaps, including the following:

- The PFAS-contaminated overburden groundwater has not been fully delineated;
- Evaluating potential impact to sensitive receptors;
- It has not been determined if PFAS-contaminated overburden groundwater is migrating offsite; and,
- The PFAS-contaminated bedrock aquifer has not been fully delineated.

The practicality of addressing these data gaps was limited by the documented minimal presence of overburden groundwater at and surrounding GES, which limits the ability to characterize PFAS concentrations and migration of overburden groundwater. However, an attempt to delineate the overburden groundwater, particularly at compliance points on- and offsite, is necessary for future decision-making processes, including the potential for groundwater reclassification at the property. The VTDEC elected not to perform additional bedrock drilling at this time, so as not to create additional potential preferential pathways for vertical PFAS migration.

In order to address the data gaps outlined above, Atlas attempted to install eight new offsite groundwater monitoring wells, and sample them along with the four existing onsite monitoring wells previously installed by Verterre. Atlas was able to install six of the eight proposed wells, as two of the locations had no evidence of overburden groundwater. All soil borings were advanced until refusal on assumed bedrock or until evidence of at least five feet of saturated overburden. Onsite monitoring wells MW-1 through MW-4, and new offsite wells MW-103 through MW-108, were gauged on July 11, 2022 for depth to water. Of the ten available wells, six were dry and only three (MW-103, -107 and -108) had sufficient water for sample collection. Atlas also collected

samples of ten nearby water supply wells on July 8, 2022, nine of which had previously been sampled by Verterre. All groundwater and supply well samples were analyzed for PFAS by Con-Test Pace Analytical of East Longmeadow, MA; groundwater was analyzed via EPA Method 537 modified with isotope dilution, and drinking water was analyzed via EPA Method 537.1. Atlas inadvertently missed the sample collection of a surface water sample from the pond located to the south of GES; the VTDEC has requested that a sample be collected next year in conjunction with other sampling in the area.

PFAS compounds were detected in four of the ten water supply wells sampled on July 8, 2022, at concentrations below the Vermont Health Advisory (VHA) of 20 nanograms per liter (ng/L, or parts per trillion) for the sum of five regulated compounds. The only detected compounds in these four samples were perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). The total regulated PFAS concentrations ranged from 2.4 ng/L at Res-9 (72 Kidder Hill Road), to 6.2 ng/L at Res-4 (47 School Street). There were no detections of non-regulated PFAS compounds in any of the supply wells sampled. No other PFAS compounds were detected in any of the other samples. No samples had reported detections exceeding the VHA.

Groundwater in the overburden aquifer appears to flow in an east-southeasterly direction, which is consistent with previous reports by Verterre (2019). On July 11, 2022, groundwater elevations ranged from 172.76 feet (MW-106) to 189.41 feet (MW-108). Monitoring wells MW-1, -2, -3, -4, -104, and -105 were dry. MW-106 purged dry and did not have sufficient recharge for sample collection. Total regulated PFAS was reported in off-site MW-107 (located cross-gradient of GES leach field) groundwater sample at 60 ng/L, which exceeds the Vermont Groundwater Enforcement Standard (VGES) of 20 ng/L. All five of the regulated PFAS compounds were detected in the sample, as well as several non-regulated compounds, for a total PFAS concentration of 201 ng/L. Total regulated PFAS in MW-103 (located cross-gradient of GES leach field) was reported at 8.9 ng/L (PFOS and PFOA, only) and total PFAS, including non-regulated compounds, was reported at 16.1 ng/L. Total regulated PFAS concentrations in MW-108 (located up-gradient of GES) were 13.8 ng/L (PFHpA, PFOA, and PFOS) and total PFAS was reported at 23.7 ng/L.

Based on previous geophysical results of the GES supply well and sampling of onsite overburden groundwater monitoring wells, the onsite leach field is the most likely source of PFAS in the onsite bedrock supply well at GES. However, surrounding residences and businesses also utilize private septic systems; therefore, additional potential PFAS sources may exist in the area that may be contributing PFAS to the environment. At this time there are no known point sources of PFAS in the surrounding area; however, it is Atlas' understanding that a comprehensive source evaluation has not been completed. Additionally, PFAS was detected in overburden groundwater at cross- and upgradient locations to the GES leach field, suggesting that this previously identified source is likely not the only one contributing PFAS to groundwater in the area.

The PFAS compounds in the sampled overburden groundwater (up to nine regulated and non-regulated compounds) do not directly correlate to the PFAS compounds reported in bedrock supply wells (PFOA and PFOS, only); however, PFOA and PFOS are considered end-product PFAS compounds, and other PFAS can be precursors that eventually transform into those two compounds. It is possible that by the time the groundwater makes its way into bedrock, the precursor compounds have transformed into PFOA and PFOS. Alternatively, there are likely different sources of PFAS entering the overburden and bedrock aquifers.

Based on the above results and conclusions, Atlas offers the following recommendations:

1. Attempt a confirmatory groundwater monitoring well sampling event in Spring 2023 (following snow melt and higher rainfall) and include a surface water sample for analysis of PFAS and assessing PFAS concentration trends.
2. Perform a confirmatory sampling round of the four bedrock supply wells (Res-3, -4, -9 and -12) that had detections of regulated PFAS. Water quality results should be submitted to the property owners.
3. Properly dispose of the purge water drum.
4. Quarterly sampling of bedrock water supply well at Res-2 (70 School Street) should continue for analysis of PFAS, as should the quarterly sampling and operation and maintenance of the POET system at GES.
5. It is unlikely that installation of additional overburden monitoring wells would yield any more groundwater data than the existing well network, due to the minimal presence of overburden groundwater. The best course of action may be to reclassify groundwater at GES and implement Atlas' recommendations presented in the Evaluation of Corrective Action Alternatives (ECAA, June 2020).

1. INTRODUCTION

Atlas Technical Consultants, LLC (Atlas) prepared this report for the Vermont Department of Environmental Conservation (VTDEC) to document the Supplemental Site Investigation (SSI) perfomed to further define the nature and extent of per- and polyfluoroalkyl substances (PFAS) in overburden groundwater at the Grafton Elementary School (GES; herein referred to as "the Site",). The property is listed as a hazardous site SMS #2018-4794 and is located at 58 School Street, Grafton, Vermont (**Figures 1** and **2**). This SSI was performed in accordance with Atlas' Standard Operating Procedures (SOPs), Vermont's *Investigation and Remediation of Contaminated Properties Rule* (I-Rule, July 2019), and Atlas' SSI Work Plan dated April 28, 2022, which was approved by Kimberly Caldwell of the VTDEC. The VTDEC requested additional site investigation activities to address remaining data gaps at the Site in order to assist in future decision-making processes.

The GES water supply has been found to contain per- and poly-fluoroalkyl substances (PFAS) and the water is presently treated using granular activated carbon (GAC). PFAS are long-chain fluorinated compounds that have been determined to be biopersistent, bioaccumulative, hazardous to human and animal health, and likely carcinogenic, and are an emerging contaminant with their widespread usage and global presence now being realized. Vermont currently has five regulated PFAS compounds for soil and groundwater media, and Vermont Health Advisory (VHA) values for drinking water, which include perfluorohexane sulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). The Vermont Groundwater Enforcement Standards (VGES) and Vermont Health Advisory (VHA) for drinking water are both currently set at 20 parts per trillion (ppt) for these five PFAS compounds, individually or summed.

Site investigations conducted by The Verterre Group (Verterre, October 12, 2018 and September 26, 2019), and a geophysical investigation by ATC Group Services (ATC, now dba Atlas; September 30, 2019), determined that PFAS is entering the Site's water supply well via a series of fractures in the bedrock, and indicated that the source of PFAS is likely the nearby shallow GES leach field that sits atop shallow bedrock (encountered at approximately 20 feet below ground surface) and possibly some PFAS contributions from nearby residential leach fields. The PFAS is suspected to have been present in floor wax and cleaning supplies used at the school and disposed of in wash water to the active onsite septic system. It is suspected that the PFAS migrated through the former leach field and into the underlying overburden and shallow bedrock aquifers.

This SSI was performed in an attempt to continue Site investigations to meet the objective of defining the nature and extent of contamination in the overburden aquifer and evaluating potential impact to sensitive receptors. In particular, Atlas attempted to delineate PFAS contamination in groundwater at compliance points on- and offsite. Newly installed groundwater monitoring wells, as well as previously installed monitoring wells onsite, were sampled for presence of PFAS to assist the VTDEC in future decision-making processes. Several previously sampled offsite bedrock water supply wells were also resampled for presence of PFAS to further define the extent of PFAS contamination in the bedrock aquifer around the Site. No additional bedrock drilling was performed at this time, so as not to create additional potential preferential pathways for vertical PFAS migration.

The objective of this SSI was to attempt to fill remaining data gaps, including the following:

- The PFAS-contaminated overburden groundwater has not been fully delineated;
- Evaluating potential impact to sensitive receptors;
- It has not been determined if PFAS-contaminated overburden groundwater is migrating offsite; and,
- The PFAS-contaminated bedrock aquifer has not been fully delineated.

The practicality of addressing these data gaps was limited by the documented minimal presence of overburden groundwater at GES, which limits the ability to characterize contaminant concentrations and migration of overburden groundwater. However, an attempt to delineate the overburden groundwater, particularly at compliance points on- and offsite, is necessary for future decision-making processes, including the potential for groundwater reclassification at the property.

In order to address the data gaps outlined above, Atlas attempted to install eight new offsite groundwater monitoring wells, and sample them along with the four existing onsite monitoring wells previously installed by Verterre. Atlas was able to install six of the eight proposed wells, as two of the locations had no evidence of overburden groundwater. Onsite monitoring wells MW-1 through MW-4, and new offsite wells MW-103 through MW-108, were gauged on July 11, 2022 for depth to water. Of the ten available wells, six were dry and only three (MW-103, -107 and -108) had sufficient water for sample collection. Atlas also collected samples of ten nearby water supply wells on July 8, 2022, nine of which had previously been sampled by Verterre. All groundwater and supply well samples were analyzed for PFAS by Con-Test Pace Analytical of East Longmeadow, MA; groundwater was analyzed via EPA Method 537 modified with isotope dilution, and drinking water was analyzed via EPA Method 537.1. Atlas inadvertently missed the sample collection of a surface water sample from the pond located to the south of GES; the VTDEC has requested that a sample be collected next year in conjunction with other sampling in the area.

1.1 SITE INFORMATION

The coordinates of the property are 43.17026°N / 72.60904°W (**Figure 1**). The current use of the property is a pre-K through sixth grade school. The school building has been in use as a school since 1870; however, the construction year is unknown. The surrounding properties consist of residences to the north, east and west, and the pond and farm fields to the south.

Role	Name	Mailing Address	Email	Phone #
Property Owner	Windham Northeast Supervisory Union	25 Cherry Street Bellows Falls, VT	*elizabeth.harty@wnesu.com* GES Principal	(802) 463-9958

2. CONCEPTUAL SITE MODEL

The following conceptual site model (CSM) is formulated in accordance with §35-303 of Vermont's I-Rule, which outlines potential source(s) of release(s), infrastructure considerations, historical land use, geology, hydrogeology, contaminant fate and transport, sensitive receptors and potential exposure pathways. This CSM was generated based on previous available Site data as well as results discussed later in this report.

2.1 SITE PHYSICAL SETTING AND INFRASTRUCTURE

The Site and surrounding areas are relatively flat and are located in a valley bottom. The ANR Natural Resources Map lists the Site and surrounding properties as Colton loamy fine sands with 2-8% slopes, with an elevation of approximately 925 feet above mean sea level (AMSL). The nearest surface water features are a pond located approximately 180 feet south of the onsite water supply well, the Saxtons River located approximately 700 feet northeast of the school, and the South Branch of the Saxtons River located approximately 700 feet to the southeast. The Site contains the school building only, with residences to the north, east and west, and the pond and farm fields to the south.

The existing water supply well, installed in 1987, is located approximately 30 feet west of the school building and has a reported total depth of 655 feet (though the bottom ~20 feet appeared to be either collapsed or silted in). The well was completed with 6-inch steel casing to 43 feet below ground surface, with an estimated yield of 12 gallons per minute. A point-of-entry-treatment (POET) system was installed in August 2018 to address the PFAS contamination in the water supply. The system consists of two granular activated carbon (GAC) filter tanks that are serviced by Culligan Water Systems.

Except for GES itself (SMS#2018-4794), there are no VTDEC designated hazardous waste sites listed in the immediate vicinity of the subject property, but one site is shown approximately 1,000 feet northeast of the school, and north of the Saxtons River (**Figure 1**). The hazardous site is likely too far away to be a threat to the subject property; however, an investigation would be needed to make a conclusive determination. Several nearby private drinking water supply wells are listed in the ANR Natural Resources Atlas and depicted on **Figure 1**. Four of the surrounding water supplies have been sampled for PFAS.

2.2 SOURCE(S) & SITE HISTORY

The prior use of the Site is unknown at this time but based on its rural/small village setting was likely farm or forestland prior to the construction of the buildings. Previous generations of buildings could also have occupied this location. Further investigation would be needed to confirm historical land use.

The GES water supply (WSID #6076) has been found to contain PFAS, with the onsite septic system and leach field identified as a likely contributing source. Site investigations conducted by The Verterre Group (Verterre, dated October 12, 2018 and September 26, 2019), and a geophysical investigation by ATC Group Services (ATC, now dba Atlas; September 30, 2019), determined that PFAS is entering the water supply well via a series of fractures in the bedrock, and indicated that the source is likely the nearby leach field that sits atop shallow bedrock (encountered at approximately 20 feet below ground surface) and possibly some PFAS contributions from nearby residential leach fields. The PFAS is suspected to have been or still be

present in floor wax and cleaning supplies used at the school and disposed of in wash water to the active onsite septic system. The PFAS then migrated (or continues to migrate) through the leach field and into the underlying overburden and bedrock aquifers.

Verterre has conducted quarterly monitoring of the POET system installed on the school's water supply in 2018. Concentrations of the sum of regulated PFAS have ranged from 17.4 ppt (December 2021) to 44.1 ppt (May 2020) in the pre-treatment samples collected from the water supply. The December 2021 sample was the only one collected since 2018 with results below VGES/VHA. It is difficult to determine if concentrations are exhibiting a decreasing trend at this time.

According to VTDEC-provided information, ten nearby residential bedrock supply wells, sump-water from three residences, three overburden monitoring wells (MW-1, -2, and -3; MW-4 was dry), five boring soil samples, one wastewater pump station and the school's drinking water supply were all sampled for PFAS as part of a previous Site investigation by Verterre. One of the four nearby residential supply wells had PFAS in excess of regulated standards (northeast of leach field), two wells had PFAS detected above the reporting limit (RL) (northwest north of the leach field) and one supply well did not detect PFAS above laboratory method detection limits (MDLs) (west of leach field). Three soil samples contained low concentrations of PFAS, and two did not have detections above MDLs. All groundwater samples collected from the onsite overburden monitoring wells contained elevated PFAS concentrations, and the wastewater pump station and school drinking water samples had PFAS detections in exceedance of standards. In 2019, total regulated PFAS concentrations were reported at 304 ng/L in MW-1 (near GES leach field), 172 ng/L in MW-2 (near GES leach field), and 42 ng/L in MW-3 (likely upgradient of GES leach field).

Verterre has continued monitoring of the water supply at 70 School Street for presence of PFAS. Samples have been collected approximately quarterly since 2018 and have ranged in regulated PFAS concentration from 2.4 ppt (October 2019) to 22.8 (September 2021). A trend is not discernable at this time, though it appears concentrations may be influenced by seasonal variations.

Per the request of the VTDEC, ATC (now dba Atlas) completed an Evaluation of Corrective Actions and Alternatives (ECAA) for the Site in June 2020 to evaluate options for management of the drinking water source at GES. In the ECAA, ATC recommended continued operation of the POET system long-term rather than development of a new water source. The primary driver of corrective action is to mitigate exposure to sensitive receptors (ingestion of water by school children and staff, in this case) and this option is the most predictable and most protective of human health. The use of GAC treatment has been widely accepted as an effective treatment option for known PFAS compounds in drinking water at this time. The continued use of the GAC POET system would be the most effective short-term solution, as a temporary system is already in place and the detected PFAS concentrations can be cost effectively filtered using GAC. Little effort would be needed to redesign and permit the system for permanent use. Though potentially less than half the cost of continued treatment, developing a new PFAS free water source has a high degree of uncertainty at this Site. Based on the apparent widespread nature of PFAS in nearby water supplies, it is unlikely that a suitable location could be found on an adjacent property or on the GES property that would be PFAS-free, and it is possible that a new well could become impacted in the future from potential migration of the PFAS contaminants.

It is Atlas's understanding that the VTDEC will not be making a decision on the future of the water supply at GES until a comprehensive engineering study for installation of municipal water and wastewater in the Town of Grafton, currently underway and funded by the State of Vermont, is complete. A likely scenario is that groundwater will be reclassified in a certain radius around the Site, with deed restrictions for the installation of future water supply wells in that area.

2.3 SITE GEOLOGY & HYDROGEOLOGY

The dominant bedrock geology in the immediate vicinity is listed on the online ANR Natural Resources Atlas as granofels consisting of light-gray- to whitish-gray-weathering, massive to thickly bedded medium-grained biotite-white albite-quartz granofels, locally is a medium-gray, finer grained, more biotite-rich albitic quartz schist of gneissic aspect. The secondary bedrock feature is listed as schist. The location is also at the confluence of a granite formation consisting of light-pinkish-gray to gray, very coarse grained to medium-grained and mylonitic biotite-plagioclase-quartz-microcline augen gneiss, locally has large ovoidal relict microcline with rapakivi rims and intrusive breccia. The primary surficial geology is listed on the online ANR Natural Resources Atlas as a glacial till mantling the bedrock and reflecting the topography of the underlying bedrock surface, thicker in the valleys and thinner in the uplands. On many exposed uplands, postglacial erosion has left only rubble and scattered boulders on bedrock. Bedrock was encountered at 26 feet below ground surface (fbgs) during the construction of the onsite water supply well; other nearby well reports suggest depth to bedrock varies from 10 to 70 fbgs in the surrounding area. Overburden soils were described as primarily sands and silts.

The water table was encountered at depths ranging from 5 to 9 fbgs during Verterre's 2019 Site Investigation, and groundwater flow appears to be northeast toward the Saxtons River. Refusal was encountered during Verterre's 2019 soil boring program at depths of 2.5 to 10 fbgs; it is uncertain whether this refusal was on rock, bedrock, or dense gravel/till. There appears to be very little saturated overburden above the shallow bedrock at the Site.

2.4 CONTAMINANT FATE & TRANSPORT

PFAS are fluorinated compounds that are biopersistent, bioaccumulative, hazardous to human and animal health, and likely carcinogenic, and are an emerging contaminant with their widespread usage and global presence now being realized. PFAS are complex chemicals estimated to total over 4,000 compounds and the fate and transport characteristics or how they behave once they are released into the environment is not well known. Some PFAS compounds (i.e., precursors) can undergo partial degradation and/or transformation into other PFAS compounds; therefore, amounts and types of PFAS can increase over time in the environment. PFAS compounds such as PFOS and PFOA are resistant to degradation or transformation (ITRC, September 2020).

Depending on the amount of PFAS-containing material that has infiltrated the subsurface environment and soil types (e.g., sand versus clay) and other factors, some PFAS may make its way to the water table and be transported offsite. PFAS was previously detected in groundwater at the Site at concentrations exceeding the Vermont Groundwater Enforcement Standard (VGES), suggesting that PFAS washed vertically through the soil and entered the shallow overburden groundwater table, which has been observed as mostly perched zones and very little stable saturated thickness above bedrock. The horizontal extent of PFAS in groundwater is not known at this time. Attempts were made during this SSI to delineate PFAS in offsite groundwater; however, most newly installed monitoring wells had insufficient recharge for sample collection.

Low levels of PFAS have been detected in the nearby bedrock water supply wells, at concentrations below VGES, suggesting that at least some PFAS-contaminated water has entered the bedrock aquifer.

