FINAL
TOWN OF DOVER HYDROLOGY STUDY
DOVER, MASSACHUSETTS
KLEINFELDER PROJECT # 20192428.001A

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A Report Prepared for:

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DOVER, MASSACHUSETTS

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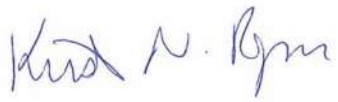

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ABBREVIATIONS:

ADD	Average Daily Demand
ASR	Annual Statistical Report
AUL	Activity and Use Limitation
C21E	Site subject to MGL Ch21§E
DMP	Drought Management Plan
DOW	Depth of Water
DTW	Depth to Water
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
GHCN	Global Historical Climatology Network
GPD	Gallons per Day
MassDEP	Massachusetts Department of Environmental Protection
MG	Millions of Gallons
MW	Monitoring Well
NCDC	National Climate Data Center
NOAA	National Oceanic and Atmospheric Administration
PCPP	Personal Care Products and Pharmaceuticals
PFAS	Per and polyfluoroakyl substances
PWS	Public Water System
PZ	Piezometer
RFI	Request for Information
RGPCD	Residential Gallons per Capita Day
SG	Stream Gauge
SOC	Synthetic Organic Compound
TOC	Top of Casing
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WMA	Massachusetts Water Management Act

0 EXECUTIVE SUMMARY

Overview & Study Purpose:

Two-thirds of the Town of Dover's residents obtain their domestic water supply from private wells. A small percentage of residents are served by the Natick and Walpole municipal systems. The remainder of residents are primarily served by privately owned public water suppliers operating supply wells installed in the sand and gravel aquifers within the Town of Dover. These gravel aquifers, depicted on Plate 1, are typically shallow and limited in area and capacity. The Dover Board of Health (BOH) is the local regulatory authority for new private wells in Dover. Over the past several years, the Board has seen an increase in reported problems with private wells. MassDEP records indicate that between 2007 and 2017 in Dover, 134 wells have either been decommissioned, drilled deeper, or hydrofractured to increase yield. During 2015, the Dover Board of Selectmen established a Water Resources Study Committee (WRSC, or Committee) to address water resources concerns, which was transferred to Dover Board of Health responsibility in 2017, and in 2018, the Town authorized funding for this hydrology study.

The purpose of this study was to identify and map water resources throughout the Town and develop a monitoring network consisting of monitoring wells, piezometers and stream gauges. Data gathered from the network over time will record and establish baseline levels and seasonal trends. This study and ongoing monitoring efforts will help provide information for decision makers to make long term plans and mitigate risks. The monitoring network installed in this first year of the project is shown on Plate 3 and included: 14 groundwater monitoring wells for measuring water table elevation and water quality, six stream-bed piezometers for measuring the interaction between groundwater and streams, and five gauges to measure stream flow. These, along with the two United States Geological Survey (USGS) stream gauges and monitoring well stations, were used to establish baseline trends over the course of the 278-day study between February 20th, 2019 and November 25th, 2019. Water supplier information including permits, infrastructure, and monthly pumping records, was also compiled and reviewed to establish patterns of water use.

This project accomplished the establishment of a baseline monitoring network to provide widespread geographic coverage of the Town in relation to areas of potential concern for

evaluation of water resources. The network should be maintained so that as data is accumulated, seasonal and annual patterns will begin to emerge to help facilitate the clearer identification of trends to guide decision making.

Summary of Key Findings:

Groundwater and Streamflow: General seasonal trends were reflected in most of the monitoring wells, showing an increase in the water table during the cooler months and a decrease following summer months, particularly during September and October. This is consistent with regional trends in temperature and precipitation. Stream gauges also followed these general trends with higher water levels in the cooler months and lower levels in the warmer months. Several monitoring wells had relatively larger seasonal drawdowns which could potentially be related to the pumping of nearby public and / or private supply wells.