Shallow bedrock is present in the leach field and throughout most of the GES property and may be a conduit for contaminated groundwater entering the bedrock aquifer. Based on the results of ATC's 2019 down-well geophysical investigation and PFAS, nitrate, and chloride sampling analyses as well as previous investigations by The Verterre Group, it appears that water entering the septic system leach field migrated downward through the unsaturated zone and into shallow groundwater. It is possible that PFAS entered the bedrock aquifer at fracture zones extending to the bedrock/soil interface and entered the GES drinking water supply well, and possibly entered surrounding private bedrock water supplies. PFAS-contaminated shallow groundwater likely followed the easterly or southerly flow direction toward the Saxtons River, and once the contaminant entered the bedrock aquifer, PFAS transport likely followed the predominant north-south fracture orientation present in the area. Several nearby bedrock supply wells have had PFAS detections. Furthermore, at this time there are no known or suspected sources of PFAS in the surrounding area; however, it is Atlas's understanding that a comprehensive source evaluation has not been completed. Surrounding area residents and businesses also utilize onsite septic systems; therefore, additional potential PFAS sources may exist in the area.

The most productive transmissive fracture contributing groundwater to the supply well was identified at a depth of approximately 144 feet. There were other, less productive fractures identified at 60 feet, 90 feet, 120 feet, and 482 feet. PFAS sampling results from each of these zones, except the most shallow zone, exceeded the VGES and the VHA of 20 ppt. The geophysical investigation of the school's well also determined that water was entering the borehole from the 144-foot deep fracture then moving down the well and exiting out of the borehole through the lower fractures. It is possible that the well may be acting at times (e.g., ambient non pumping) as a preferential pathway for PFAS contamination to spread deeper into the bedrock aquifer.

2.5 SENSITIVE RECEPTORS AND EXPOSURE PATHWAYS

Nearby sensitive receptors include residential and municipal properties to the north, east, and west, which are a mix of cross, up- and downgradient elevations. The nearby surface water pond to the south is potentially threatened by PFAS through overland or shallow groundwater influences; a sample will be collected from this pond in 2023 and analyzed for presence of PFAS. The primary exposure pathway is from ingestion of contaminated groundwater, likely though drinking water supply sources. All of the properties in the area obtain drinking water from bedrock or dug supply wells and sewage disposal is through onsite private septic systems. At this time with available data, mobilized contaminants have been identified in surrounding drinking water supplies, shallow overburden soils and groundwater.

3. SUPPLEMENTAL SITE INVESTIGATION PROCEDURES

3.1 WATER SUPPLY WELL SAMPLING

On July 8, 2022, Atlas collected drinking water samples from ten water supply wells, including Res-1, -3 through -10, and Res-12 (**Figure 2**). Verterre had previously sampled Res-1 through -10 in 2019; several were reported as non-detect, though some had detections above reporting limits for the list of regulated PFAS. Verterre routinely sampled Res-2 (70 School Street) throughout 2022, therefore Atlas did not duplicate those efforts. Three other residences had detections of PFAS above reporting limits in 2019, including 66 Pleasant Street (Res-3), 47 School Street (Res-4), and 94 Pleasant Street (Res-6); Atlas collected confirmatory samples from these three locations. Atlas also resampled the nearest upgradient water supply well, located at 151 Townshend Road (Res-1) and 108 Pleasant Street (new sample ID Res-12), which are both located in the apparent downgradient direction from the source area. Atlas confirmed that there is no water supply for Res-11 (72 School Street).

Atlas included a field blank at each location for standard quality assurance/quality control (QA/QC) purposes. Samples were collected at each location, pre-treatment (if any), after flushing the system for at least 10 minutes. Samples were stored and transported on ice and in accordance with standard chain-of-custody procedures. Samples were submitted to Con-Test Pace Analytical Laboratory of East Longmeadow, MA, for laboratory analysis of PFAS by EPA Method 537.1 (specific to drinking water), which is a Vermont certified laboratory for PFAS in drinking water and is National Environmental Laboratory Accreditation Program (NELAP) accredited. Sampling was conducted in accordance with Atlas's SOPs. Field notes and water supply field collection forms are included in **Appendix A**. Photographs of supply well locations are in **Appendix B**.

3.2 SITE PREPARATION

Prior to the initiation of the SSI activities, Atlas updated the Site-specific Health and Safety Plan (HASP) in accordance with the Occupational Safety and Health Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The HASP detailed the potential exposures and risks associated with each onsite activity and the actions necessary to minimize potential exposure.

On June 14, 2022, Atlas personnel marked out the eight proposed boring locations (MW-101 through -108; **Figure 2**), contacted DigSafe, and met with a private utility locator. All subsurface utilities near boring locations were located and marked out to ensure they were not damaged during subsequent drilling.

3.3 ADDITIONAL SUBSURFACE INVESTIGATION

On June 23, 2022, Atlas provided oversight of the advancement of eight soil borings via direct push technology and continuous sampling methods (**Figure 2**). Continuous soil samples were logged using the modified Burmister system, however, they were not screened with a photoionization detector (PID) as PFAS is the contaminant of concern. See **Appendix A** for field notes and boring logs, and **Appendix C** for photographs. Six of the locations (MW-103, -104, -105, -106, -107, and -108) were completed as groundwater monitoring wells. Monitoring wells were constructed of 1.5-inch diameter PVC casing with 0.010" slotted five-foot screens, surrounded by a sand filter pack and sealed with bentonite. All monitoring wells were completed flush to the ground surface with a protective road box and cover. Two borings, MW-101 and -102, were not installed as monitoring wells due to assumed bedrock refusal at 4 fbgs and 8

fbgs, respectively, and no evidence of an overburden groundwater table. Evidence of groundwater at the other boring locations was recorded at depths between 3.5 and 9.5 fbgs. MW-103, -104, -105, -106, -107, and -108 were installed to depths of approximately 10 to 13.5 fbgs.

Soils were observed as brown, silty sand and silty gravel and cobbles, with color mottling near the observed water table. Refusal on bedrock was met in MW-101 at 4 fbgs, and at MW-102 at 8 fbgs. All wells were developed at the end of the drilling event; three wells had low recharge and were subsequently purged on the following day. All drill cuttings were returned to the boreholes. No soil samples were collected for PFAS analysis per the approved Work Plan.

All available monitoring wells were surveyed relative to existing Site features by Lakeside Environmental Group on July 8, 2022, for preparation of an updated Site Plan (**Figure 2**) and groundwater elevation contours.

3.4 GROUNDWATER INVESTIGATION

On July 11, 2022, Atlas returned to the Site to attempt to gauge the existing and newly installed monitoring wells. Wells MW-1, -2, -3, -4, -104, and -105 were dry. Atlas purged MW-103, -106, -107, and -108 via low-flow procedures in accordance with Atlas's SOP 8.30 for Groundwater Sample Collection Procedures Using Low Flow Sampling Methodology, based on the United States Environmental Protection Agency (EPA) Region 1 Low Stress (low flow) Purging and Sampling Procedure (SOP #: GW 0001, Rev. 4). Sampling in this manner allows for the collection of groundwater parameters such as specific conductivity, dissolved oxygen, oxygen-reduction potential, and pH during the purge process, and also reduces turbidity. Monitoring well MW-106 was purged dry after 10 minutes and did not recharge with enough volume for sample collection.

Purge water was containerized in a 55-gallon drum stored onsite for future offsite disposal. One equipment rinsate blank, one field blank, and one duplicate sample were collected for QA/QC purposes. The groundwater samples from MW-103, -107 and -108 and the QA/QC samples were analyzed for PFAS compounds via EPA Method 537, modified by isotope dilution (537Mod), by Con-Test Pace Analytical Laboratory of East Longmeadow, MA.

3.5 STANDARD OPERATING PROCEDURES (SOPS)

Atlas performed the work in accordance with SOPs outlined below, which have been previously submitted to VTDEC. Copies of SOPs can be provided upon request.

Atlas SOP	Field Procedure
SOP 1.0	Drilling Equipment Standards
SOP 2.0	Monitoring Well Construction Procedures
SOP 3.0	Well Development Procedures
SOP 4.0	General Sampling Procedures for Aqueous & Solid Matrices
SOP 8.3	Groundwater Sampling Using Low-Flow
SOP 9.0	Water Level Measurement Procedure
SOP 10.0	Decontamination Procedure
SOP 11.0	Sample Custody Procedure
SOP 19.0	Field Log Book
SOP 21.0	Sampling for PFAS

4. RESULTS

4.1 WATER SUPPLY SAMPLING RESULTS

PFAS compounds were detected in four (Res-3, -4, -9, and -12) of the ten water supply wells sampled on July 8, 2022, at concentrations below the VHA of 20 ng/L for the sum of five regulated compounds (**Table 1** and **Figure 3**). The only detected compounds in these four samples were PFOS and PFOA. The total regulated PFAS concentrations ranged from 2.4 ng/L at Res-9 (72 Kidder Hill Road), to 6.2 ng/L at Res-4 (47 School Street). Res-4 is located upgradient of GES; Res-3, -9 and -12 are located cross- and/or down-gradient of GES. There were no detections of non-regulated PFAS compounds in any of the supply wells sampled. No other PFAS compounds were detected in any of the other samples. No PFAS were detected in the associated field blanks. The laboratory analytical report is included in **Appendix C**.

4.2 GROUNDWATER SAMPLING RESULTS

The groundwater levels measured on July 11, 2022 in available monitoring wells are presented in **Table 2**, and are shown on **Figure 4**. Static water table elevations were calculated for each monitoring well by subtracting the measured depth-to-water from the surveyed top-of-casing elevations, which are relative to an arbitrary site datum of 200.00 feet. The groundwater in the unconfined surficial aquifer appears to flow in an east-southeasterly direction, which is consistent with previous reports by Verterre (2019). Groundwater elevations ranged from 172.76 feet (MW-106) to 189.41 feet (MW-108). Monitoring wells MW-1, -2, -3, -4, -104, and -105 were dry. A groundwater elevation contour map is presented in **Figure 4**.

Total regulated PFAS was reported in MW-107 (located cross-gradient of the GES leach field; **Figure 5**) at 60 ng/L, which exceeds the VGES of 20 ng/L (**Table 3**). All five of the regulated PFAS compounds were detected in the sample, as well as several non-regulated compounds, for a total PFAS concentration of 201 ng/L. Total regulated PFAS in MW-103 (located cross-gradient of the GES leach field) was reported at 8.9 ng/L (PFOS and PFOA, only) and total PFAS, including non-regulated compounds, was reported at 16.1 ng/L. Total regulated PFAS concentrations in MW-108 (located upgradient of GES) were 13.8 ng/L (PFHpA, PFOA, and PFOS) and total PFAS was reported at 23.7 ng/L. No PFAS were detected in the associated field blank or equipment blank. The associated duplicate sample from MW-103 was within 30% relative percent difference (RPD) of the sample, ranging from 0 – 11%. Groundwater PFAS results are presented on **Figure 5**; the laboratory analytical report is in **Appendix C**.

Atlas conducted a limited review of field and laboratory QA/QC data and procedures for this SSI at GES. All sample collection procedures were performed by Atlas in accordance with accepted criteria. The results of this data usability analysis indicate that the data used for the characterization of the Site are of suitable quality to support the conclusions of this SSI Report.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The objective of this SSI was to attempt to fill remaining data gaps, including the following:

- The PFAS-contaminated overburden groundwater has not been fully delineated;
- Evaluating potential impact to sensitive receptors;
- It has not been determined if PFAS-contaminated overburden groundwater is migrating offsite; and,
- The PFAS-contaminated bedrock aquifer has not been fully delineated.

The practicality of addressing these data gaps was limited by the documented minimal presence of overburden groundwater at and surrounding GES, which limits the ability to characterize PFAS concentrations and migration of overburden groundwater. However, an attempt to delineate the overburden groundwater, particularly at compliance points on- and offsite, is necessary for future decision-making processes, including the potential for groundwater reclassification at the property. The VTDEC elected not to perform additional bedrock drilling at this time, so as not to create additional potential preferential pathways for vertical PFAS migration.

In order to address the data gaps outlined above, Atlas attempted to install eight new offsite groundwater monitoring wells, and sample them along with the four existing onsite monitoring wells previously installed by Verterre. Atlas was able to install six of the eight proposed wells, as two of the locations had no evidence of overburden groundwater. All soil borings were advanced until refusal on assumed bedrock or evidence of at least five feet of saturated overburden. Onsite monitoring wells MW-1 through MW-4, and new offsite wells MW-103 through MW-108, were gauged on July 11, 2022 for depth to water. Of the ten available wells, six were dry and only three (MW-103, -107 and -108) had sufficient water for sample collection. Atlas also collected samples of ten nearby water supply wells on July 8, 2022, nine of which had previously been sampled by Verterre. All groundwater and supply well samples were analyzed for PFAS by Con-Test Pace Analytical of East Longmeadow, MA; groundwater was analyzed via EPA Method 537 modified with isotope dilution, and drinking water was analyzed via EPA Method 537.1. Atlas inadvertently missed the sample collection of a surface water sample from the pond located to the south of GES; the VTDEC has requested that a sample be collected next year in conjunction with other sampling in the area.

PFAS compounds were detected in four of the ten water supply wells sampled on July 8, 2022, at concentrations below the VHA of 20 ng/L for the sum of five regulated compounds. The only detected compounds in these four samples were PFOS and PFOA. The total regulated PFAS concentrations ranged from 2.4 ng/L at Res-9 (72 Kidder Hill Road), to 6.2 ng/L at Res-4 (47 School Street). There were no detections of non-regulated PFAS compounds in any of the supply wells sampled. No other PFAS compounds were detected in any of the other samples. No samples had reported detections exceeding the VHA.

Groundwater in the overburden aquifer appears to flow in an east-southeasterly direction, which is consistent with previous reports by Verterre (2019). On July 11, 2022, groundwater elevations ranged from 172.76 feet (MW-106) to 189.41 feet (MW-108). Monitoring wells MW-1, -2, -3, -4, -104, and -105 were dry. MW-106 purged dry and did not have sufficient recharge for sample collection. Total regulated PFAS was reported in offsite MW-107 (located cross-gradient of GES leach field) groundwater sample at 60 ng/L, which exceeds the VGES of

20 ng/L. All five of the regulated PFAS compounds were detected in the sample, as well as several non-regulated compounds, for a total PFAS concentration of 201 ng/L. Total regulated PFAS in MW-103 (located cross-gradient of GES leach field) was reported at 8.9 ng/L (PFOS and PFOA, only) and total PFAS, including non-regulated compounds, was reported at 16.1 ng/L. Total regulated PFAS concentrations in MW-108 (located up-gradient of GES) were 13.8 ng/L (PFHpA, PFOA, and PFOS) and total PFAS was reported at 23.7 ng/L.

Based on previous geophysical results of the GES supply well and sampling of onsite overburden groundwater monitoring wells, the onsite leach field is the most likely source of PFAS in the onsite bedrock supply well at GES. However, surrounding residences and businesses also utilize private septic systems; therefore, additional potential PFAS sources may exist in the area that may be contributing PFAS to the environment. At this time there are no known point sources of PFAS in the surrounding area; however, it is Atlas' understanding that a comprehensive source evaluation has not been completed. Additionally, PFAS was detected in overburden groundwater at cross- and upgradient locations to the GES leach field, suggesting that this previously identified source is likely not the only one contributing PFAS to groundwater in the area.

The PFAS compounds in the sampled overburden groundwater (up to nine regulated and non-regulated compounds) do not directly correlate to the PFAS compounds reported in bedrock supply wells (PFOA and PFOS, only); however, PFOA and PFOS are considered end-product PFAS compounds, and other PFAS can be precursors that eventually transform into those two compounds. It is possible that by the time the groundwater makes its way into bedrock, the precursor compounds have transformed into PFOA and PFOS. Alternatively, there are likely different sources of PFAS entering the overburden and bedrock aquifers.

5.2 RECOMMENDATIONS

Based on the above results and conclusions, Atlas offers the following recommendations:

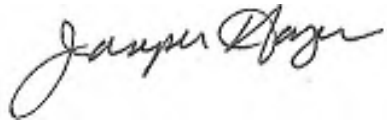
1. Attempt a confirmatory groundwater monitoring well sampling event in Spring 2023 (following snow melt and higher rainfall) and include a surface water sample for analysis of PFAS and assessing PFAS concentration trends.
2. Perform a confirmatory sampling round of the four bedrock supply wells (Res-3, -4, -9 and -12) that had detections of regulated PFAS. Water quality results should be submitted to the property owners.
3. Properly dispose of the purge water drum.
4. Quarterly sampling of bedrock water supply well at Res-2 (70 School Street) should continue for analysis of PFAS, as should the quarterly sampling and operation and maintenance of the POET system at GES.
5. It is unlikely that installation of additional overburden monitoring wells would yield any more groundwater data than the existing well network, due to the minimal presence of overburden groundwater. The best course of action may be to reclassify groundwater at GES and implement Atlas' recommendations presented in the Evaluation of Corrective Action Alternatives (ECAA, June 2020).

SIGNATURE OF REPORT AUTHORS

This report has been prepared by the employees of Atlas Technical Consultants, LLC whose signatures appear below. Requests for information on the contents of this report should be directed to these individuals.

I certify under penalty of perjury that I am an environmental professional and that all content contained within this deliverable is to the best of my knowledge true and correct.

Prepared by:



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TABLES

Table 1
PFAS Concentrations - Water Supply Wells

Grafton Elementary School
Grafton, Vermont

Sample Date: July 8, 2022

PFAS Group	PFAS Compound	VHA (ng/L)	Water Supply Samples (ng/L)										Quality Assurance/Quality Control Samples				
			RES-1	RES-3	RES-4	RES-5	RES-6	RES-7	RES-8	RES-9	RES-10	RES-12		RES-3 FB	RES-4 FB	RES-9-FB	RES-12 FB
			151 Townshend	66 Pleasant	47 School	94 Pleasant	15 School	30 Pleasant	193 Townshend	72 Kidder Hill	136 Kidder Hill	108 Pleasant		66 Pleasant	47 School	72 Kidder Hill	108 Pleasant
PFACA	perfluorohexanoic acid (PFHxA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluoroheptanoic acid (PFHpA)	20	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorooctanoic acid (PFOA)	20	ND<2.0	ND<2.1	**2.2**	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorononanoic acid (PFNA)	20	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorodecanoic acid (PFDA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluoroundecanoic acid (PFUnA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorododecanoic acid (PFDoA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorotridecanoic acid (PFTrDA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorotetradecanoic acid (PFTA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
PFASA	perfluorobutanesulfonic acid (PFBS)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorohexanesulfonic acid (PFHxS)	20	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorooctanesulfonic acid (PFOS)	20	ND<2.0	**3.5**	**4.0**	ND<2.0	ND<1.9	ND<1.9	ND<2.2	**2.4**	ND<1.9	**2.7**		ND<1.8	ND<1.9	ND<1.8	ND<1.9
PFOSA	perfluorooctane sulfonamidoacetic acid (MeFOSAA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	perfluorooctane sulfonamidoacetic acid (EtFOSAA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
Next Gen PFAS Analytes	hexafluoropropylene oxide dimer acid (HFPO-DA, or GenX)	--	ND<2.0[a]	ND<2.1	ND<1.9	ND<2.0[a]	ND<1.9	ND<1.9[a]	ND<2.2[a]	ND<1.9[a]	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8[a]	ND<1.9
	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS, or F-53B Major)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS, or F-53B Minor)	--	ND<2.0	ND<2.1	ND<1.9	ND<2.0	ND<1.9	ND<1.9	ND<2.2	ND<1.9	ND<1.9	ND<1.8		ND<1.8	ND<1.9	ND<1.8	ND<1.9
Total PFAS with VHA Values		20	ND	**3.5**	**6.2**	ND	ND	ND	ND	**2.4**	ND	**2.7**		ND	ND	ND	ND
Total Analyzed PFAS		--	ND	**3.5**	**6.2**	ND	ND	ND	ND	**2.4**	ND	**2.7**		ND	ND	ND	ND

Notes:
PFAS - poly-/perfluoroalkyl substances
PFACA - perfluoroalkylcarboxylic acids
PFASA - perfluoroalkylsulfonates
PFOSA - perfluorooctanesulfonamides
Results given in nanograms per liter (ng/L), parts-per-trillion.
ND< - Not-Detected at or above laboratory reporting limit, specified.
VHA - Vermont Health Advisory (May 3, 2019 Drinking Water Guidance); 5 regulated compounds should not exceed 20 ng/L individually or summed.
-- no VHA for compound
Analyzed by EPA Method 537.1 by Con-Test Pace Analytical of East Longmeadow, MA.
FB - Field Blank location sample; analyzed only if detections were reported in parent sample.
[a] = Laboratory fortified blank/laboratory control sample recovery was outside of control limits. Reported value for this compound is likely to be biased low.

Table 2
Groundwater Elevations

Grafton Elementary School
Grafton, Vermont

July 11, 2022

Well I.D.	Top of Casing Elevation (ft)	Depth to Bottom (ft bTOC)	Depth to Water (ft bTOC)	Water Table Elevation (ft)
MW-1	195.32	7.21	DRY	--
MW-2	194.78	7.15	DRY	--
MW-3	200.48	10.60	DRY	--
MW-4	196.01	10.97	DRY	--
MW-103	182.70	9.61	5.60	177.10
MW-104	199.14	13.22	DRY	--
MW-105	191.74	13.43	DRY	--
MW-106	185.28	13.55	12.52	172.76
MW-107	190.42	9.68	4.65	185.77
MW-108	194.84	9.69	5.43	189.41

Notes:
All values reported in feet relative to arbitrary site benchmark of 200.00 feet.
ft bTOC - feet below top of casing
Site surveyed on July 8, 2022 by Lakeside Environmental Group.

Table 3
PFAS Concentrations - Groundwater

Grafton Elementary School
Grafton, VT

Sample Date: July 11, 2022

PFAS Compound	VGES (ng/L)	MW-103	MW-107	MW-108	Quality Assurance/Quality Control Samples	Field Blank	Equipment Blank	DUP (MW-103)	*RPD*
Perfluorobutanoic acid (PFBA)	--	ND<2.0	**13**	**3.8**		ND<1.9	ND<2.3	ND<1.9	--
Perfluorobutanesulfonic acid (PFBS)	--	**2.1**	**2.9**	ND<1.8		ND<1.9	ND<2.3	**1.9**	*10%*
Perfluoropentanoic acid (PFPeA)	--	**2.4**	**49**	**3.1**		ND<1.9	ND<2.3	**2.3**	*4%*
Perfluorohexanoic acid (PFHxA)	--	**2.7**	**76**	**3.0**		ND<1.9	ND<2.3	**2.7**	*0%*
11Cl-PF3OUdS (F53B Major)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
9Cl-PF3ONS (F53B Minor)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Hexafluoropropylene oxide dimer acid (HFPO-DA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
8:2 Fluorotelomersulfonic acid (8:2FTS A)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorodecanoic acid (PFDA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorododecanoic acid (PFDoA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoroheptanesulfonic acid (PFHpS)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
N-EtFOSAA	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
N-MeFOSAA	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorotetradecanoic acid (PFTA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorotridecanoic acid (PFTrDA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
4:2 Fluorotelomersulfonic acid (4:2FTS A)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorodecanesulfonic acid (PFDS)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorooctanesulfonamide (FOSA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorononanesulfonic acid (PFNS)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoro-1-hexanesulfonamide (FHxSA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoro-1-butanesulfonamide (FBSA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoro-4-oxapentanoic acid (PFMPA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoro-5-oxahexanoic acid (PFMBA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
6:2 Fluorotelomersulfonic acid (6:2FTS A)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoropetanesulfonic acid (PFPeS)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoroundecanoic acid (PFUnA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	--	ND<2.0	ND<1.9	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluoroheptanoic acid (PFHpA)	**20**	ND<2.0	**7.2**	**2.4**		ND<1.9	ND<2.3	ND<1.9	--
Perfluorooctanoic acid (PFOA)	**20**	**2.4**	**25**	**6.7**		ND<1.9	ND<2.3	**2.6**	*8%*
Perfluorooctanesulfonic acid (PFOS)	**20**	**6.5**	**13**	**4.7**		ND<1.9	ND<2.3	**5.8**	*11%*
Perfluorononanoic acid (PFNA)	**20**	ND<2.0	**8.7**	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Perfluorohexanesulfonic acid (PFHxS)	**20**	ND<2.0	**5.9**	ND<1.8		ND<1.9	ND<2.3	ND<1.9	--
Total Regulated PFAS	**20**	**8.9**	**60**	**13.8**		ND	ND	**8.4**	--
Total Analyzed PFAS	--	**16.1**	**201**	**23.7**		ND	ND	**15.3**	--

Notes:
PFAS - poly-/perfluoroalkyl substances
Results given in nanograms per liter (ng/L), parts per trillion.
ND< - Not-Detected at or above laboratory reporting limit, specified.
VGES - Vermont Groundwater Enforcement Standard
-- No VGES for compound
Shaded areas indicate VGES exceedences, either individually or summed with other regulated PFAS for total >20 ng/L.
Analyzed by EPA Method 537 (modified) by Con-Test Pace Analytical of East Longmeadow MA.
RPD - relative percent difference, between parent and duplicate sample results; not calculated for ND.

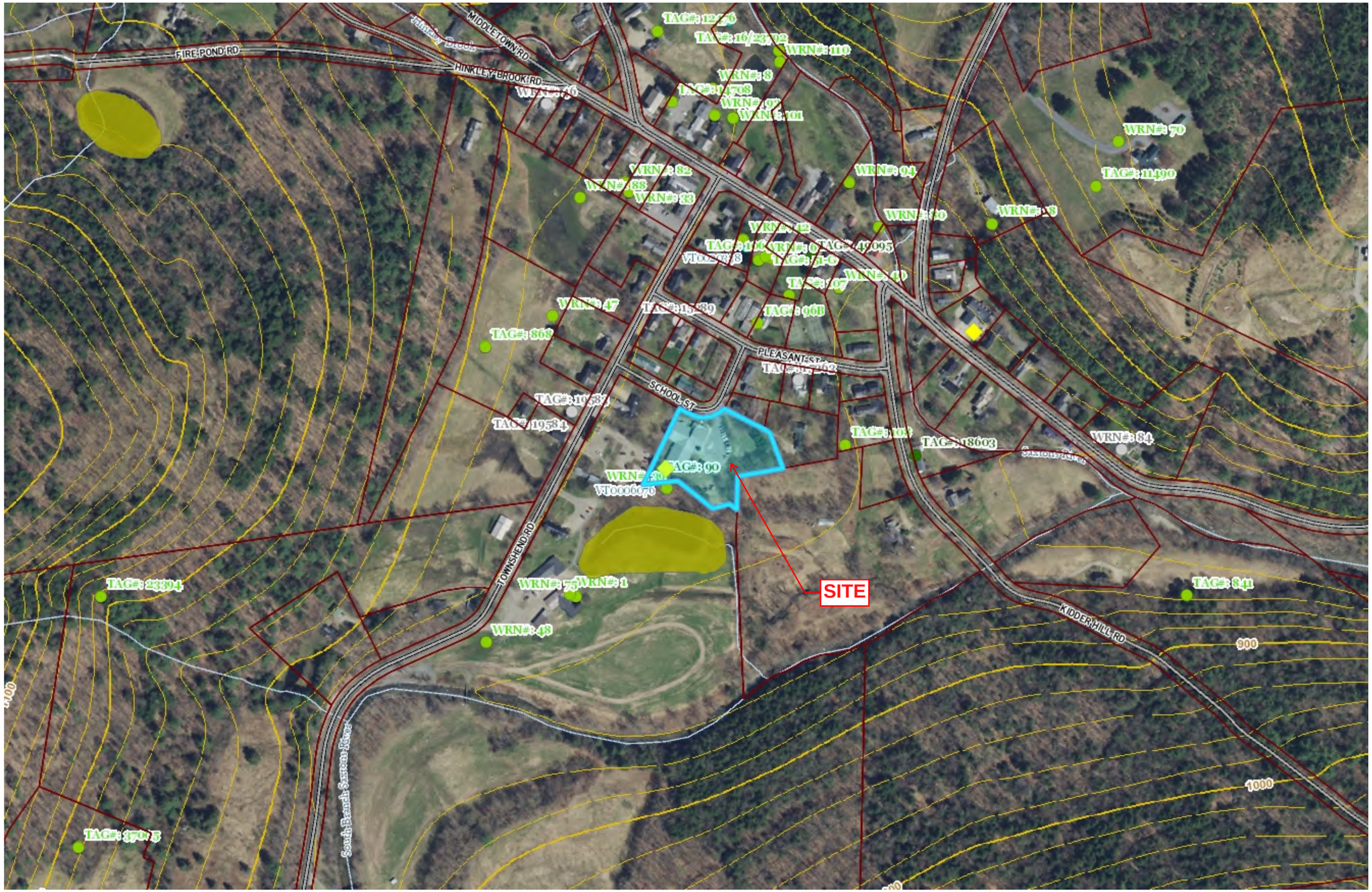
FIGURES

ATLAS

Figure 1 - Site Vicinity Map

Grafton Elementary School

58 School Street
Grafton, VT



LEGEND

- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Buffer
- Hazardous Site
- Private Wells
  - Incorrectly Located
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
- Public Water Sources
  - Active
  - Proposed
  - Inactive
- Parcels (standardized)
- Stream/River
  - Stream
  - Intermittent Stream

VERMONT

1: 3,907

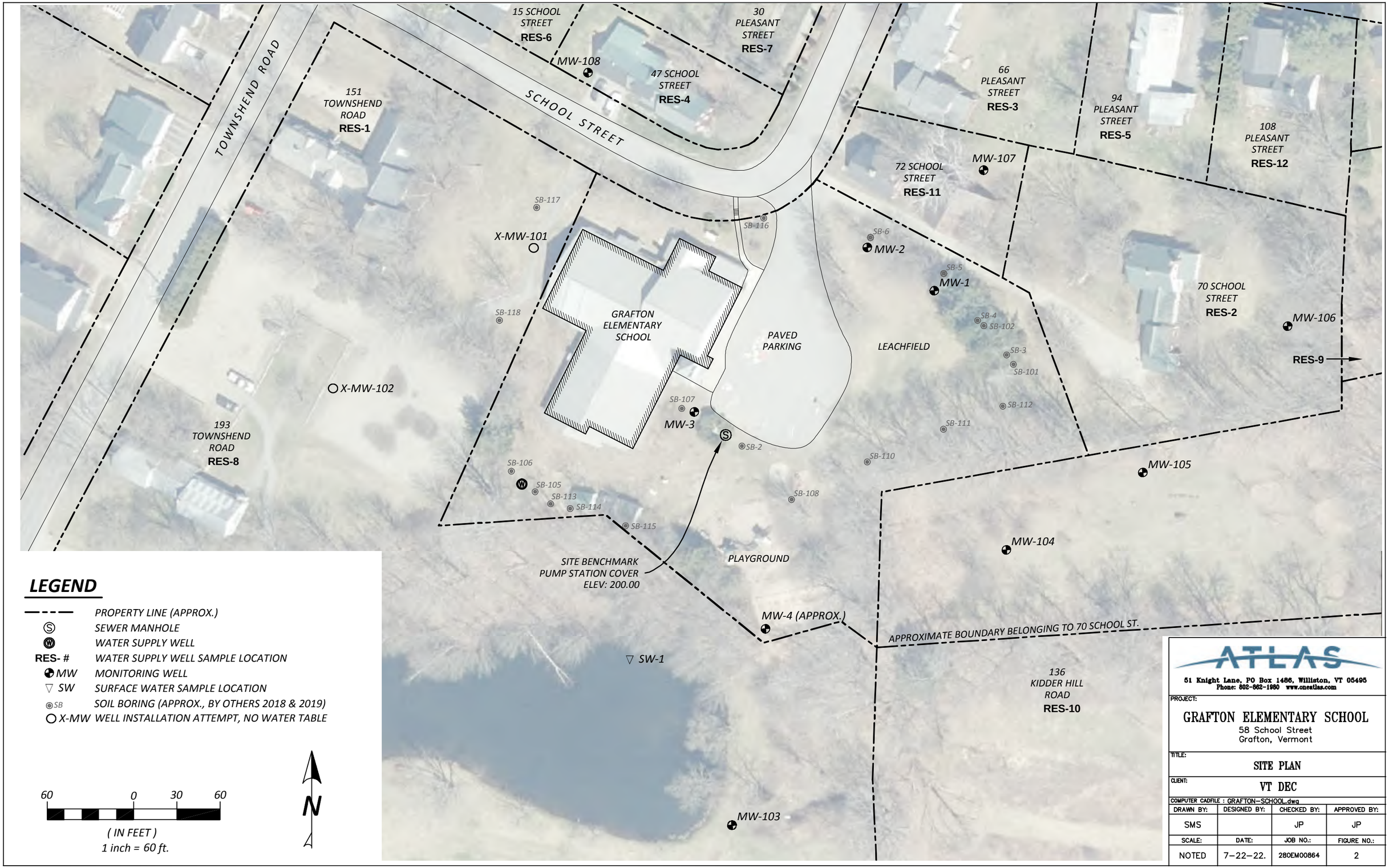
1in = 326 ft.
1cm = 39 meters

198.0 0 99.00 198.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

NOTES

Map created using ANR's Natural Resources Atlas



LEGEND

- PROPERTY LINE (APPROX.)
- Ⓢ SEWER MANHOLE
- Ⓦ WATER SUPPLY WELL
- RES- # WATER SUPPLY WELL SAMPLE LOCATION
- MW MONITORING WELL
- SW SURFACE WATER SAMPLE LOCATION
- SB SOIL BORING (APPROX., BY OTHERS 2018 & 2019)
- X-MW WELL INSTALLATION ATTEMPT, NO WATER TABLE

60 0 30 60

(IN FEET)

1 inch = 60 ft.

N

ATLAS

51 Knight Lane, PO Box 1486, Williston, VT 05495
Phone: 802-862-1980 www.oneatlas.com

PROJECT:

GRAFTON ELEMENTARY SCHOOL

58 School Street
Grafton, Vermont

TITLE:

SITE PLAN

CLIENT:

VT DEC

COMPUTER CADFILE : GRAFTON-SCHOOL.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
SMS		JP	JP
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
NOTED	7-22-22.	28OEM00864	2

TOWNSHEND ROAD

SCHOOL STREET

ND ND
15 SCHOOL STREET
RES-6

MW-108

30 PLEASANT STREET
RES-7
ND
ND

47 SCHOOL STREET
RES-4
4.0
2.2

66 PLEASANT STREET
RES-3
3.5
ND

94 PLEASANT STREET
RES-5
ND
ND

108 PLEASANT STREET
RES-12
2.7
ND

151 TOWNSHEND ROAD
RES-1
ND
ND

MW-107

72 SCHOOL STREET
RES-11

SB-117

SB-116

SB-6

MW-2

SB-5

MW-1

70 SCHOOL STREET
RES-2

MW-106

SB-118

GRAFTON ELEMENTARY SCHOOL

PAVED PARKING

LEACHFIELD

SB-4

SB-102

SB-3

SB-101

RES-9
2.4
ND

SB-107

MW-3

SB-112

SB-111

193 TOWNSHEND ROAD
RES-8
ND
ND

SB-2

SB-110

MW-105

SB-106

SB-105

SB-113

SB-114

SB-115

SB-108

MW-104

SITE BENCHMARK
PUMP STATION COVER
ELEV: 200.00

PLAYGROUND

MW-4 (APPROX.)

APPROXIMATE BOUNDARY BELONGING TO 70 SCHOOL ST

SW-1

136 KIDDER HILL ROAD
RES-10
ND
ND

MW-103

LEGEND

	PROPERTY LINE (APPROX.)
Ⓢ	SEWER MANHOLE
Ⓦ	WATER SUPPLY WELL
RES- #	WATER SUPPLY WELL SAMPLE LOCATION
MW	MONITORING WELL
SW	SURFACE WATER SAMPLE LOCATION
SB	SOIL BORING (APPROX., BY OTHERS 2018 & 2019)

EXPLANATION

4.0	PFOS IN DRINKING WATER (ng/L)
2.2	PFOA IN DRINKING WATER (ng/L)
	ND = NON-DETECT

60 0 30 60

(IN FEET)
1 inch = 60 ft

N

ATLAS
51 Knight Lane, PO Box 1486, Williston, VT 05495
Phone: 802-662-1980 www.oneatlas.com

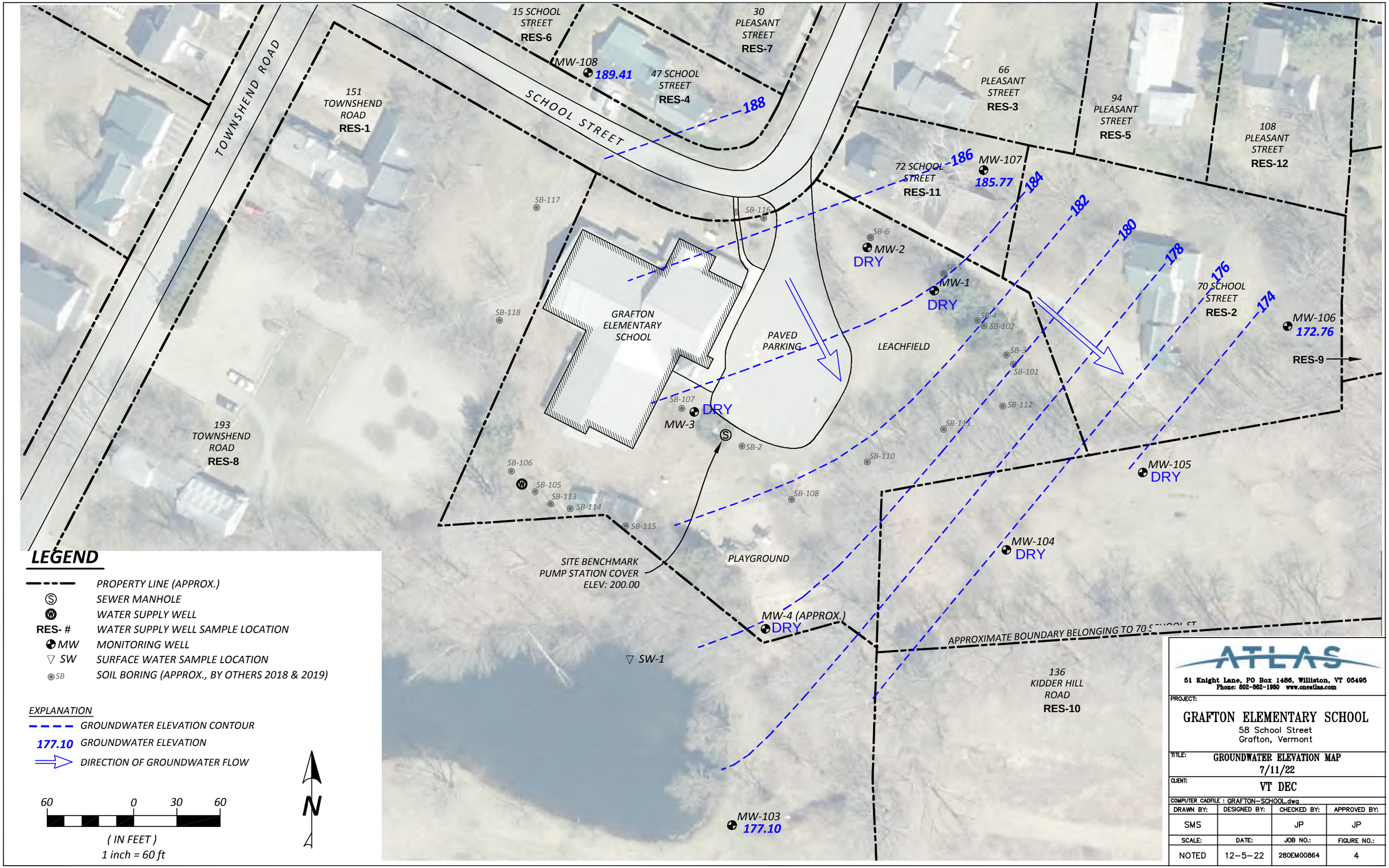
PROJECT:
GRAFTON ELEMENTARY SCHOOL
58 School Street
Grafton, Vermont

TITLE:
PFAS CONCENTRATIONS IN WATER SUPPLY WELLS (7/8/2022)

CLIENT:
VT DEC

COMPUTER CADFILE : GRAFTON-SCHOOL.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
SMS		JP	JP
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
NOTED	12-5-22	280EM00864	3



LEGEND

———	PROPERTY LINE (APPROX.)
Ⓢ	SEWER MANHOLE
Ⓦ	WATER SUPPLY WELL
RES- #	WATER SUPPLY WELL SAMPLE LOCATION
MW	MONITORING WELL
SW	SURFACE WATER SAMPLE LOCATION
SB	SOIL BORING (APPROX., BY OTHERS 2018 & 2019)

EXPLANATION

- - -	GROUNDWATER ELEVATION CONTOUR
177.10	GROUNDWATER ELEVATION
⇒	DIRECTION OF GROUNDWATER FLOW

60 0 30 60

(IN FEET)