Groundwater Quality: Monitoring wells were tested for nitrate, manganese, volatile organic compounds (VOCs), sodium and chloride. In general, water quality across all monitoring wells was fair. All the wells had low pH but none that were atypical of wells seen in the region. Low pH levels observed can potentially corrode piping or plumbing fixtures and public water systems are required to implement corrosion control measures at the levels observed. All the monitoring wells had elevated levels of manganese, which is naturally occurring and typical of the region. Both pH and manganese levels are mostly influenced by the local geologic/overburden material and hydrogeologic conditions. Groundwater nitrate indicative of septic system influence (over 1 mg/L, but below the federal and state drinking water standard of 10 mg/L) was observed in seven monitoring wells; generally, those in more densely developed areas. One monitoring well had nitrate in excess of the Dover Board of Health Well Regulation limit of 5 mg/L. Many of the wells also had elevated levels of sodium and chlorides indicating that road de-icing salt is influencing the water quality.

Water Use Records: Evaluation of the local public water systems (PWS) records provided evidence of highest usage in the warmer months with peaks in July through September, during the time of year that groundwater levels are often lowest. This indicates excessive household seasonal non-essential outdoor water use. Data for all public water supplier community wells in Dover show that residential usage consistently exceeds Massachusetts Conservation standard of 65 residential gallons per capita per day (RGPCD), in some cases by more than double. In addition, the largest supplier in Dover has exceeded its withdrawal allocation permitted by the state in 7 of the past 9 years for which data were reviewed. Groundwater recharge areas

(designated by MassDEP as 'Zone II's), which are protected from certain incompatible land uses, are established based on approved pumping rates listed in PWS Water Management Act withdrawal permits. Pumping that significantly exceeds those permit limits has the potential to negatively impact water availability in Dover aquifers, and to mobilize contamination sources, particularly during droughts such as the severe drought of 2016.

Water Use Management: Strategies for preventing negative impacts of excessive groundwater use can include enforcement of existing regulations and restrictions, establishing new regulations, and promoting good water stewardship through education (although this too is mandated). The largest community water system in Dover is authorized to withdraw water by a Massachusetts Water Management Act (WMA) Permit which includes several conditions which are imposed in order to protect aquifers, rivers and streams. The Permit has limitations on annual pumping (as a daily average), individual well pumping rates, residential usage, allowable water loss (unaccounted for water), and seasonal water use. Based on recent water usage records and conditions in the WMA Permit, the system should be implementing a conservation program, imposing seasonal or streamflow-based restrictions, and implementing a volumetric offsets plan.

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) recently published an updated Massachusetts Drought Management Plan (the DMP)[1]. The DMP encourages local authorities to engage in proactive drought management planning, beginning with the adoption of an Outdoor Water Use Bylaw. The Dover Board of Health is reviewing the EEA Model Outdoor Water Use Bylaw and evaluating the potential benefits.

Recommendations:

The following recommended next steps are presented for consideration by the Town of Dover:

1. **Continue monitoring network data collection**: Dover has now invested in a sophisticated monitoring network that is capable of further establishing long term trends of the Town's water resources. The network will need to be maintained in order to continue collection of reliable data. Recommended activities include:
    - Beginning in early Spring 2020, continue routine data collection from each of the water level transducers deployed, as well collecting manual readings at piezometers and

[1] *https://www.mass.gov/doc/massachusetts-drought-management-plan/download*

stream gauges. Retrieve logger from MW-6 at Centre Street and redeploy in an alternative location. Compile the data into a Monitoring Report annually. Batteries in the transducers may need to be replaced in about 4 years (January of 2024).

2. **Comparison Study with 2019 Public Water Supplier Annual Statistical Reports (ASR)** – The 2019 ASRs will be published by MassDEP in mid to late 2020. Once published, the reports should be compared with the transducer trends to continue to refine the seasonal and annual trends for each PWS.
3. **Correlation of Daily or Monthly Pumping Records** – In order to further investigate if any PWS wells are significantly influencing water table elevations, pumping logs should be compared with the local monitoring wells to see if any apparent trends exist.
4. **Supplement Monitoring Network Data Gaps:** Supplement monitoring with additional monitoring well installation and water quality testing as follows:
    - Installation of an overburden (and / or possibly a bedrock well) at an alternate location near Town center to replace MW-6.
    - Water quality testing near high density or large community septic systems, either via existing wells, if available for testing, or installation of new monitoring wells.
    - Inclusion of testing of monitoring well network for PFAS.
5. **Explore Partnership with USGS** – As the USGS has a presence in Town with its monitoring gauges, there is potential opportunity to collaborate with researchers to evaluate water resources in the Dover area. It would be beneficial and cost-saving if USGS would allow Dover to install a monitoring transducer and test the water quality in the USGS well.
6. **Explore Implementation of Outdoor Water Use Bylaw, and other strategies for drought management:** With the high rates of summer water use and the high levels of residential per capita use, the Town should consider:
    - Adopting water use regulations.
    - Assisting Public Water Suppliers with implementing Water Conservation Programs required by their WMA Permits.
    - Implementing an enhanced educational outreach or social marketing campaign for residents and businesses.
    - Ensuring that Town facilities are using high efficiency plumbing fixtures and water-smart appliances.