1 inch = 60 ft

N

ATLAS

51 Knight Lane, PO Box 1486, Williston, VT 05495
Phone: 802-862-1980 www.oneatlas.com

PROJECT:

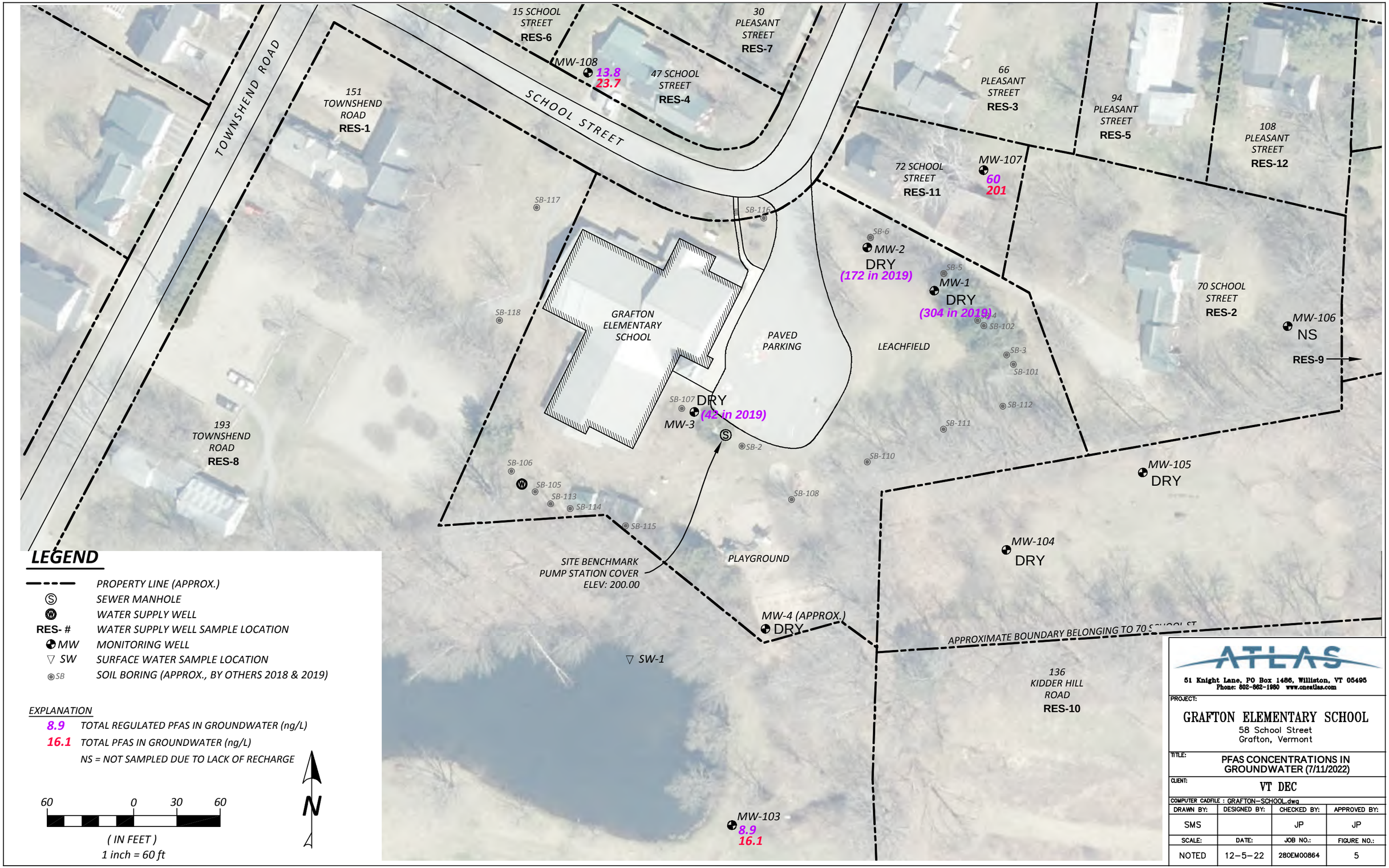
GRAFTON ELEMENTARY SCHOOL
58 School Street
Grafton, Vermont

TITLE: **GROUNDWATER ELEVATION MAP 7/11/22**

CLIENT: **VT DEC**

COMPUTER CADFILE : GRAFTON-SCHOOL.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
SMS		JP	JP
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
NOTED	12-5-22	280EM00864	4



LEGEND

PROPERTY LINE (APPROX.)	
Ⓢ	SEWER MANHOLE
Ⓦ	WATER SUPPLY WELL
RES- #	WATER SUPPLY WELL SAMPLE LOCATION
MW	MONITORING WELL
SW	SURFACE WATER SAMPLE LOCATION
SB	SOIL BORING (APPROX., BY OTHERS 2018 & 2019)

EXPLANATION

8.9	TOTAL REGULATED PFAS IN GROUNDWATER (ng/L)
16.1	TOTAL PFAS IN GROUNDWATER (ng/L)
	NS = NOT SAMPLED DUE TO LACK OF RECHARGE

60 0 30 60

(IN FEET)

1 inch = 60 ft

N

ATLAS
51 Knight Lane, PO Box 1486, Williston, VT 05495
Phone: 802-662-1960 www.oneatlas.com

PROJECT:

GRAFTON ELEMENTARY SCHOOL
58 School Street
Grafton, Vermont

TITLE:

PFAS CONCENTRATIONS IN GROUNDWATER (7/11/2022)

CLIENT:

VT DEC

COMPUTER CADFILE : GRAFTON-SCHOOL.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
SMS		JP	JP
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
NOTED	12-5-22	280EM00864	5

APPENDIX A

FIELD NOTES & BORING LOGS

6/14/22 Grafton School 280EM00864 PUL
0920 M. EL onsite to meet Tyler Button PUL
weather - 75° sunny, light breeze

Task: Mark out boring locations and clear all w/ PUL
Numbers - refer to map + site contact list

(1) 151 Townshend - no access agmt. yet, but Karl called + she's OK to do work. Michelle (631)398-1766 - Jo to obtain agreement. Marked boring near deck, but not sure if drill rig can fit thru fence. Jo to check w/ owner. Marked replacement location just outside fence closest to school, if needed. All clear for UL (MW-101) well in front

(2) 70 school St. (MW-106) - behind house, moved south to avoid leach field. (MW-104 + -105) marked in field. *Ask Cascade to bring mats + seed/mulch just in case!! All cleared for UL

** All MW's to be completed w/ flush mounts **

(3) 66 Pleasant - DW only, no PUL

(4) 47 School St - no access; Sam + Liz Povo apparently related to Beulah + Terry Parole (#6) - Jo to try emailing Terry re: both properties (MW-108) Tried knocking on both doors, no answer; left note w/ agreement in Povos door. Make some passes w/ GPR just in case. Near house/fire pit OK.
*see note on page 2 (#4)

(5) (6) (7) All DW only, no PUL needed

(8) 193 Townshend (MW-102) in parking lot near fence (MW-103) on edge of field near pond *access w/ rig through school playground * Ask Karl where leachfield is. Karl to print + sign access agreement + give to Jo or Emma

#(9) (10) (12) DW only, no PUL needed

pg 1 of 2 →

Scale: 1 square =

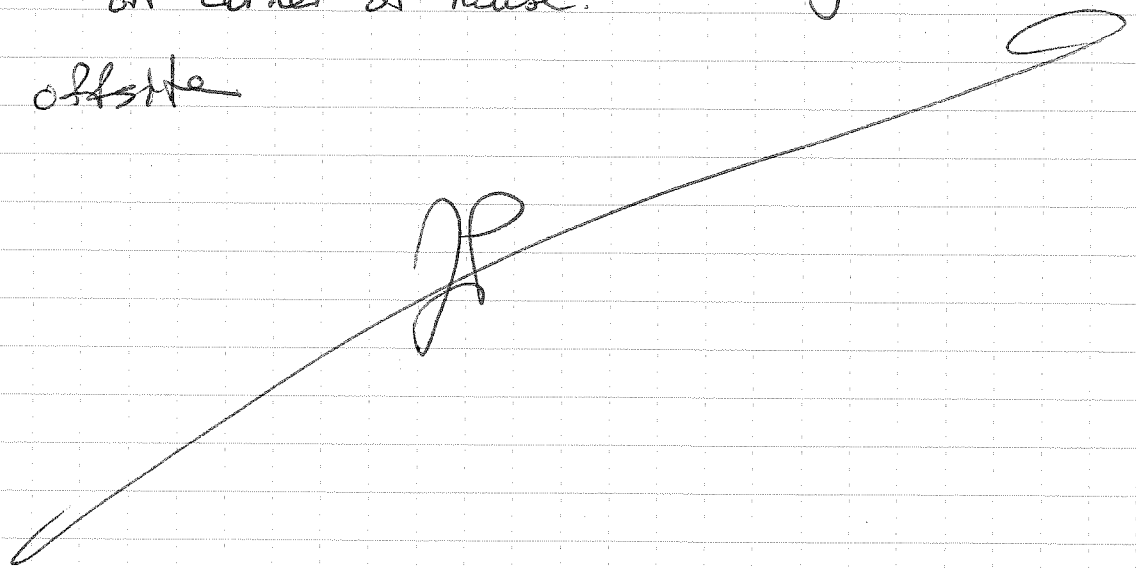
cont. Grafton

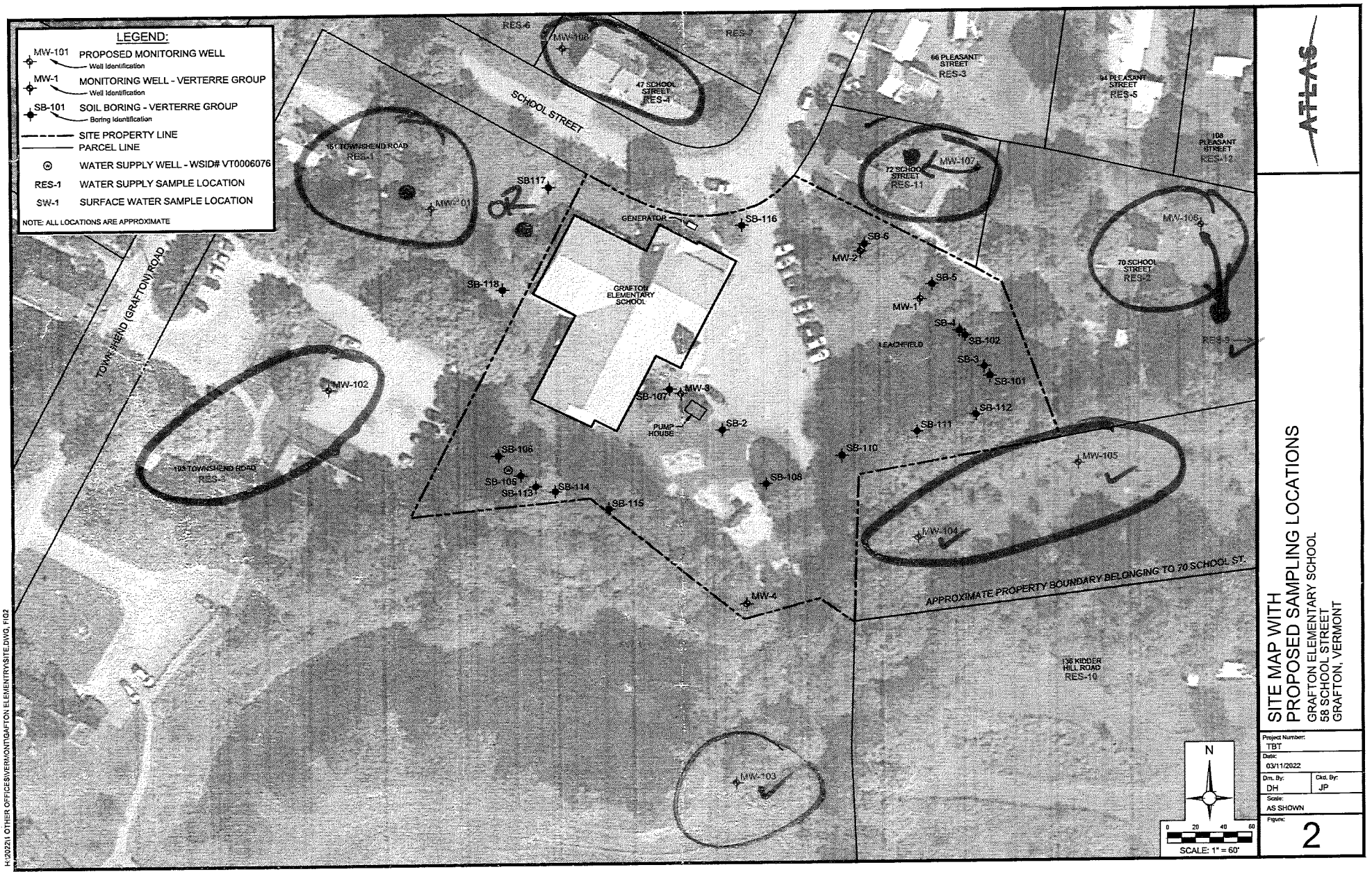
(11) 72 school St (MW-107) Blacksmith Shop
- no water source or septic; both buildings belong to Windham Foundation. Placed well in longer grass. All clear for UL.

All locations called in for DigSafe; Ticket #s are: 20222310469
" 0489
0498
0477
0503

To do list prior to next weeks drilling:
(1) Call Michelle re: 151 Townshend access and fence access
see below ~~(2) Call/email Terry re: 47 School access + 15 School for DW~~
(3) Let Cascade know:
a) bring mats, seed + mulch
b) all locations in grass (no asphalt)
c) all wells to be flush mount
d) remind about decon for PFAS between locations
e) no Verizon cell coverage, ATT is good
(4) Email copy of access agmt. to Liz Provo; she got home and signed it. Owners of 15 School are a Longer Terry + Beulah Daigle - now Logan + Jocelyn Brown
- keep rig on asphalt driveway, install MW-108 off corner of house.

1300 offsite





ATLAS

SITE MAP WITH PROPOSED SAMPLING LOCATIONS

GRAFTON ELEMENTARY SCHOOL
58 SCHOOL STREET
GRAFTON, VERMONT

Project Number: TBT	
Date: 03/11/2022	
Drn. By: DH	Ckd. By: JP
Scale: AS SHOWN	
Figure: 2	

H:\2022\1 OTHER OFFICES\VERMONT\GRAFTON ELEMENTRY\SITE.DWG, FIG2

7/8/22 28ENO0864 Grafton School
DW + Survey

0900 JP onsite weather 70° sunny
- sample 10 DW's for S37.1
- survey new (6) and old (4) wells w/ Scott Smith of LEG (10 am)
- see water supply forms

15 School St Res-6 @ 0915
Res-6 FB @ 0910

47 School St Res-4 @ 0930
Res-4 FB @ 0925

108 Pleasant St Res-12 @ 1000
Res-12 FB @ 0958

136 Kidder Hill Rd. Res-10 @ 1100
Res-10 FB @ 1058

66 Pleasant St. Res-3 @ 1240
Res-3 FB @ 1238

1300 LEG offsite, surveyed all but MW-4

94 Pleasant St. Res-5 @ 1310
Res-5 FB @ 1308

72 Kidder Hill Rd. Res-9 @ 1340
Res-9 FB @ 1338

193 Townshead Rd Res-8 @ 1410
Res-8 FB @ 1408

30 Pleasant St. Res-7 @ 1430
Res-7 FB @ 1428

2800N00864 cont.
7/8/22
- Karl not available - works part time now; met Matt Haseltine who provided access Mhaseltine@windham-foundation.org

151 Townshend Rd. Res-1 @ 1500
Res-1 FB @ 1450

1510 JP offsite

JP

Pg 2 of 2

280EM00864 6/23/22
Grafton Elementary School
60° overcast
E.L. & CASCADE on site @ 815 am
8 MW installs

- E.L. presented tailgate safety mtg (see attached form)
- K checked for Michelle @ 151 Townshend Rd, no one was there.

MW-103 : well set @ 10'
MW-104 : well set @ 13.5'
MW-105 : well set @ 13.0'
MW 106 : well set @ 13.0'
MW 107 : well set @ 10.0'
MW 108 : well set @ 10.0'
mw 101 : refusal @ 4.0' no well set
mw 102 refusal @ 7.5-8.0' no well set

} see logs for details

Cascade off site @ 345pm
began to develop wells.
↳ not enough water in 104 or 105, will come back tomorrow
E.L. off site @ 430pm

6 wells
2 soil borings

E.L.

Scale: 1 square = _____

6/23/22

t form)
one was there.

see logs for details

come back

6- cloudy

6/24/22 1 of 1

E.L. on site @ 630am to develop wells installed on 6/23/22.

MW-103 : high recharge

MW-108 : med recharge (went dry - recharged in 10-15 mins)

MW-104, MW-105, MW-106 : only 1-2" of water, very low recharge.

* purge water in drum near school. ~5 gallons total

EL off site 1230

Scale: 1 square = _____

Rite in the Rain

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-101

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School Street Grafton VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	250EM00864
ATLAS REPRESENTATIVE:	Emma L.
DRILLING COMPANY:	CASCADE
SAMPLING METHOD:	DPT
REFERENCE POINT (RP):	
ELEVATION OF RP:	

WELL DEPTH:	—	BORING DEPTH:	4.0'
DEPTH TO WATER (DURING DRILLING):			
SCREEN DIAMETER:	~~1.5"~~	DEPTH:	
SCREEN TYPE/SIZE:	~~SLOTTED PVC~~		
RISER DIAMETER:	~~1.5"~~	DEPTH:	
RISER TYPE/SIZE:	~~PVC~~		
REMARKS:	REFUSAL		

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		grey-white sand and crushed gravel				Concrete
1						Native
2						Bentonite
3		bedrock (?) fragments				Filter Sand
4		refusal @ 4.0'				Riser
5		* exposed bedrock near proposed				Screen
6		mw-101 to south & west				Water level
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		Notes:
AND	33-50%	<2	VERY SOFT	0-4	VERY LOOSE	PID used: ~~IonScience Tiger~~
SOME	20-33%	2-4	SOFT	4-10	LOOSE	
LITTLE	10-20%	4-8	MEDIUM STIFF	10-30	MEDIUM DENSE	
TRACE	0-10%	8-15	STIFF	30-50	DENSE	
		15-30	VERY STIFF	>50	VERY DENSE	
		>30	HARD			

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495

(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-102

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School Street Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280 EM00864

WELL DEPTH:		BORING DEPTH:		ATLAS REPRESENTATIVE:	Emma L.
DEPTH TO WATER (DURING DRILLING):				DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:		DEPTH:			
SCREEN TYPE/SIZE:				SAMPLING METHOD:	DPT
RISER DIAMETER:		DEPTH:		REFERENCE POINT (RP):	
RISER TYPE/SIZE:				ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A	WELL PROFILE	LEGEND
0		brown fine - medium sand trace gravel	X	X		Concrete
1				X		Native
2	3.5'/5.0'			X		
3		grey - white sand & crushed gravel	X	X		Bentonite
4				X		Filter Sand
5				X		
6				X		Riser
7		crushed bedrock (?)		X		Screen
8		refusal @ 8.0'				
9		* set over 5' to try again				Water level
10		- refusal @ 7.5'				
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROPORTIONS USED	
AND	33-50%
SOME	20-33%
LITTLE	10-20%
TRACE	0-10%

BLOW COUNT (COHESIVE SOILS)	
<2	VERY SOFT
2-4	SOFT
4-8	MEDIUM STIFF
8-15	STIFF
15-30	VERY STIFF
>30	HARD

BLOW COUNT (GRANULAR SOILS)	
0-4	VERY LOOSE
4-10	LOOSE
10-30	MEDIUM DENSE
30-50	DENSE
>50	VERY DENSE

Notes:

PID used: IonScience Tiger

ATLAS

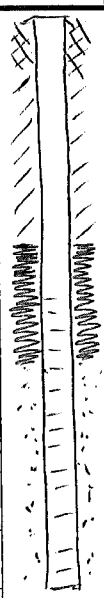
51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-103

SITE NAME:	Grafton Elem.
SITE LOCATION:	58 School St. Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280 EM 00864

WELL DEPTH:	10.0'	BORING DEPTH:	10.0'	ATLAS REPRESENTATIVE:	E.L.
DEPTH TO WATER (DURING DRILLING):	3.5'			DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5'	DEPTH:	5.0 - 10.0'		
SCREEN TYPE/SIZE:	SlOHed PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5'	DEPTH:	5.0 - 0.0'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)
0		d. brown top soil, silty sand w/ organics.		x
1		[l. brown fine sand w/ gravel		x
2	2.5'	[		x
3		[dark brown fine sand w/ trace ▼		x
4		silt, wet		x
5		[saa		x
6		[		x
7	3.0'	[		x
8		[		x
9		grey silty sand w/ gravel, dense		x
10		well set @ 10.0'		
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				



LEGEND
- Concrete
- Native
- Bentonite
- Filter Sand
- Riser
- Screen
- Water level

PROPORTIONS USED
- AND 33-50%
- SOME 20-33%
- LITTLE 10-20%
- TRACE 0-10%

BLOW COUNT (COHESIVE SOILS)

<2	VERY SOFT
2-4	SOFT
4-8	MEDIUM STIFF
8-15	STIFF
15-30	VERY STIFF
>30	HARD

BLOW COUNT (GRANULAR SOILS)

0-4	VERY LOOSE
4-10	LOOSE
10-30	MEDIUM DENSE
30-50	DENSE
>50	VERY DENSE

Notes:

PID used: ~~IonScience Piger~~

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-104

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School St. Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280Em00864

WELL DEPTH:	13.5'	BORING DEPTH:	13.5'	ATLAS REPRESENTATIVE:	E.L.
DEPTH TO WATER (DURING DRILLING):	8.5'			DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5"	DEPTH:	8.5' - 13.5'		
SCREEN TYPE/SIZE:	Slotted PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5"	DEPTH:	0 - 8.5'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A	WELL PROFILE	LEGEND
0		8" d. brown topsoil, silty sand w/ organics	X	X		Concrete
1		grey & orange medium sand w/ fine gravel & gravel	X	X		Native
2	3.0'/5.0'			X		
3				X		Bentonite
4				X		Filter Sand
5				X		
6				X		Riser
7	4.5'/5.0'			X		Screen
8		light brown silt & fine sand ▼	X	X		
9		- color mottling		X		Water level
10				X		
11	3.5'/3.5'			X		
12				X		
13						
14		refusal @ 13.5' well set @ 13.5'				
15						
16						
17						
18						
19						
20						

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		Notes:
AND	33-50%	<2	VERY SOFT	0-4	VERY LOOSE	
SOME	20-33%	2-4	SOFT	4-10	LOOSE	PID used: ~~IonScience Figo~~
LITTLE	10-20%	4-8	MEDIUM STIFF	10-30	MEDIUM DENSE	
TRACE	0-10%	8-15	STIFF	30-50	DENSE	
		15-30	VERY STIFF	>50	VERY DENSE	
		>30	HARD			

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-105

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School Street Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280EM00864

WELL DEPTH:	13.0'	BORING DEPTH:	13.5'	ATLAS REPRESENTATIVE:	Emma. L.
DEPTH TO WATER (DURING DRILLING):	8.5'			DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5"	DEPTH:	8.0 - 13.0'		
SCREEN TYPE/SIZE:	Slot Head PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5"	DEPTH:	0 - 8.0'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A	WELL PROFILE	LEGEND
0		6" d. brown Topsoil w/ organics		X		Concrete
1		brown silty sand w/ fine gravel		X		Native
2	4.0'/5.0'	grey & orange medium sand w/ fine & large gravel pieces	X	X		Bentonite
3				X		Filter Sand
4				X		Riser
5				X		Screen
6				X		Water level
7	5.0'/5.0'			X		
8		light brown silt w/ fine sand ▼	X	X		
9				X		
10		2" of clean fine sand		X		
11	3.5'/3.5'			X		
12				X		
13				X		
14		refusal @ 13.5' well set @ 13.0'				
15						
16						
17						
18						
19						
20						

E.L.

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)	
AND	33-50%	<2	VERY SOFT	0-4	VERY LOOSE
SOME	20-33%	2-4	SOFT	4-10	LOOSE
LITTLE	10-20%	4-8	MEDIUM STIFF	10-30	MEDIUM DENSE
TRACE	0-10%	8-15	STIFF	30-50	DENSE
		15-30	VERY STIFF	>50	VERY DENSE
		>30	HARD		

Notes:

PID used: ~~IonScience Tiger~~

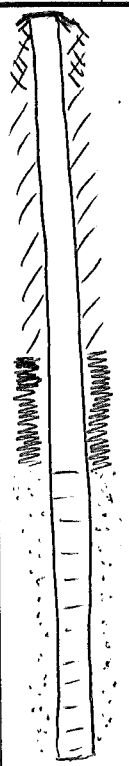
ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW - 106

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School St. Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280 EM00864

WELL DEPTH:	13.0'	BORING DEPTH:	13.0'	ATLAS REPRESENTATIVE:	Emma L.
DEPTH TO WATER (DURING DRILLING):				DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5"	DEPTH:	8.0 - 13.0'		
SCREEN TYPE/SIZE:	Slotted PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5"	DEPTH:	0.0 - 8.0'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A	WELL PROFILE	LEGEND
0		8" d. br. Topsoil w/organics (silty sand)	x	x		Concrete
		3" orange fine sand	x			
1		6" crushed grey/white gravel pieces	x	x		Native
2	2.5/5.0'	d. brown fine - medium sand w/ some fine gravel	x	x		Bentonite
3				x		
4				x		Filter Sand
5				x		
6				x		Riser
7	1.5'/5.0'			x		Screen
8				x		
9		light brown silt w/ fine sand (wet) ▼	x	x		Water level
10				x		
11	3.0'/3.0'			x		
12				x		
13		refusal @ 13.0'				
14						
15						
16						
17						
18						
19						
20						

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		Notes:
AND	33-50%	<2	VERY SOFT	0-4	VERY LOOSE	PID used: IonScience Tiger
SOME	20-33%	2-4	SOFT	4-10	LOOSE	
LITTLE	10-20%	4-8	MEDIUM STIFF	10-30	MEDIUM DENSE	
TRACE	0-10%	8-15	STIFF	30-50	DENSE	
		15-30	VERY STIFF	>50	VERY DENSE	
		>30	HARD			

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: MW-107

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School St. Grafton VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280 EM00864

WELL DEPTH:	10.0'	BORING DEPTH:	10.0'	ATLAS REPRESENTATIVE:	Emma L.
DEPTH TO WATER (DURING DRILLING):	4.5'			DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5"	DEPTH:	5.0 - 10.0'		
SCREEN TYPE/SIZE:	Slotted PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5"	DEPTH:	0.0 - 5.0'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A	WELL PROFILE	LEGEND
0		6" d. brown topsoil, silty sand w/ organics.	x	x		Concrete
1		light brown silty sand w/ fine gravel	x	x		Native
2	4.0'/5.0'	becomes darker brown		x		Bentonite
3				x		
4		grey fine sand w/ trace silt ▽	x	x		Filter Sand
5				x		
6		· trace fine gravel		x		Riser
7	5.0'/5.0'			x		Screen
8		orange & brown fine - med sand	x	x		
9				x		Water level
10		well set @ 10.0'				
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROPORTIONS USED	
AND	33-50%
SOME	20-33%
LITTLE	10-20%
TRACE	0-10%

BLOW COUNT (COHESIVE SOILS)	
<2	VERY SOFT
2-4	SOFT
4-8	MEDIUM STIFF
8-15	STIFF
15-30	VERY STIFF
>30	HARD

BLOW COUNT (GRANULAR SOILS)	
0-4	VERY LOOSE
4-10	LOOSE
10-30	MEDIUM DENSE
30-50	DENSE
>50	VERY DENSE

Notes:

PID used: ~~IonScience Tiger~~

ATLAS

51 KNIGHT LANE
WILLISTON, VERMONT 05495
(802) 862-1980
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: ~~MW-1~~ E.L. MW-108

SITE NAME:	Grafton Elementary School
SITE LOCATION:	58 School St. Grafton, VT
INSTALLATION DATE:	6/23/22
JOB NUMBER:	280EM00564

WELL DEPTH:	10.0'	BORING DEPTH:	10.0'	ATLAS REPRESENTATIVE:	Emma L.
DEPTH TO WATER (DURING DRILLING):	7.0'			DRILLING COMPANY:	CASCADE
SCREEN DIAMETER:	1.5"	DEPTH:	5 - 10.0'		
SCREEN TYPE/SIZE:	slotted PVC			SAMPLING METHOD:	DPT
RISER DIAMETER:	1.5"	DEPTH:	0 - 5.0'	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM) N/A
0		4" d. br. topsoil, silty sand w/ organics	✓	X
1	3.5/5.0'	light brown fine sand w/ fine gravel	✓	X
2				X
3		grey - light grey fine sand - gravel	✓	X
4				X
5				X
6				X
7	4.0/5.0'	orange/brown silty sand w/ trace gravel		X
8				X
9				X
10		refusal @ 10.0'		
11		well set @ 10.0'		
12				
13				
14				
15				
16				
17				
18				
19				
20				

WELL PROFILE

LEGEND
- Concrete
- Native
- Bentonite
- Filter Sand
- Riser
- Screen
- Water level

PROPORTIONS USED	
AND	33-50%
SOME	20-33%
LITTLE	10-20%
TRACE	0-10%

BLOW COUNT (COHESIVE SOILS)	
<2	VERY SOFT
2-4	SOFT
4-8	MEDIUM STIFF
8-15	STIFF
15-30	VERY STIFF
>30	HARD

BLOW COUNT (GRANULAR SOILS)	
0-4	VERY LOOSE
4-10	LOOSE
10-30	MEDIUM DENSE
30-50	DENSE
>50	VERY DENSE

Notes:

PID used: ~~IonScience Tiger~~

280EM00864
Grafton Elementary School — 7/11/22
EL & KP on site GW sampling PFAS — 75° sunny

EL on site @ 825am - found & opened all wells
KP on site 9am

	DTW	DTB		
MW-1	dry	7.21		—
2	dry	7.15		—
3	dry	10.60		—
4	dry	10.97		—
MW-103	~~Dry~~ 60	9.61	☆ duplicate taken	1025
104	dry	13.22		—
105	dry	13.43		—
106	12.52	13.55		
107	4.65	9.68		1135
108	KP			

gauged, sampled, closed all wells (see attached for data)

off site @ 1345

Scale: 1 square = _____

Rite in the Rain

Grafton School 280EM00864 7/1/22 Pg 1/1

- Arrived onsite @0900
- EL gauged wells while I calibrated YSI/Turbidimeters
  ↳ 6/10 wells were dry
- MW108 Started sampling @ 1015 → Sampled @ 1053
- MW106 Started @ 1110 → ~~sampled @ 1145~~ KP (well went dry → only got 1 YSI read)
  ↳ well never recharged
- Field Blank @ 1130
- EQ Blank @ 1135
- Left site @ 1235

KP

ATLAS

Well Sampling Form – Page 1 of 2

Site Name/Location: Grafton Elem. School Date: 7/18/22

Sample I.D.: MW-103 Collection Time 1025

Sampling Sequence: 1 Of 4

Atlas Field Staff Collecting This Sample: Emma L.

Climatic Conditions (Temp/Precip): 70° Sunny

Depth To Product: None. Feet Depth To Water: 5.60 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): — feet

Measurement Technique (WLM, IP or other -Describe) WLM

Presence/Absence Of NAPL And Detection Method: None

Total Depth Of Boring (Take Measurement After Sampling): 9.61

Well Yield: High X Low _____ Pumped Dry? _____

Final Water Appearance (At Sample Collection) Clear X Cloudy _____ Opaque _____

Sample Collected from (tubing, bailer, or other-describe) tubing

Submitted For Analysis By (Method or Methods): PFAS

Field Test Results (HACH Kits):

Alkalinity: _____ Chloride: _____

Iron (II): _____ Sulfate: _____

Notes: sampled @ 1025

A Duplicate

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: Crafton Elem. School
Depth To ~4.5 / 9.61 Of Screen (Below RP)
Well Id: MW-05
Top Bottom
Field Personnel: Emma L
Pump Intake Depth: 7
Reference Point (RP – TOC or other-describe): TOC
Pumping Device: geopump

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min	Pump Speed	Cumulative Volume Purged	Temperature °C 3%	Specific Conductance (uS/cm) 3%	pH ±0.1	ORP / eH (mV) ±10	DO (Mg/L) 10 %	Turbidity (NTU) 10%	Comments
1000	5.60	START									
1005	5.68	100		0.5	17.1	332.1	6.40	102.1	0.77	48.6	
1010	5.68	100		1.0	17.2	297.2	6.37	65.9	0.50	20.9	
1015	5.68	100		1.5	17.1	296.2	6.37	44.7	0.43	10.2	
1020	5.68	100		2.0	17.2	295.8	6.36	40.1	0.44	>.2	

Notes:

Sample collected @ 1025
* Duplicate

Last Update: Sep 2005

ATLAS

Well Sampling Form – Page 1 of 2

Site Name/Location: Grafton Elem. School Date: 7/11/22

Sample I.D.: MW-107 Collection Time 1135

Sampling Sequence: 2 Of 4

Atlas Field Staff Collecting This Sample: Emma L.

Climatic Conditions (Temp/Precip): 75° Sunny

Depth To Product: None Feet Depth To Water: 4.65 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): – feet

Measurement Technique (WLM, IP or other -Describe) WLM

Presence/Absence Of NAPL And Detection Method: None

Total Depth Of Boring (Take Measurement After Sampling): 9.68

Well Yield: High X Low _____ Pumped Dry? _____

Final Water Appearance (At Sample Collection) Clear X Cloudy _____ Opaque _____

Sample Collected from (tubing, bailer, or other-describe) tubing

Submitted For Analysis By (Method or Methods): PFAS

Field Test Results (HACH Kits):

Alkalinity: _____ Chloride: _____

Iron (II): _____ Sulfate: _____

Notes: _____

sampled @ 1135

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: MW-107 Depth To 4.5 / 9.68 Of Screen (Below RP)

Well Id: Grafton Elem. School Top Bottom

Field Personnel: Emma L. Pump Intake Depth: 7'

Reference Point (RP – TOC or other-describe): TOC Pumping Device: geopump

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min)	Pump Speed	Cumulative Volume Purged	Temperature °C 3%	Specific Conductance (uS/cm) 3%	pH ±0.1	ORP / eH (mV) ±10	DO (Mg/L) 10 %	Turbidity (NTU) 10%	Comments
1100	4.65	100		START							
1105	4.96	100		0.5	13.1	209.9	6.23	98.2	0.93	102	
1110	4.98	100		1.0	13.2	204.6	5.84	80.6	0.61	74.4	
1115	4.98	100		1.5	13.2	200.9	5.82	64.5	0.56	38.6	
1120	4.98	100		2.0	13.1	196.9	5.83	51.1	0.53	19.5	
1125	4.98	100		2.5	13.1	195.4	5.85	43.2	0.52	7.2	
1130	4.98	100		3.0	13.2	196.2	5.84	45.2	0.52	5.6	

Notes:

Sample collected @ 1135

Last Update: Sep 2005

ATLAS

Well Sampling Form – Page 1 of 2

Site Name/Location: Grafton School Date: 7/11/22

Sample I.D.: MW-106 Collection Time 1145

Sampling Sequence: 2 of 2

Atlas Field Staff Collecting This Sample: K. Pitts

Climatic Conditions (Temp/Precip): Sunny 85°

Depth To Product: — Feet Depth To Water: 12.25 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): — feet

Measurement Technique (WLM, IP or other -Describe) WLM

Presence/Absence Of NAPL And Detection Method: —

Total Depth Of Boring (Take Measurement After Sampling): 13.55

Well Yield: High_____ Low_____ Pumped Dry? ✓

Final Water Appearance (At Sample Collection) Clear ✓ Cloudy_____ Opaque_____

Sample Collected from (tubing, bailer, or other-describe) tubing

Submitted For Analysis By (Method or Methods): 537.0 MOD

Field Test Results (HACH Kits):

Alkalinity: — Chloride: —

Iron (II): — Sulfate: —

Notes:

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: Grafton School
Depth To 8.55 / 13.55 Of Screen (Below RP)
Well Id: MW-106 Top Bottom
Field Personnel: K. Pitts
Pump Intake Depth: ~13
Reference Point (RP – TOC or other-describe): TOC
Pumping Device: Peri

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min)	Pump Speed	Cumulative Volume Purged	Temperature °C 3%	Specific Conductance (uS/cm) 3%	pH ±0.1	ORP / eH (mV) ±10	DO (Mg/L) 10 %	Turbidity (NTU) 10%	Comments
1120	12.25	—	—	—	—	—	—	—	—	—	Start
1125	13.34	100	—	0.5	15.5	444.6	6.41	146	7.12	13.4	
1130	13.55	—	—	—	—	—	—	—	—	—	Dry

Notes:

Well went dry after 10 minutes
~~Sampled @ 1145~~ KP Waited 45 minutes. Well never recharged couldn't get a sampled. Well was in good condition otherwise – water was clear/bottom felt good

Last Update: Sep 2005

ATLAS

Well Sampling Form – Page 1 of 2

Site Name/Location: HP MW-1 Grafton School Date: 7/11/22

Sample I.D.: MW-108 Collection Time 1053

Sampling Sequence: 1 Of 2

Atlas Field Staff Collecting This Sample: K. Pitts

Climatic Conditions (Temp/Precip): Sunny 85°

Depth To Product: — Feet Depth To Water: 5.43 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): — feet

Measurement Technique (WLM, IP or other -Describe) WLM

Presence/Absence Of NAPL And Detection Method: —

Total Depth Of Boring (Take Measurement After Sampling): 9.69

Well Yield: High ✓ Low _____ Pumped Dry? _____

Final Water Appearance (At Sample Collection) Clear _____ Cloudy ✓ Opaque _____

Sample Collected from (tubing, bailer, or other-describe) tubing

Submitted For Analysis By (Method or Methods): 537-MOD (PFAS)

Field Test Results (HACH Kits):

Alkalinity: — Chloride: —

Iron (II): — Sulfate: —

Notes: _____

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: Grafton School
Well Id: MW-108
Field Personnel: TP
Reference Point (RP – TOC or other-describe): TOC

Depth To 4.69 / 9.69 Of Screen (Below RP)
Top Bottom
Pump Intake Depth: ~ 8 ft
Pumping Device: peri

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min)	Pump Speed	Cumulative Volume Purged	Temperature °C 3%	Specific Conductance (uS/cm) 3%	pH ±0.1	ORP / eH (mV) ±10	DO (Mg/L) 10 %	Turbidity (NTU) 10%	Comments
1020	5.43	100	—	—	—	—	—	—	—	—	Start
1025	5.66	100	—	0.5	16.2	3223	6.26	26.6	0.04	529	
1030	5.64	100	—	1.0	16.2	3826	6.07	59.1	0.27	211	
1035	5.64	100	—	1.5	16.1	4167	6.00	66.9	0.22	243	
1040	5.66	100	—	2.0	16.2	4373	5.93	75.9	0.23	162	
1045	5.66	100	—	2.5	16.1	4492	5.89	81.7	0.29	99.7	
1050	5.66	100	—	3.0	16.1	4509	5.85	84.8	0.33	56.7	

Notes:

Sampled @ 1053

Last Update: Sep 2005

YSI MULTIPARAMETER METER

Serial No.: _____ Model No.: 4464 Decal No.: _____

Site Name: Grafton School Job No.: 280EM00864

Instrument is calibrated in accordance with Manufacturer's Instructions

DATE: 8/11/22	Pre Calibration Readings	Post Calibration Readings	PM Check	Calibration STDs (lot #'s)	Signature	Remarks
Cond. mS/cm	893	1423	1418		KP	
pH=4.0	3.86	3.99	4.02			
pH=7.0	6.70	7.0	6.88			
pH=10.0	9.76	10.02	9.92			
D.O. mg/l / % 100	~~96.6~~ KP 94.2	~~97.3~~ KP 101.3	93.4			
ORP mV	178	219.5	224.3			
Temp C	22.8	—	—			
Baro. Press. mmHg	737	—	—			

DATE:						
Cond. mS/cm						
pH=4.0						
pH=7.0						
pH=10.0						
D.O mg/l / %						
ORP mV						
Temp C						
Baro. Press. mmHg						

TURBIDITY METER CALIBRATION LOG

INSTRUMENT NAME: Geotech Turbidity MODEL No.: _____

SERIAL No.: _____ DECAL No.: 7308 CHARGE No. _____

CALIBRATION DATE	CAL. STANDARD 1 - <0.2 AM / PM		CAL. STANDARD 2 - 20 AM / PM		CAL. STANDARD 3 - 100 AM / PM		SIGNATURE	COMMENTS 500 am / pm
7/11/22	0.02	0.02	20.0	19.6	104	101		806 / 798

YSI MULTIPARAMETER METER

Serial No.: YSI Model No.: 6549 Decal No.: _____

Site Name: _____ Job No.: _____

Instrument is calibrated in accordance with Manufacturer's Instructions

DATE: 7/11/22	Pre Calibration Readings	Post Calibration Readings	PM Check	Calibration STDs (lot #'s)	Signature	Remarks
Cond. mS/cm	1222	1413	1553			
pH=4.0	3.82	4.02	4.29			
pH=7.0	6.88	7.02	7.24			
pH=10.0	9.89	10.00	10.11			
D.O. mg/l / %	96.6	97.3	95.0			
ORP mV	177	219.7	223.1			
Temp C	22.8	—	—			
Baro. Press. mmHg	737	—	—			

DATE:						
Cond. mS/cm						
pH=4.0						
pH=7.0						
pH=10.0						
D.O mg/l / %						
ORP mV						
Temp C						
Baro. Press. mmHg						

TURBIDITY METER CALIBRATION LOG

INSTRUMENT NAME: Geotech Turbidimeter MODEL No.:

SERIAL No.: DECAL No.: 6732 CHARGE No.