1 INTRODUCTION

1.1 OVERVIEW AND PURPOSE

The Town of Dover has approximately 6,300 residents, approximately two-thirds of whom obtain their domestic water supply from private wells. The remainder of residents are primarily served by public water suppliers operating supply wells installed in sand and gravel aquifers within the Town of Dover. Public water suppliers are regulated by MassDEP. A small percentage of residents are served by the Natick and Walpole municipal systems. The Dover Board of Health (BOH) is the local regulatory authority for private wells in Dover. Over the past several years, the Board has seen an increase in reported problems with private wells, including during 2018 at least 10 wells going dry, and four wells needing to be deepened or hydrofractured to sustain yield. In addition, concerns about streams and wetlands drying out were raised, with reports of some perennial streams becoming intermittent.

Concurrently, the Board had also noted instances of public water suppliers (PWS) reporting usage exceeding state conservation standards and permitted withdrawal limits. During 2015, the Dover Board of Health established a Water Resources Study Committee (WRSC, or Committee) to address water resources concerns. The Committee was transferred to Dover Board of Selectmen responsibility in 2017. In 2018, the Town authorized funding for the Committee to hire a consultant to conduct a hydrology study.

In November of 2018, the Town of Dover retained Kleinfelder to develop a groundwater and stream monitoring network and to conduct a study of the groundwater resources in relation to the availability of water resources, the risks of contamination, and the potential impacts of climate change. The purpose of this study is to identify and map water resources throughout the Town and develop a monitoring network consisting of monitoring wells, piezometers and stream gauges. Data gathered from the network over time will record and establish baseline levels and seasonal trends. This study and ongoing monitoring efforts will help provide information for decision makers to make long term plans and mitigate risks.

1.2 PROJECT SCOPE

This project consisted of the following tasks:

Task 1: Research and Data Review; Monitoring Network Design

- Research and compilation of available data including sources listed in the Request for Proposal Request for Information (RFI), past projects, publicly available records, and interviews;
- Preliminary design of a monitoring well network with proposed well locations for discussion with the WRSC; and
- Final monitoring network design.

Task 2: GIS Layer Development

- Preparation of a proposed Dover Water GIS schema for discussion with the Committee.
- Development of a Dover Water GIS layer to include public water supply wells, piping, and private wells (from data publicly available and/or provided by the Town) and incorporating the monitoring network points from Tasks 3 and 4).

Task 3: Installation of Monitoring Wells

- Subcontract with a Massachusetts-licensed well driller to install monitoring wells at up to 20 locations.
- Installation of monitoring wells; and
- Installation of up to six stream-side or streambed piezometers.

Task 4: Monitor and Test Groundwater

- Purchase and installation water level data loggers;
- Collection of water quality samples from monitoring wells;
- Six field visits and associated data collection.