CALIBRATION DATE	CAL. STANDARD 1 - <0.02 AM / PM		CAL. STANDARD 2 - 20 AM / PM		CAL. STANDARD 3 - 100 AM / PM		SIGNATURE	COMMENTS 800 am / pm
7/11/22	002	0.20	20.0	20.9	112	107		813 / 789

APPENDIX B

PHOTOGRAPHS

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name: *VT DEC*	**Site Location:** *Grafton Elementary School* *58 School Street* *Grafton, VT*	**Atlas Project #:** *280EM00864*

Photograph #1	
Description: *Res-1 (151 Townshend Road) supply well location.*	

Photograph #2	
Description: *Res-2 (70 School Street) supply well location (circled in red).*	

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name:	Site Location:	Atlas Project #:
VT DEC	*Grafton Elementary School* *58 School Street* *Grafton, VT*	*280EM00864*

Photograph #3

Description:
Res-3 (66 Pleasant Street) supply well location.

Photograph #4

Description:
Res-4 (47 School Street) supply well location – flush with ground in center of flower bed.

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name: *VT DEC*	**Site Location:** *Grafton Elementary School* *58 School Street* *Grafton, VT*	**Atlas Project #:** *280EM00864*

Photograph #5

Description: *Res-5 (94 Pleasant Street) supply well location.*

Photograph #6

Description: *Res-8 (193 Townshend Road) supply well location – under raised flower box.*

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name:	Site Location:	Atlas Project #:
VT DEC	*Grafton Elementary School* *58 School Street* *Grafton, VT*	*280EM00864*

Photograph #7

Description:
Res-10 (136 Kidder Hill Road) supply well location in back yard.

Photograph #8

Description:
Res-12 (108 Pleasant Street) supply well location – under tree line.

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name:	Site Location:	Atlas Project #:
VT DEC	*Grafton Elementary School* *58 School Street* *Grafton, VT*	*280EM00864*

Photograph #9

Description:
Drilling on 6/23/2022 at offsite properties near GES. This is the attempted MW-102 location.

Photograph #10

Description:
An example of soil lithology in soil borings collected on 6/23/2022. Some mottling is visible near the water table.

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 04595

PHOTOGRAPHS

Client Name:	Site Location:	Atlas Project #:
VT DEC	*Grafton Elementary School* *58 School Street* *Grafton, VT*	*280EM00864*

Photograph #11

Description:
Location of newly installed MW-103 near the pond, located south of GES.

Photograph #12

Description:
Location of the purge water drum near the GES building.

APPENDIX C

ANALYTICAL LABORATORY REPORTS

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

August 22, 2022

Jo Palmer
ATC Group Services LLC - Vermont
51 Knight Lane, PO Box 1486
Williston, VT 05495

Project Location: Grafton, VT
Client Job Number:
Project Number: 280EM00864
Laboratory Work Order Number: 22G0691

Enclosed are results of analyses for samples as received by the laboratory on July 13, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ATC Group Services LLC - Vermont
51 Knight Lane, PO Box 1486
Williston, VT 05495
ATTN: Jo Palmer

REPORT DATE: 8/22/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 280EM00864

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22G0691

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Grafton, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-108	22G0691-01	Ground Water		SOP-454 PFAS	
Field Blank	22G0691-02	Ground Water		SOP-454 PFAS	
Eq Blank	22G0691-03	Ground Water		SOP-454 PFAS	
MW-107	22G0691-04	Ground Water		SOP-454 PFAS	
MW-103	22G0691-05	Ground Water		SOP-454 PFAS	
Dup	22G0691-06	Ground Water		SOP-454 PFAS	

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

N-MeFOSAA
B313896-BSD1

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2PFTA
22G0691-04[MW-107], 22G0691-05[MW-103], 22G0691-06[Dup]

M8FOSA
22G0691-04[MW-107], 22G0691-05[MW-103], 22G0691-06[Dup]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Nonafluoro-3,6-dioxaheptanoic aci
S075552-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: MW-108 | Sampled: 7/11/2022 10:53

Sample ID: 22G0691-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.8	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoropentanoic acid (PFPeA)	3.1	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorohexanoic acid (PFHxA)	3.0	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
11Cl-PF3OUdS (F53B Major)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
9Cl-PF3ONS (F53B Minor)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
N-EtFOSAA	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
N-MeFOSAA	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluoroheptanoic acid (PFHpA)	2.4	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorooctanoic acid (PFOA)	6.7	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorooctanesulfonic acid (PFOS)	4.7	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:27	BLH

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: Field Blank | Sampled: 7/11/2022 11:30

Sample ID: 22G0691-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:34	BLH

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: Eq Blank | Sampled: 7/11/2022 11:35

Sample ID: 22G0691-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoropentanoic acid (PFPeA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorohexanoic acid (PFHxA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
11Cl-PF3OUdS (F53B Major)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
9Cl-PF3ONS (F53B Minor)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorodecanoic acid (PFDA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
N-EtFOSAA	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
N-MeFOSAA	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorooctanoic acid (PFOA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH
Perfluorononanoic acid (PFNA)	ND	2.3	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:42	BLH

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: MW-107 | Sampled: 7/11/2022 11:35

Sample ID: 22G0691-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	13	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorobutanesulfonic acid (PFBS)	2.9	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoropentanoic acid (PFPeA)	49	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorohexanoic acid (PFHxA)	76	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorohexanesulfonic acid (PFHxS)	5.9	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluoroheptanoic acid (PFHpA)	7.2	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorooctanoic acid (PFOA)	25	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorooctanesulfonic acid (PFOS)	13	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH
Perfluorononanoic acid (PFNA)	8.7	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/16/22 23:49	BLH

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: MW-103 | Sampled: 7/11/2022 10:25

Sample ID: 22G0691-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorobutanesulfonic acid (PFBS)	2.1	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoropentanoic acid (PFPeA)	2.4	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorohexanoic acid (PFHxA)	2.7	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
11Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
9Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
N-EtFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
N-MeFOSAA	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorooctanoic acid (PFOA)	2.4	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorooctanesulfonic acid (PFOS)	6.5	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:11	BLH

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0691

Date Received: 7/13/2022

Field Sample #: Dup | Sampled: 7/11/2022 00:00

Sample ID: 22G0691-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorobutanesulfonic acid (PFBS)	1.9	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoropentanoic acid (PFPeA)	2.3	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorohexanoic acid (PFHxA)	2.7	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
N-EtFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
N-MeFOSAA	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorooctanoic acid (PFOA)	2.6	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorooctanesulfonic acid (PFOS)	5.8	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	7/28/22	8/17/22 0:18	BLH

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Sample Extraction Data

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22G0691-01 [MW-108]	B313896	276	1.00	07/28/22
22G0691-02 [Field Blank]	B313896	262	1.00	07/28/22
22G0691-03 [Eq Blank]	B313896	222	1.00	07/28/22
22G0691-04 [MW-107]	B313896	258	1.00	07/28/22
22G0691-05 [MW-103]	B313896	253	1.00	07/28/22
22G0691-06 [Dup]	B313896	260	1.00	07/28/22

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B313896 - SOP 454-PFAAS										
Blank (B313896-BLK1)				Prepared: 07/28/22 Analyzed: 08/16/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	1.8	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	1.8	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA	ND	1.8	ng/L							
N-MeFOSAA	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	1.8	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B313896-BS1)				Prepared: 07/28/22 Analyzed: 08/16/22						
Perfluorobutanoic acid (PFBA)	8.81	1.8	ng/L	9.05		97.4	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.47	1.8	ng/L	8.00		93.3	72-130			
Perfluoropentanoic acid (PFPeA)	8.77	1.8	ng/L	9.05		97.0	72-129			
Perfluorohexanoic acid (PFHxA)	8.58	1.8	ng/L	9.05		94.9	72-129			
11Cl-PF3OUdS (F53B Major)	7.23	1.8	ng/L	8.52		84.8	50-150			
9Cl-PF3ONS (F53B Minor)	8.29	1.8	ng/L	8.43		98.4	50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	7.79	1.8	ng/L	8.52		91.4	50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.92	1.8	ng/L	9.05		87.5	50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.77	1.8	ng/L	8.68		89.4	67-138			
Perfluorodecanoic acid (PFDA)	8.75	1.8	ng/L	9.05		96.7	71-129			
Perfluorododecanoic acid (PFDoA)	8.97	1.8	ng/L	9.05		99.2	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	6.88	1.8	ng/L	8.05		85.5	50-150			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B313896 - SOP 454-PFAAS											
LCS (B313896-BS1)				Prepared: 07/28/22 Analyzed: 08/16/22							
Perfluoroheptanesulfonic acid (PFHpS)	8.08	1.8	ng/L	8.64		93.5		69-134			
N-EtFOSAA	11.6	1.8	ng/L	9.05		128		61-135			
N-MeFOSAA	11.1	1.8	ng/L	9.05		123		65-136			
Perfluorotetradecanoic acid (PFTA)	8.70	1.8	ng/L	9.05		96.2		71-132			
Perfluorotridecanoic acid (PFTrDA)	9.97	1.8	ng/L	9.05		110		65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.86	1.8	ng/L	8.46		93.0		63-143			
Perfluorodecanesulfonic acid (PFDS)	7.32	1.8	ng/L	8.73		83.8		53-142			
Perfluorooctanesulfonamide (FOSA)	8.38	1.8	ng/L	9.05		92.7		67-137			
Perfluorononanesulfonic acid (PFNS)	8.27	1.8	ng/L	8.68		95.3		69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	9.35	1.8	ng/L	9.05		103		50-150			
Perfluoro-1-butanesulfonamide (FBSA)	7.78	1.8	ng/L	9.05		86.0		50-150			
Perfluorohexanesulfonic acid (PFHxS)	7.77	1.8	ng/L	8.28		93.8		68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	7.54	1.8	ng/L	9.05		83.4		50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	7.99	1.8	ng/L	9.05		88.3		50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.23	1.8	ng/L	8.59		95.7		64-140			
Perfluoropetanesulfonic acid (PFPeS)	8.17	1.8	ng/L	8.50		96.1		71-127			
Perfluoroundecanoic acid (PFUnA)	9.41	1.8	ng/L	9.05		104		69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	6.24	1.8	ng/L	9.05		69.0		50-150			
Perfluoroheptanoic acid (PFHpA)	8.77	1.8	ng/L	9.05		97.0		72-130			
Perfluorooctanoic acid (PFOA)	8.75	1.8	ng/L	9.05		96.8		71-133			
Perfluorooctanesulfonic acid (PFOS)	7.81	1.8	ng/L	8.37		93.4		65-140			
Perfluorononanoic acid (PFNA)	9.06	1.8	ng/L	9.05		100		69-130			
LCS Dup (B313896-BSD1)				Prepared: 07/28/22 Analyzed: 08/16/22							
Perfluorobutanoic acid (PFBA)	9.66	1.8	ng/L	9.15		106		73-129	9.13	30	
Perfluorobutanesulfonic acid (PFBS)	8.19	1.8	ng/L	8.09		101		72-130	9.30	30	
Perfluoropentanoic acid (PFPeA)	9.52	1.8	ng/L	9.15		104		72-129	8.21	30	
Perfluorohexanoic acid (PFHxA)	9.28	1.8	ng/L	9.15		101		72-129	7.78	30	
11Cl-PF3OUdS (F53B Major)	7.98	1.8	ng/L	8.62		92.6		50-150	9.93	30	
9Cl-PF3ONS (F53B Minor)	7.90	1.8	ng/L	8.52		92.7		50-150	4.87	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	8.42	1.8	ng/L	8.62		97.7		50-150	7.75	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	9.26	1.8	ng/L	9.15		101		50-150	15.7	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	9.89	1.8	ng/L	8.78		113		67-138	24.1	30	
Perfluorodecanoic acid (PFDA)	8.48	1.8	ng/L	9.15		92.8		71-129	3.06	30	
Perfluorododecanoic acid (PFDoA)	10.9	1.8	ng/L	9.15		119		72-134	19.6	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	7.52	1.8	ng/L	8.14		92.4		50-150	8.83	30	
Perfluoroheptanesulfonic acid (PFHpS)	8.88	1.8	ng/L	8.73		102		69-134	9.40	30	
N-EtFOSAA	11.7	1.8	ng/L	9.15		128		61-135	1.17	30	
N-MeFOSAA	13.3	1.8	ng/L	9.15		**146**	*	65-136	18.0	30	L-01
Perfluorotetradecanoic acid (PFTA)	9.89	1.8	ng/L	9.15		108		71-132	12.8	30	
Perfluorotridecanoic acid (PFTrDA)	10.2	1.8	ng/L	9.15		112		65-144	2.61	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.65	1.8	ng/L	8.55		101		63-143	9.51	30	
Perfluorodecanesulfonic acid (PFDS)	7.63	1.8	ng/L	8.83		86.5		53-142	4.24	30	
Perfluorooctanesulfonamide (FOSA)	9.72	1.8	ng/L	9.15		106		67-137	14.8	30	
Perfluorononanesulfonic acid (PFNS)	9.71	1.8	ng/L	8.78		111		69-127	16.0	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	9.36	1.8	ng/L	9.15		102		50-150	0.171	30	
Perfluoro-1-butanesulfonamide (FBSA)	8.50	1.8	ng/L	9.15		92.9		50-150	8.78	30	
Perfluorohexanesulfonic acid (PFHxS)	8.48	1.8	ng/L	8.37		101		68-131	8.75	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	8.18	1.8	ng/L	9.15		89.4		50-150	8.02	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	8.55	1.8	ng/L	9.15		93.5		50-150	6.82	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B313896 - SOP 454-PFAAS										
LCS Dup (B313896-BSD1)				Prepared: 07/28/22 Analyzed: 08/16/22						
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.97	1.8	ng/L	8.69		115	64-140	19.1	30	
Perfluoropetanesulfonic acid (PFPeS)	8.62	1.8	ng/L	8.60		100	71-127	5.31	30	
Perfluoroundecanoic acid (PFUnA)	10.1	1.8	ng/L	9.15		110	69-133	7.08	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	6.82	1.8	ng/L	9.15		74.6	50-150	8.90	30	
Perfluoroheptanoic acid (PFHpA)	8.59	1.8	ng/L	9.15		93.9	72-130	2.10	30	
Perfluorooctanoic acid (PFOA)	9.30	1.8	ng/L	9.15		102	71-133	6.11	30	
Perfluorooctanesulfonic acid (PFOS)	8.66	1.8	ng/L	8.46		102	65-140	10.3	30	
Perfluorononanoic acid (PFNA)	8.10	1.8	ng/L	9.15		88.5	69-130	11.2	30	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
S-29	Extracted Internal Standard is outside of control limits.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-108 (22G0691-01)			Lab File ID: 22G0691-01.d			Analyzed: 08/16/22 23:27			
M8FOSA	132448	3.988583	243,803.00	3.988567	54	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	131317.9	2.463967	145,198.00	2.472183	90	50 - 150	-0.0082	+/-0.50	
M2PFTA	635265.6	4.329683	950,044.00	4.3378	67	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	115572	3.8028	106,836.00	3.8028	108	50 - 150	0.0000	+/-0.50	
MPFBA	253557.6	1.066783	412,389.00	1.066783	61	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	141462.7	2.806567	140,601.00	2.81475	101	50 - 150	-0.0082	+/-0.50	
M6PFDA	499955.5	3.803317	575,914.00	3.803317	87	50 - 150	0.0000	+/-0.50	
M3PFBS	112348.5	1.8701	121,056.00	1.878383	93	50 - 150	-0.0083	+/-0.50	
M7PFUnA	583873.8	3.94605	785,626.00	3.954033	74	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	71782.07	3.4373	78,284.00	3.445283	92	50 - 150	-0.0080	+/-0.50	
M5PFPeA	324253.9	1.698283	408,471.00	1.706567	79	50 - 150	-0.0083	+/-0.50	
M5PFHxA	647973.4	2.5477	765,075.00	2.555917	85	50 - 150	-0.0082	+/-0.50	
M3PFHxS	95123.84	3.201883	105,186.00	3.201883	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	752897.6	3.170783	889,344.00	3.170783	85	50 - 150	0.0000	+/-0.50	
M8PFOA	639736.4	3.453817	713,304.00	3.453817	90	50 - 150	0.0000	+/-0.50	
M8PFOS	79924.29	3.644167	88,935.00	3.644167	90	50 - 150	0.0000	+/-0.50	
M9PFNA	481720.6	3.6452	507,357.00	3.6452	95	50 - 150	0.0000	+/-0.50	
MPFDoA	640850.5	4.08865	880,954.00	4.08865	73	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	144713.6	3.953517	191,227.00	3.9535	76	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	161304.6	3.88175	196,798.00	3.88175	82	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Field Blank (22G0691-02)			Lab File ID: 22G0691-02.d			Analyzed: 08/16/22 23:34			
M8FOSA	194652.2	3.988583	243,803.00	3.988567	80	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	76967.79	2.472183	145,198.00	2.472183	53	50 - 150	0.0000	+/-0.50	
M2PFTA	694434	4.3297	950,044.00	4.3378	73	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	82318.32	3.802817	106,836.00	3.8028	77	50 - 150	0.0000	+/-0.50	
MPFBA	370119.1	1.066783	412,389.00	1.066783	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	163468.6	2.814767	140,601.00	2.81475	116	50 - 150	0.0000	+/-0.50	
M6PFDA	452950.2	3.803333	575,914.00	3.803317	79	50 - 150	0.0000	+/-0.50	
M3PFBS	105860.5	1.8784	121,056.00	1.878383	87	50 - 150	0.0000	+/-0.50	
M7PFUnA	589248.8	3.94605	785,626.00	3.954033	75	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	44295.77	3.4453	78,284.00	3.445283	57	50 - 150	0.0000	+/-0.50	
M5PFPeA	345280.6	1.706567	408,471.00	1.706567	85	50 - 150	0.0000	+/-0.50	
M5PFHxA	642673.6	2.555917	765,075.00	2.555917	84	50 - 150	0.0000	+/-0.50	
M3PFHxS	88067.68	3.2019	105,186.00	3.201883	84	50 - 150	0.0000	+/-0.50	
M4PFHpA	702050.8	3.170783	889,344.00	3.170783	79	50 - 150	0.0000	+/-0.50	
M8PFOA	588537.1	3.453833	713,304.00	3.453817	83	50 - 150	0.0000	+/-0.50	
M8PFOS	70666.7	3.644183	88,935.00	3.644167	79	50 - 150	0.0000	+/-0.50	
M9PFNA	439167.3	3.645217	507,357.00	3.6452	87	50 - 150	0.0000	+/-0.50	
MPFDoA	619793.8	4.088666	880,954.00	4.08865	70	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	122093.2	3.953517	191,227.00	3.9535	64	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	153466.9	3.881767	196,798.00	3.88175	78	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Eq Blank (22G0691-03)			Lab File ID: 22G0691-03.d			Analyzed: 08/16/22 23:42			
M8FOSA	205245.5	3.988583	243,803.00	3.988567	84	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	104699.7	2.472183	145,198.00	2.472183	72	50 - 150	0.0000	+/-0.50	
M2PFTA	667123.8	4.3297	950,044.00	4.3378	70	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	102528.5	3.8028	106,836.00	3.8028	96	50 - 150	0.0000	+/-0.50	
MPFBA	402736.7	1.066783	412,389.00	1.066783	98	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	124459.7	2.81475	140,601.00	2.81475	89	50 - 150	0.0000	+/-0.50	
M6PFDA	527565.9	3.803333	575,914.00	3.803317	92	50 - 150	0.0000	+/-0.50	
M3PFBS	116688.6	1.878383	121,056.00	1.878383	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	735957.6	3.94605	785,626.00	3.954033	94	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	64564.75	3.4373	78,284.00	3.445283	82	50 - 150	-0.0080	+/-0.50	
M5PFPeA	376683	1.706567	408,471.00	1.706567	92	50 - 150	0.0000	+/-0.50	
M5PFHxA	691445.9	2.555917	765,075.00	2.555917	90	50 - 150	0.0000	+/-0.50	
M3PFHxS	96030.66	3.21025	105,186.00	3.201883	91	50 - 150	0.0084	+/-0.50	
M4PFHpA	790829.6	3.170783	889,344.00	3.170783	89	50 - 150	0.0000	+/-0.50	
M8PFOA	683332.4	3.453817	713,304.00	3.453817	96	50 - 150	0.0000	+/-0.50	
M8PFOS	84211.94	3.644167	88,935.00	3.644167	95	50 - 150	0.0000	+/-0.50	
M9PFNA	464419.5	3.6452	507,357.00	3.6452	92	50 - 150	0.0000	+/-0.50	
MPFDoA	662918.4	4.088666	880,954.00	4.08865	75	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	152707.3	3.953517	191,227.00	3.9535	80	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	175708.4	3.873783	196,798.00	3.88175	89	50 - 150	-0.0080	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-107 (22G0691-04)			Lab File ID: 22G0691-04.d			Analyzed: 08/16/22 23:49			
M8FOSA	100863.9	3.988567	243,803.00	3.988567	41	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	99024.64	2.472183	145,198.00	2.472183	68	50 - 150	0.0000	+/-0.50	
M2PFTA	367918.5	4.329683	950,044.00	4.3378	39	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	97532.22	3.8028	106,836.00	3.8028	91	50 - 150	0.0000	+/-0.50	
MPFBA	285024.9	1.066783	412,389.00	1.066783	69	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	106810.1	2.81475	140,601.00	2.81475	76	50 - 150	0.0000	+/-0.50	
M6PFDA	526468.5	3.803317	575,914.00	3.803317	91	50 - 150	0.0000	+/-0.50	
M3PFBS	114819.8	1.878383	121,056.00	1.878383	95	50 - 150	0.0000	+/-0.50	
M7PFUnA	603124.2	3.946033	785,626.00	3.954033	77	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	54814.93	3.4373	78,284.00	3.445283	70	50 - 150	-0.0080	+/-0.50	
M5PFPeA	360696.7	1.706567	408,471.00	1.706567	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	685667.2	2.555917	765,075.00	2.555917	90	50 - 150	0.0000	+/-0.50	
M3PFHxS	91522.48	3.21025	105,186.00	3.201883	87	50 - 150	0.0084	+/-0.50	
M4PFHpA	798518.9	3.170783	889,344.00	3.170783	90	50 - 150	0.0000	+/-0.50	
M8PFOA	634114.2	3.453817	713,304.00	3.453817	89	50 - 150	0.0000	+/-0.50	
M8PFOS	89449.6	3.644167	88,935.00	3.644167	101	50 - 150	0.0000	+/-0.50	
M9PFNA	476939.9	3.6452	507,357.00	3.6452	94	50 - 150	0.0000	+/-0.50	
MPFDoA	571273.1	4.08865	880,954.00	4.08865	65	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	142433.1	3.9535	191,227.00	3.9535	74	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	170136.3	3.88175	196,798.00	3.88175	86	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-103 (22G0691-05)			Lab File ID: 22G0691-05.d			Analyzed: 08/17/22 00:11			
M8FOSA	36555.03	3.988583	243,803.00	3.988583	15	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	129923.7	2.472183	145,198.00	2.472183	89	50 - 150	0.0000	+/-0.50	
M2PFTA	473833	4.337817	950,044.00	4.337817	50	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	101473.5	3.8028	106,836.00	3.8028	95	50 - 150	0.0000	+/-0.50	
MPFBA	261661.8	1.066783	412,389.00	1.066783	63	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	102089.4	2.81475	140,601.00	2.814767	73	50 - 150	0.0000	+/-0.50	
M6PFDA	457210.5	3.803317	575,914.00	3.803317	79	50 - 150	0.0000	+/-0.50	
M3PFBS	104716.2	1.878383	121,056.00	1.878383	87	50 - 150	0.0000	+/-0.50	
M7PFUnA	551192.5	3.94605	785,626.00	3.954033	70	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	92228.67	3.4373	78,284.00	3.445283	118	50 - 150	-0.0080	+/-0.50	
M5PFPeA	329729.4	1.706567	408,471.00	1.706567	81	50 - 150	0.0000	+/-0.50	
M5PFHxA	620323.2	2.555917	765,075.00	2.555917	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	84501.99	3.201883	105,186.00	3.2019	80	50 - 150	0.0000	+/-0.50	
M4PFHpA	713273.6	3.170783	889,344.00	3.170783	80	50 - 150	0.0000	+/-0.50	
M8PFOA	605321.2	3.453817	713,304.00	3.453817	85	50 - 150	0.0000	+/-0.50	
M8PFOS	71700.75	3.644183	88,935.00	3.644183	81	50 - 150	0.0000	+/-0.50	
M9PFNA	454111.7	3.645217	507,357.00	3.645217	90	50 - 150	0.0000	+/-0.50	
MPFDoA	593709.2	4.088666	880,954.00	4.08865	67	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	148666.5	3.953517	191,227.00	3.953517	78	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	177338.7	3.873783	196,798.00	3.881767	90	50 - 150	-0.0080	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Dup (22G0691-06)			Lab File ID: 22G0691-06.d			Analyzed: 08/17/22 00:18			
M8FOSA	62994.01	3.988567	243,803.00	3.988583	26	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	136043.2	2.472183	145,198.00	2.472183	94	50 - 150	0.0000	+/-0.50	
M2PFTA	138570.2	4.329683	950,044.00	4.337817	15	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	114709.6	3.8028	106,836.00	3.8028	107	50 - 150	0.0000	+/-0.50	
MPFBA	278985.9	1.066783	412,389.00	1.066783	68	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	97340.13	2.81475	140,601.00	2.814767	69	50 - 150	0.0000	+/-0.50	
M6PFDA	464980.5	3.803317	575,914.00	3.803317	81	50 - 150	0.0000	+/-0.50	
M3PFBS	111748.1	1.878383	121,056.00	1.878383	92	50 - 150	0.0000	+/-0.50	
M7PFUnA	622075.1	3.946033	785,626.00	3.954033	79	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	90082.96	3.4373	78,284.00	3.445283	115	50 - 150	-0.0080	+/-0.50	
M5PFPeA	357752.1	1.706567	408,471.00	1.706567	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	682718.7	2.555917	765,075.00	2.555917	89	50 - 150	0.0000	+/-0.50	
M3PFHxS	94633.94	3.201883	105,186.00	3.2019	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	777554.1	3.170783	889,344.00	3.170783	87	50 - 150	0.0000	+/-0.50	
M8PFOA	651914.1	3.453817	713,304.00	3.453817	91	50 - 150	0.0000	+/-0.50	
M8PFOS	78729.02	3.644167	88,935.00	3.644183	89	50 - 150	0.0000	+/-0.50	
M9PFNA	482034.4	3.6452	507,357.00	3.645217	95	50 - 150	0.0000	+/-0.50	
MPFDoA	537201.6	4.08865	880,954.00	4.08865	61	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	160528.2	3.9535	191,227.00	3.953517	84	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	202642	3.88175	196,798.00	3.881767	103	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B313896-BLK1)			Lab File ID: B313896-BLK1.d			Analyzed: 08/16/22 22:37			
M8FOSA	195265.4	3.9886	243,803.00	3.988567	80	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	131614.9	2.472183	145,198.00	2.472183	91	50 - 150	0.0000	+/-0.50	
M2PFTA	802875.6	4.329717	950,044.00	4.3378	85	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	117224.2	3.8028	106,836.00	3.8028	110	50 - 150	0.0000	+/-0.50	
MPFBA	386676.7	1.066783	412,389.00	1.066783	94	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	148248.7	2.81475	140,601.00	2.81475	105	50 - 150	0.0000	+/-0.50	
M6PFDA	574297.7	3.803333	575,914.00	3.803317	100	50 - 150	0.0000	+/-0.50	
M3PFBS	117817.7	1.878383	121,056.00	1.878383	97	50 - 150	0.0000	+/-0.50	
M7PFUnA	709031.7	3.95405	785,626.00	3.954033	90	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	65851.5	3.4453	78,284.00	3.445283	84	50 - 150	0.0000	+/-0.50	
M5PFPeA	388348.5	1.706567	408,471.00	1.706567	95	50 - 150	0.0000	+/-0.50	
M5PFHxA	725941.4	2.555917	765,075.00	2.555917	95	50 - 150	0.0000	+/-0.50	
M3PFHxS	99184.59	3.210267	105,186.00	3.201883	94	50 - 150	0.0084	+/-0.50	
M4PFHpA	835684.4	3.170783	889,344.00	3.170783	94	50 - 150	0.0000	+/-0.50	
M8PFOA	665612.5	3.453833	713,304.00	3.453817	93	50 - 150	0.0000	+/-0.50	
M8PFOS	92172.16	3.644183	88,935.00	3.644167	104	50 - 150	0.0000	+/-0.50	
M9PFNA	524487.5	3.645217	507,357.00	3.6452	103	50 - 150	0.0000	+/-0.50	
MPFDoA	697856.1	4.088683	880,954.00	4.08865	79	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	170233.9	3.953533	191,227.00	3.9535	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	194519	3.881767	196,798.00	3.88175	99	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B313896-BS1)			Lab File ID: B313896-BS1.d			Analyzed: 08/16/22 22:22			
M8FOSA	197560.5	3.988583	243,803.00	3.988567	81	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	125389	2.472183	145,198.00	2.472183	86	50 - 150	0.0000	+/-0.50	
M2PFTA	686002.6	4.3297	950,044.00	4.3378	72	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	108745	3.8028	106,836.00	3.8028	102	50 - 150	0.0000	+/-0.50	
MPFBA	361453.1	1.066783	412,389.00	1.066783	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	119064.9	2.81475	140,601.00	2.81475	85	50 - 150	0.0000	+/-0.50	
M6PFDA	495614.3	3.803333	575,914.00	3.803317	86	50 - 150	0.0000	+/-0.50	
M3PFBS	108898.2	1.878383	121,056.00	1.878383	90	50 - 150	0.0000	+/-0.50	
M7PFUnA	571449.4	3.94605	785,626.00	3.954033	73	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	71821.48	3.445283	78,284.00	3.445283	92	50 - 150	0.0000	+/-0.50	
M5PFPeA	358932	1.706567	408,471.00	1.706567	88	50 - 150	0.0000	+/-0.50	
M5PFHxA	675129.9	2.555917	765,075.00	2.555917	88	50 - 150	0.0000	+/-0.50	
M3PFHxS	88581.51	3.21025	105,186.00	3.201883	84	50 - 150	0.0084	+/-0.50	
M4PFHpA	756164.9	3.170783	889,344.00	3.170783	85	50 - 150	0.0000	+/-0.50	
M8PFOA	636595.4	3.453817	713,304.00	3.453817	89	50 - 150	0.0000	+/-0.50	
M8PFOS	74198.98	3.644183	88,935.00	3.644167	83	50 - 150	0.0000	+/-0.50	
M9PFNA	434066.4	3.645217	507,357.00	3.6452	86	50 - 150	0.0000	+/-0.50	
MPFDoA	615778	4.088666	880,954.00	4.08865	70	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	136886.2	3.953517	191,227.00	3.9535	72	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	178833.3	3.881767	196,798.00	3.88175	91	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B313896-BSD1)			Lab File ID: B313896-BSD1.d			Analyzed: 08/16/22 22:30			
M8FOSA	177798.9	3.988567	243,803.00	3.988567	73	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	115702.1	2.472183	145,198.00	2.472183	80	50 - 150	0.0000	+/-0.50	
M2PFTA	617751.6	4.329683	950,044.00	4.3378	65	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	94154.65	3.8028	106,836.00	3.8028	88	50 - 150	0.0000	+/-0.50	
MPFBA	327675.2	1.066783	412,389.00	1.066783	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	107721	2.81475	140,601.00	2.81475	77	50 - 150	0.0000	+/-0.50	
M6PFDA	455139.6	3.803317	575,914.00	3.803317	79	50 - 150	0.0000	+/-0.50	
M3PFBS	98247.29	1.878383	121,056.00	1.878383	81	50 - 150	0.0000	+/-0.50	
M7PFUnA	521276.3	3.946033	785,626.00	3.954033	66	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	61076.92	3.445283	78,284.00	3.445283	78	50 - 150	0.0000	+/-0.50	
M5PFPeA	328930.9	1.706567	408,471.00	1.706567	81	50 - 150	0.0000	+/-0.50	
M5PFHxA	616843.9	2.555917	765,075.00	2.555917	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	81850.69	3.21025	105,186.00	3.201883	78	50 - 150	0.0084	+/-0.50	
M4PFHpA	713593.1	3.170783	889,344.00	3.170783	80	50 - 150	0.0000	+/-0.50	
M8PFOA	555223.8	3.453817	713,304.00	3.453817	78	50 - 150	0.0000	+/-0.50	
M8PFOS	70716.59	3.644183	88,935.00	3.644167	80	50 - 150	0.0000	+/-0.50	
M9PFNA	440387.6	3.645217	507,357.00	3.6452	87	50 - 150	0.0000	+/-0.50	
MPFDoA	527667.5	4.08865	880,954.00	4.08865	60	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	131047.4	3.953517	191,227.00	3.9535	69	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	144306.2	3.88175	196,798.00	3.88175	73	50 - 150	0.0000	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
11Cl-PF3OUdS (F53B Major)	NH-P
9Cl-PF3ONS (F53B Minor)	NH-P
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2023
FL	Florida Department of Health	E871027 NELAP	06/30/2023
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2023
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
NC-DW	North Carolina Department of Health and Human Services	25703	07/31/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2023
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

22-0691

Pace Analytical
Phone: 413-525-2332
Fax: 413-525-6405
Access COC's and Support Requests

http://www.pacelabs.com

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 5_07/13/2021

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name:	Atlas
Address:	51 Knight Ln, Williston VT
Phone:	
Project Name:	Grafton School
Project Location:	Grafton VT
Project Number:	82QEM00864
Project Manager:	Johanna Palmer
Pace Quote Name/Number:	
Invoice Recipient:	Johanna.Palmer@atlas-inc.com
Sampled By:	KP, EL

Regulatory Turnaround Time
7-Day ☐ 10-Day ☐
PFAS 10-Day (std) ☒ Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: Johanna.Palmer
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Total Metals Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	534-MOD
1	MW-108	7/11/22	1053	GRAB					2			X
2	Field Blank		1130	COMP					1			X
3	EQ Blank		1135	COMP					1			X
4	MW-107		1135	Grab					2			X
5	MW-103		1025	Grab					2			X
6	Dup			Grab					2			X

[2] Preservation Code
Courier Use Only
Total Number Of:
VIALS 0
GLASS 0
PLASTIC 6
BACTERIA 0
ENCORE 0

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time: 7/11/22 1515
Received by: (signature)	Date/Time: 7/12/22 0900
Relinquished by: (signature)	Date/Time: 7/12/22 1350
Received by: (signature)	Date/Time: 7/12/22 1350
Relinquished by: (signature) VDS	Date/Time: 7/13/22
Received by: (signature)	Date/Time: 7/13/22 9:55
Relinquished by: (signature)	Date/Time: 7/13/22 1645
Received by: (signature)	Date/Time: 7/13 1645

Client Comments: PDF + EDD

Detection Limit Requirements
MA
GT 9-55 am
Others

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☒
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

Lab Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine wha analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pac Analytical values your partnership on each project and will try to assist with missing information, but wi not be held accountable.

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39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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Pace PEOPLE ADVANCING SCIENCE

Doc# 277 Rev 6 July 2022

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Atlas

Received By _____ Date 6/13/22 Time 1645

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct From Sample _____ Ambient _____ Melted Ice _____

Were samples within Tempurature? Within 2-6°C T By Gun # 3 Actual Temp 2.0

By Blank # _____ Actual Temp -

Was Custody Seal In tact? N/a Were Samples Tampered with? N/a

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client? T Analysis? T Sampler Name? T

Project? T ID's? T Collection Dates/Times? T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Samples are received within holding time? T Is there enough Volume? T

Is there Headspace where applicable? N/a MS/MSD? F

Proper Media/Containers Used? T splitting samples required F

Were trip blanks receive F On COC? F

Do All Samples Have the proper pH? N/a Acid Base

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	10	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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August 3, 2022

Jo Palmer
ATC Group Services LLC - Vermont
51 Knight Lane, PO Box 1486
Williston, VT 05495

Project Location: Grafton, VT
Client Job Number:
Project Number: 280EM00864
Laboratory Work Order Number: 22G0693

Enclosed are results of analyses for samples as received by the laboratory on July 13, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

REPORT DATE:

PURCHASE ORDER NUMBER:

PROJECT NUMBER:

ANALYTICAL SUMMARY

WORK ORDER NUMBER:

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 537.1

Qualifications:

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Hexafluoropropylene oxide dimer a

22G0693-11[Res-5], 22G0693-13[Res-9], 22G0693-14[Res-9 FB], 22G0693-15[Res-8], 22G0693-17[Res-7], 22G0693-19[Res-1], B313159-BSD1

PF-01

Surrogate recovery is outside of control limits. Sample not re-extracted past holding time per method.

Analyte & Samples(s) Qualified:

13C-PFDA

22G0693-03[Res-4], 22G0693-05[Res-12], 22G0693-06[Res-12 FB]

d5-NEtFOSAA

22G0693-03[Res-4]

M3HFPO-DA

22G0693-03[Res-4]

PF-15

Surrogate recovery is outside of control limits. Unable to re-extract sample due to insufficient sample volume.