Task 5: Reports and Presentation

- Draft Report and Final Report
- One presentation of results at a Public Meeting

This report documents the results of the project tasks and is organized as follows:

Section 2 – Study Area Description
Section 3 – GIS Mapping
Section 4 – Field Monitoring Network
Section 5 – Water Level Monitoring Results
Section 6 – Groundwater Quality Results
Section 7 – Summary of Findings and Recommendations

2 STUDY AREA DESCRIPTION

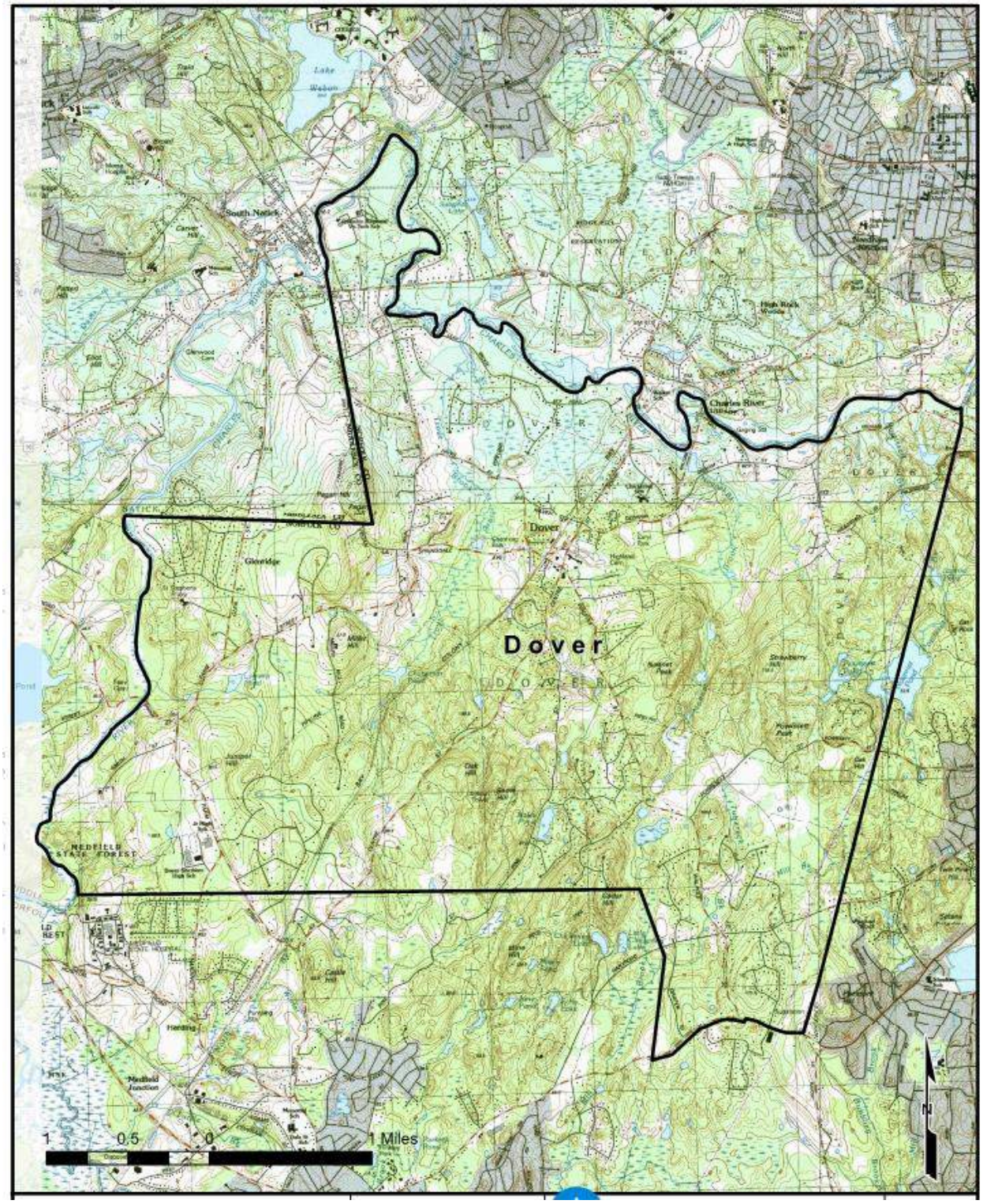
2.1 STUDY AREA AND WATER RESOURCES

Dover, Massachusetts, is a town in Norfolk County, Massachusetts with a population of about 6,300 residents and 2,144 households. The Town is composed of mostly rural residential areas with wooded lots and grazing land. The Town center consists of a small commercial district. There are also several large tracts of protected open space held by various owners including municipal, state, land trusts, and private owners. Dover is bordered by the Towns of Needham, Natick, Sherborn, Westwood, Medfield, and Walpole (see **Figure 2-1**).

The Town lies mostly within the Charles River Basin, with the Charles River forming the southwest and northern boundaries of the Town. Several smaller tributaries of the Charles River are located within the study area, with the largest being Trout Brook and Noanet Brook. The southeastern corner of the Town lies within the Boston Harbor Basin. The surficial geology of Dover is depicted on **Plate 1**. The study area is characterized by extensive glacial deposits of low permeable till which typically are thicker deposits in areas of elevated topography. The narrow stream valleys contain stratified glacial deposits, typically consisting of gravel and fine to coarse sands overlain in places with wetland peat deposits. The floodplain of the Charles River contains deposits of floodplain alluvium.

Most public supply community wells are installed in the relatively shallow (on the order of ~50 feet deep or less) valley and/or floodplain deposits which are transmissive enough to sustain required yields. Some wells installed in the floodplain deposits adjacent to the Charles River can be significantly deeper. The majority of private domestic wells are installed in bedrock. Locations of public and private wells are shown on **Plate 2**. Plate 2 also depicts the 'Zone II' area for each public water supply well, which is defined in the Massachusetts drinking water regulations (310 CMR 22) as the area of the aquifer which contributes water to the public water supply well under 180 days of pumping at its approved yield with no recharge from precipitation.

Figure 2-1: Town of Dover



2.2 ENVIRONMENTAL RESOURCES AND POTENTIAL POLLUTION SOURCES

Water resources are shown on **Plate 2**, along with environmental resources (open space, wetlands, priority species habitat, vernal pools) and potential environmental contamination sources such as landfills, pollution release sites (AUL or C21E sites), groundwater discharge permits and underground storage tanks. There are significant areas of protected open space owned by The Trustees (formerly The Trustees of Reservations), Dover Land Conservation Trust, and others. There are relatively few mapped environmental hazards, however, there have been past significant releases of fuel from the Mobil station in the center of Town, which contaminated the Town's Church Street Well.

Dover is comprised of a small town center surrounded by rural residential areas with wooded lots and grazing land. Contaminant threats are generally defined as facilities with associated uses that have the potential to be a source of contamination to the environment, and more specifically water resources. Facilities of concern may store or handle hazardous chemicals, discharge from point or non-point sources, or apply chemicals or fertilizers to land such as in agricultural applications. MassDEP catalogs most of these potential sources in a GIS database available through Mass Oliver. **Plate 2** depicts the major contaminant threats located throughout the Town. Some of the major potential contaminants of concern are:

- Nitrates;
- Petrochemicals or volatile organic compounds (VOCs);
- Herbicides and pesticides or synthetic organic compounds (SOCs);
- Personal Care Products and Pharmaceuticals (PCPP)
- Per-and Polyfluoroalkyl Substances (PFAS); and
- Chlorides

Town Center - The commercial district features several local businesses and town facilities that attract higher levels of traffic and handle hazardous materials such as fuels and other petroleum products. The Town center includes a gas station, automotive shop, fire department and other town facilities, schools, restaurants, and a grocery store. The most notable concern is the gas station located at the intersection of Centre Street and Walpole Street. The station contains underground storage tanks to hold fuel. In some cases, as tanks age they can rupture or corrode allowing fuel to slowly leach into the groundwater. The MassDEP database on Waste Sites and Reportable Releases lists 47 incidents of reportable releases of oil or hazardous materials in Dover. This list is included in Appendix A.

Septic Systems - Because of the rural layout of Dover, the Town does not have a centralized sewage disposal and treatment system. Residences therefore operate and maintain their own septic tanks and leach fields for onsite sewage disposal. Septic system discharge can be a source of nitrates, and personal care products and pharmaceuticals (PCPPs) that when discharged can lead to a degradation of groundwater quality.

PCPPs is a broad category of chemicals that include many personal care products that contain many chemicals including Per-and Polyfluoroalkyl Substances (PFAS). PFAS have come under recent scrutiny because they are found to be widespread, persistent in the environment, and with the ability to bioaccumulate in humans. Current toxicology research suggests that bioaccumulation of certain PFAS congeners may cause negative health effects. The chemicals are man-made and are widely used in industrial applications such as firefighting foams, as well as everyday products such as in non-stick coatings like Teflon, and personal care products and makeup. The most concentrated sources are typically associated with chemical manufacturing, airports or military bases, and fire training facilities. However, lower levels have been found associated with septic systems, municipal wastewater, and land application of biosolid or sludge fertilizers. MassDEP has proposed a drinking water MCL for PFAS of 20 parts per trillion, either alone or in summation for six individual compounds.

Higher density housing developments that have individual septic systems are of concern because the close proximity of multiple discharge points can significantly increase contaminant loading in the groundwater. The town center and the north side (near South Natick and MW-17) have higher housing densities. The Town also has two large septic dischargers that have permitted discharge locations. The Meadow's Housing community located in the center of town along Hawthorne Lane has a community wastewater treatment system. The system is immediately downgradient of the Colonial Water Company's Knollwood Dr. well and upgradient of MW-11. The Dover Sherborn High School and Regional Middle School also have a permitted discharge. However, the school's location on the southwestern side of the town has few adjacent residential properties and away from public water supplies.

Farms – The Town has a fair number of active farms for both livestock and crop production, in addition to sites of former farms. In both cases, the farms can be sources of fertilizers, pesticides, and herbicides which can be sources of nitrates, and SOCs. Runoff generated by precipitation or irrigation can pick up and concentrate the applied chemicals/animal waste that then enter surface water bodies or infiltrate into the groundwater. Elevated concentrations of nitrates in surface water can lead to eutrophication (algal blooms) and ultimately affect water quality, animal life, and

natural aesthetics for recreational use. SOCs are attributed to various negative health effects but are typically found in groundwater near high intensity agricultural facilities.

Transfer Station – The Dover Transfer Station and Landfill is located at 211 Powissett Street on the eastern side of Town. Transfer stations can be sources of a variety of contaminants including petrochemicals, chlorinated solvents, pesticides/herbicides, household cleaning products, among others. According to the MassGIS database, the landfill is capped but unlined. The facility is situated in a mostly wooded area away from residential properties and public wells.

Roads – Roads running throughout the town can be sources of petroleum products from cars as well as chlorides from de-icing salts. Petroleum products are typically present in small quantities but can be of concern if an automobile accident has occurred and fuel or other petroleum products have leaked. In the New England winters, freezing conditions and precipitation require most towns to apply roadway de-icing salts to melt snow and ice and prevent freezing. Runoff of the dissolved salts can flow into surface water bodies and groundwater. Elevated levels of chlorides can cause to lead and copper corrosion of plumbing components. High concentrations of the dissolved metals from the plumbing components can lead to negative health effects.

2.3 WATER SUPPLIES

2.3.1 Private Wells

Approximately 63%, or over 1,300 of Dover households get their water from private wells of varying depths on their own property. Approximate locations of private wells in Dover, obtained from the MassDEP Well Driller program SearchWell database, are shown on **Plate 1**. The SearchWell database, although incomplete, indicated the following data in relation to private wells in Dover:

- Of the 902 private well records listed and categorized, 752 were listed as domestic wells.
- For those 752 record listed as domestic wells, about 70% of the wells were over 300 feet deep; 40 of the domestic wells are over 1,000 feet deep.
- There are records of 48 irrigation wells in Dover.
- **In the past ten years of records (2007-2017), 134 wells have either been decommissioned, drilled deeper, or hydrofractured (a method to increase yield).**

2.3.2 Public Water Systems Overview

About 37% of Dover households (approximately 1,043 residents) who do not have private wells are served by one of the privately-owned Public Water Systems (PWS). **Table 2-1** below shows the seven public water suppliers with wells located within the Town and the approximate populations they serve. The extent of the PWS distribution systems within Dover are shown on **Plate 4**. The PWSs draw water from a number of overburden shallow wells, typically 25-40 feet deep, and within Dover's geographic boundary. The largest Public Water Supplier in Town, the Colonial Water Company (formerly known as the Dover Water Company), serves 29% of Dover residents. The history of the development of the various water systems in Dover is complex. A summary of this history as compiled by the Dover Board of Health WRSC