Analyte & Samples(s) Qualified:

13C-PFHxA

22G0693-14[Res-9 FB]

d5-NEtFOSAA

22G0693-14[Res-9 FB]

M3HFPO-DA

22G0693-14[Res-9 FB]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-6 | Sampled: 7/8/2022 09:15

Sample ID: 22G0693-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:25	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	103	70-130		8/1/22 11:25
M3HFPO-DA	111	70-130		8/1/22 11:25
13C-PFDA	117	70-130		8/1/22 11:25
d5-NEtFOSAA	112	70-130		8/1/22 11:25

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-4 | Sampled: 7/8/2022 09:30

Sample ID: 22G0693-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorooctanoic acid (PFOA)	2.2	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorooctanesulfonic acid (PFOS)	4.0	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:40	DRL

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	125		70-130		8/1/22 11:40
M3HFPO-DA	**138**	*	70-130	PF-01	8/1/22 11:40
13C-PFDA	**137**	*	70-130	PF-01	8/1/22 11:40
d5-NEtFOSAA	**131**	*	70-130	PF-01	8/1/22 11:40

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-4 FB | Sampled: 7/8/2022 09:25

Sample ID: 22G0693-04

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 11:47	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	110	70-130		8/1/22 11:47
M3HFPO-DA	112	70-130		8/1/22 11:47
13C-PFDA	115	70-130		8/1/22 11:47
d5-NEtFOSAA	107	70-130		8/1/22 11:47

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-12 | Sampled: 7/8/2022 10:00

Sample ID: 22G0693-05

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorooctanesulfonic acid (PFOS)	2.7	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:41	DRL

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	112		70-130		8/1/22 15:41
M3HFPO-DA	130		70-130		8/1/22 15:41
13C-PFDA	**139**	*	70-130	PF-01	8/1/22 15:41
d5-NEtFOSAA	115		70-130		8/1/22 15:41

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-12 FB | Sampled: 7/8/2022 09:58

Sample ID: 22G0693-06

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:48	DRL

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	115		70-130		8/1/22 15:48
M3HFPO-DA	86.8		70-130		8/1/22 15:48
13C-PFDA	**132**	*	70-130	PF-01	8/1/22 15:48
d5-NEtFOSAA	108		70-130		8/1/22 15:48

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-10 | Sampled: 7/8/2022 11:00

Sample ID: 22G0693-07

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/19/22	8/1/22 15:55	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	114	70-130		8/1/22 15:55
M3HFPO-DA	123	70-130		8/1/22 15:55
13C-PFDA	130	70-130		8/1/22 15:55
d5-NEtFOSAA	118	70-130		8/1/22 15:55

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-3 | Sampled: 7/8/2022 12:40

Sample ID: 22G0693-09

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorooctanoic acid (PFOA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorooctanesulfonic acid (PFOS)	3.5	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorononanoic acid (PFNA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorodecanoic acid (PFDA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
N-EtFOSAA	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
N-MeFOSAA	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
11Cl-PF3OUdS (F53B Major)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
9Cl-PF3ONS (F53B Minor)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:09	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	95.7	70-130		8/1/22 16:09
M3HFPO-DA	113	70-130		8/1/22 16:09
13C-PFDA	121	70-130		8/1/22 16:09
d5-NEtFOSAA	103	70-130		8/1/22 16:09

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-3 FB | Sampled: 7/8/2022 12:38

Sample ID: 22G0693-10

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	7/19/22	8/1/22 16:16	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	109	70-130		8/1/22 16:16
M3HFPO-DA	99.4	70-130		8/1/22 16:16
13C-PFDA	111	70-130		8/1/22 16:16
d5-NEtFOSAA	106	70-130		8/1/22 16:16

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-5 | Sampled: 7/8/2022 13:10

Sample ID: 22G0693-11

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 20:16	DRL
11Cl-PF3OUdS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
9Cl-PF3ONS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:16	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	97.9	70-130		7/28/22 20:16
M3HFPO-DA	107	70-130		7/28/22 20:16
13C-PFDA	98.2	70-130		7/28/22 20:16
d5-NEtFOSAA	88.3	70-130		7/28/22 20:16

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-9 | Sampled: 7/8/2022 13:40

Sample ID: 22G0693-13

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorooctanesulfonic acid (PFOS)	2.4	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 20:31	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:31	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	94.0	70-130		7/28/22 20:31
M3HFPO-DA	106	70-130		7/28/22 20:31
13C-PFDA	101	70-130		7/28/22 20:31
d5-NEtFOSAA	96.7	70-130		7/28/22 20:31

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-9 FB | Sampled: 7/8/2022 13:38

Sample ID: 22G0693-14

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorooctanoic acid (PFOA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorononanoic acid (PFNA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorodecanoic acid (PFDA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
N-EtFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
N-MeFOSAA	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 20:45	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:45	DRL

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	**7.21**	*	70-130	PF-15	7/28/22 20:45
M3HFPO-DA	**9.01**	*	70-130	PF-15	7/28/22 20:45
13C-PFDA	71.9		70-130		7/28/22 20:45
d5-NEtFOSAA	**27.8**	*	70-130	PF-15	7/28/22 20:45

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-8 | Sampled: 7/8/2022 14:10

Sample ID: 22G0693-15

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorooctanoic acid (PFOA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorononanoic acid (PFNA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorodecanoic acid (PFDA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
N-EtFOSAA	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
N-MeFOSAA	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.2		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 20:52	DRL
11Cl-PF3OUdS (F53B Major)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
9Cl-PF3ONS (F53B Minor)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.2		ng/L	1		EPA 537.1	7/20/22	7/28/22 20:52	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	101	70-130		7/28/22 20:52
M3HFPO-DA	116	70-130		7/28/22 20:52
13C-PFDA	112	70-130		7/28/22 20:52
d5-NEtFOSAA	101	70-130		7/28/22 20:52

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-7 | Sampled: 7/8/2022 14:30

Sample ID: 22G0693-17

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorononanoic acid (PFNA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
N-EtFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
N-MeFOSAA	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 21:06	DRL
11Cl-PF3OUdS (F53B Major)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
9Cl-PF3ONS (F53B Minor)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:06	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	98.3	70-130		7/28/22 21:06
M3HFPO-DA	112	70-130		7/28/22 21:06
13C-PFDA	105	70-130		7/28/22 21:06
d5-NEtFOSAA	99.5	70-130		7/28/22 21:06

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Project Location: Grafton, VT | Sample Description: | Work Order: 22G0693

Date Received: 7/13/2022

Field Sample #: Res-1 | Sampled: 7/8/2022 15:00

Sample ID: 22G0693-19

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1	L-03	EPA 537.1	7/20/22	7/28/22 21:20	DRL
11Cl-PF3OUdS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
9Cl-PF3ONS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	7/20/22	7/28/22 21:20	DRL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	96.0	70-130		7/28/22 21:20
M3HFPO-DA	103	70-130		7/28/22 21:20
13C-PFDA	101	70-130		7/28/22 21:20
d5-NEtFOSAA	98.2	70-130		7/28/22 21:20

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B313117 - EPA 537.1										
Blank (B313117-BLK1)				Prepared: 07/19/22 Analyzed: 08/01/22						
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	*47.4*		ng/L	38.6		123	70-130			
Surrogate: M3HFPO-DA	*48.2*		ng/L	38.6		125	70-130			
Surrogate: 13C-PFDA	*48.7*		ng/L	38.6		126	70-130			
Surrogate: d5-NEtFOSAA	*196*		ng/L	154		127	70-130			
LCS (B313117-BS1)				Prepared: 07/19/22 Analyzed: 08/01/22						
Perfluorobutanesulfonic acid (PFBS)	9.54	1.9	ng/L	8.61		111	70-130			
Perfluorohexanoic acid (PFHxA)	10.3	1.9	ng/L	9.70		107	70-130			
Perfluorohexanesulfonic acid (PFHxS)	10.3	1.9	ng/L	8.87		116	70-130			
Perfluoroheptanoic acid (PFHpA)	10.8	1.9	ng/L	9.70		111	70-130			
Perfluorooctanoic acid (PFOA)	9.09	1.9	ng/L	9.70		93.7	70-130			
Perfluorooctanesulfonic acid (PFOS)	10.3	1.9	ng/L	9.00		115	70-130			
Perfluorononanoic acid (PFNA)	11.6	1.9	ng/L	9.70		120	70-130			
Perfluorodecanoic acid (PFDA)	11.5	1.9	ng/L	9.70		118	70-130			
N-EtFOSAA	8.97	1.9	ng/L	9.70		92.5	70-130			
Perfluoroundecanoic acid (PFUnA)	11.0	1.9	ng/L	9.70		113	70-130			
N-MeFOSAA	8.72	1.9	ng/L	9.70		89.9	70-130			
Perfluorododecanoic acid (PFDoA)	10.4	1.9	ng/L	9.70		107	70-130			
Perfluorotridecanoic acid (PFTrDA)	10.1	1.9	ng/L	9.70		104	70-130			
Perfluorotetradecanoic acid (PFTA)	10.0	1.9	ng/L	9.70		103	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.83	1.9	ng/L	9.70		70.4	70-130			
11Cl-PF3OUdS (F53B Major)	10.5	1.9	ng/L	9.15		115	70-130			
9Cl-PF3ONS (F53B Minor)	10.7	1.9	ng/L	9.05		118	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.27	1.9	ng/L	9.17		101	70-130			
Surrogate: 13C-PFHxA	*34.2*		ng/L	38.8		88.1	70-130			
Surrogate: M3HFPO-DA	*33.5*		ng/L	38.8		86.3	70-130			
Surrogate: 13C-PFDA	*37.2*		ng/L	38.8		95.8	70-130			
Surrogate: d5-NEtFOSAA	*145*		ng/L	155		93.4	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B313117 - EPA 537.1										
LCS Dup (B313117-BSD1)				Prepared: 07/19/22 Analyzed: 08/01/22						
Perfluorobutanesulfonic acid (PFBS)	9.41	2.0	ng/L	8.86		106	70-130	1.43	30	
Perfluorohexanoic acid (PFHxA)	11.1	2.0	ng/L	9.99		111	70-130	6.91	30	
Perfluorohexanesulfonic acid (PFHxS)	10.5	2.0	ng/L	9.13		116	70-130	2.86	30	
Perfluoroheptanoic acid (PFHpA)	11.3	2.0	ng/L	9.99		113	70-130	4.29	30	
Perfluorooctanoic acid (PFOA)	9.72	2.0	ng/L	9.99		97.3	70-130	6.67	30	
Perfluorooctanesulfonic acid (PFOS)	10.7	2.0	ng/L	9.27		116	70-130	4.00	30	
Perfluorononanoic acid (PFNA)	11.9	2.0	ng/L	9.99		119	70-130	2.16	30	
Perfluorodecanoic acid (PFDA)	11.6	2.0	ng/L	9.99		116	70-130	0.874	30	
N-EtFOSAA	9.14	2.0	ng/L	9.99		91.5	70-130	1.89	30	
Perfluoroundecanoic acid (PFUnA)	11.3	2.0	ng/L	9.99		113	70-130	2.87	30	
N-MeFOSAA	9.62	2.0	ng/L	9.99		96.3	70-130	9.84	30	
Perfluorododecanoic acid (PFDoA)	10.6	2.0	ng/L	9.99		106	70-130	1.96	30	
Perfluorotridecanoic acid (PFTrDA)	10.5	2.0	ng/L	9.99		105	70-130	4.08	30	
Perfluorotetradecanoic acid (PFTA)	10.2	2.0	ng/L	9.99		102	70-130	2.01	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.34	2.0	ng/L	9.99		73.5	70-130	7.17	30	
11Cl-PF3OUdS (F53B Major)	9.55	2.0	ng/L	9.42		101	70-130	9.69	30	
9Cl-PF3ONS (F53B Minor)	10.7	2.0	ng/L	9.32		115	70-130	0.0111	30	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	10.1	2.0	ng/L	9.44		107	70-130	8.60	30	
Surrogate: 13C-PFHxA	*39.8*		ng/L	39.9		99.7	70-130			
Surrogate: M3HFPO-DA	*40.2*		ng/L	39.9		101	70-130			
Surrogate: 13C-PFDA	*41.4*		ng/L	39.9		104	70-130			
Surrogate: d5-NEtFOSAA	*161*		ng/L	160		100	70-130			
Batch B313159 - EPA 537.1										
Blank (B313159-BLK1)				Prepared: 07/20/22 Analyzed: 07/28/22						
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Surrogate: 13C-PFHxA	*35.9*		ng/L	38.0		94.6	70-130			
Surrogate: M3HFPO-DA	*37.9*		ng/L	38.0		99.9	70-130			
Surrogate: 13C-PFDA	*34.2*		ng/L	38.0		90.1	70-130			
Surrogate: d5-NEtFOSAA	*146*		ng/L	152		96.0	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B313159 - EPA 537.1											
LCS (B313159-BS1)				Prepared: 07/20/22 Analyzed: 07/28/22							
Perfluorobutanesulfonic acid (PFBS)	1.21	1.9	ng/L	1.67		72.7		50-150			
Perfluorohexanoic acid (PFHxA)	1.46	1.9	ng/L	1.88		77.5		50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.28	1.9	ng/L	1.72		74.5		50-150			
Perfluoroheptanoic acid (PFHpA)	1.41	1.9	ng/L	1.88		74.8		50-150			
Perfluorooctanoic acid (PFOA)	1.20	1.9	ng/L	1.88		63.7		50-150			
Perfluorooctanesulfonic acid (PFOS)	1.26	1.9	ng/L	1.74		72.5		50-150			
Perfluorononanoic acid (PFNA)	1.22	1.9	ng/L	1.88		65.1		50-150			
Perfluorodecanoic acid (PFDA)	1.23	1.9	ng/L	1.88		65.6		50-150			
N-EtFOSAA	1.40	1.9	ng/L	1.88		74.3		50-150			
Perfluoroundecanoic acid (PFUnA)	1.41	1.9	ng/L	1.88		75.0		50-150			
N-MeFOSAA	1.34	1.9	ng/L	1.88		71.3		50-150			
Perfluorododecanoic acid (PFDoA)	1.09	1.9	ng/L	1.88		58.0		50-150			
Perfluorotridecanoic acid (PFTrDA)	1.23	1.9	ng/L	1.88		65.5		50-150			
Perfluorotetradecanoic acid (PFTA)	1.44	1.9	ng/L	1.88		76.8		50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.22	1.9	ng/L	1.88		64.8		50-150			
11Cl-PF3OUdS (F53B Major)	1.03	1.9	ng/L	1.77		57.8		50-150			
9Cl-PF3ONS (F53B Minor)	1.13	1.9	ng/L	1.75		64.2		50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.13	1.9	ng/L	1.78		63.3		50-150			
Surrogate: 13C-PFHxA	*27.1*		ng/L	37.6		72.2		70-130			
Surrogate: M3HFPO-DA	*27.7*		ng/L	37.6		73.6		70-130			
Surrogate: 13C-PFDA	*28.4*		ng/L	37.6		75.4		70-130			
Surrogate: d5-NEtFOSAA	*118*		ng/L	150		78.7		70-130			
LCS Dup (B313159-BSD1)				Prepared: 07/20/22 Analyzed: 07/28/22							
Perfluorobutanesulfonic acid (PFBS)	1.20	1.9	ng/L	1.66		72.1		50-150	1.08	50	
Perfluorohexanoic acid (PFHxA)	1.27	1.9	ng/L	1.87		68.0		50-150	13.4	50	
Perfluorohexanesulfonic acid (PFHxS)	1.24	1.9	ng/L	1.71		72.1		50-150	3.53	50	
Perfluoroheptanoic acid (PFHpA)	1.29	1.9	ng/L	1.87		68.6		50-150	8.97	50	
Perfluorooctanoic acid (PFOA)	1.48	1.9	ng/L	1.87		79.1		50-150	21.3	50	
Perfluorooctanesulfonic acid (PFOS)	1.38	1.9	ng/L	1.74		79.2		50-150	8.63	50	
Perfluorononanoic acid (PFNA)	1.34	1.9	ng/L	1.87		71.6		50-150	9.23	50	
Perfluorodecanoic acid (PFDA)	1.26	1.9	ng/L	1.87		67.2		50-150	2.09	50	
N-EtFOSAA	1.39	1.9	ng/L	1.87		73.9		50-150	0.831	50	
Perfluoroundecanoic acid (PFUnA)	1.40	1.9	ng/L	1.87		74.6		50-150	0.873	50	
N-MeFOSAA	1.72	1.9	ng/L	1.87		91.8		50-150	24.9	50	
Perfluorododecanoic acid (PFDoA)	1.21	1.9	ng/L	1.87		64.3		50-150	10.0	50	
Perfluorotridecanoic acid (PFTrDA)	1.34	1.9	ng/L	1.87		71.5		50-150	8.51	50	
Perfluorotetradecanoic acid (PFTA)	1.40	1.9	ng/L	1.87		74.8		50-150	3.00	50	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.898	1.9	ng/L	1.87		**47.9**	*	50-150	30.3	50	L-03
11Cl-PF3OUdS (F53B Major)	1.27	1.9	ng/L	1.77		71.9		50-150	21.4	50	
9Cl-PF3ONS (F53B Minor)	1.13	1.9	ng/L	1.75		64.7		50-150	0.493	50	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1.16	1.9	ng/L	1.77		65.7		50-150	3.31	50	
Surrogate: 13C-PFHxA	*30.4*		ng/L	37.5		81.1		70-130			
Surrogate: M3HFPO-DA	*30.7*		ng/L	37.5		81.8		70-130			
Surrogate: 13C-PFDA	*33.8*		ng/L	37.5		90.2		70-130			
Surrogate: d5-NEtFOSAA	*145*		ng/L	150		96.6		70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
PF-01	Surrogate recovery is outside of control limits. Sample not re-extracted past holding time per method.
PF-15	Surrogate recovery is outside of control limits. Unable to re-extract sample due to insufficient sample volume.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 537.1 in Drinking Water	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,PA,MI,MA,NY,NH
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
11Cl-PF3OUdS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
9Cl-PF3ONS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA,MI,MA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2023
FL	Florida Department of Health	E871027 NELAP	06/30/2023
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2023
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
NC-DW	North Carolina Department of Health and Human Services	25703	07/31/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2023
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

22-60693

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page 1 of 2

Company Name:	Atlas
Address:	51 Knight Lane
Phone:	802 869 1980
Project Name:	Grafton School
Project Location:	Grafton VT
Project Number:	280 EM008L4
Project Manager:	Jo Palmer
Pace Quote Name/Number:	
Invoice Recipient:	Jo Palmer
Sampled By:	Jo Palmer

Requested Turnaround Time
7-Day ☐ 10-Day ☐
PFAS 10-Day (std) ☐ Due Date:

Rush - Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Deliverables
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: johanna.palmer@atlasgrafton.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	537.1
1	Res-6	7/8/22	0915	G	DW	L			2			X
2	Res-6 FB		0910		FB				1			X
3	Res-4		0930		DW				2			X
4	Res-4 FB		0925		FB				1			X
5	Res-12		1000		DW				2			X
6	Res-12 FB		0958		FB				1			X
7	Res-10		1100		DW				2			X
8	Res-10 FB		1058		FB				1			X
9	Res-3		1240		DW				2			X
10	Res-3 FB		1238		FB				1			X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y (N)
Glassware in freezer? Y (N)
Prepackaged Cooler? (Y) / N

*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)		Date/Time: 7/12/22 1330
Received by: (signature)		Date/Time: 7/12/22 1330
Relinquished by: (signature)	VDS	Date/Time: 7-13-22
Received by: (signature)		Date/Time: 7/13/22 9:55
Relinquished by: (signature)		Date/Time: 7/13/22 1641
Received by: (signature)		Date/Time: 7/13/22 1645
Relinquished by: (signature)		Date/Time:
Received by: (signature)		Date/Time:

Client Comments: Extract + hold all FB's

Detection Limit Requirements
MA 9:55 am
GW1

Special Requirements
☐ MA MCP Required
☐ MCP Certification Form Required
☐ CT RCP Required
☐ RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Other:

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☒
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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Pace Analytical®

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www.pacelabs.com
39 Spruce Street
East Longmeadow, MA 01028

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2260693

CHAIN OF CUSTODY RECORD (AIR)

ANALYSIS REQUESTED

Report To: Atlas
Address: 51 Knight Lane
Phone:
Project Information
Project Location: see pg 1
Project Number:
Project Manager:
Pace Quote Name/Number:
Invoice Recipient:
Sampled By:

Turnaround Time Requested
7-Day ☐ 10-Day ☐
Due Date:

Rush (Surcharges Apply)
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To:
Fax To #:

Hold canisters (Castle) 1.755

" Hg

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume										
Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	m³/min L/min	Code	Liters m³									Summa Can ID	Flow Controller ID
11	Res-5	7/8/22	1310			DW	2	X									
12	Res-5 FB		1308			FB	1	X									
13	Res-9		1340			DW	2	X									
14	Res-9 FB		1338			FB	1	X									
15	Res-8		1410			DW	2	X									
16	Res-8FB		1408			FB	1	X									
17	Res-7		1430			DW	2	X									
18	Res-7FB		1428			FB	1	X									
19	Res-1		1500			DW	2	X									
20	Res-1FB		1450			FB	1	X									

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Comments:
extract + hold FB's

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:
SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other
DW - drinking water
FB - Field Blank

	Date/Time:
Relinquished by: (signature)	7/12/22 1330
Received by: (signature)	7/12/22 1330
Relinquished by: (signature) VDS	7/13/22
Received by: (signature)	7/13/22 9:55
Relinquished by: (signature)	7/13/22 1645
Received by: (signature)	7/13 1645

Laboratory Comments
PM
PC 9:55 am
CR
Other

Special Requirements:
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

Pace Analytical®
NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☒ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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Pace PEOPLE ADVANCING SCIENCE

Doc# 277 Rev 6 July 2022

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Atlas
Received By _____ Date 7/13/22 Time 1645

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct From Sample _____ Ambient _____ Melted Ice _____
Were samples within Tempurature? Within 2-6°C T By Gun # 3 Actual Temp 2.0 By Blank # _____ Actual Temp -
Was Custody Seal In tact? N/a Were Samples Tampered with? N
Was COC Relinquished ? T Does Chain Agree With Samples? T
Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client? T Analysis? T Sampler Name? T
Project? T ID's? T Collection Dates/Times? T
Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? F Who was notified? _____
Samples are received within holding time? T Is there enough Volume? T
Is there Headspace where applicable? N/a MS/MSD? _____
Proper Media/Containers Used? T splitting samples require F
Were trip blanks receive F On COC? F
Do All Samples Have the proper pH? N/a Acid Base

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	30	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments: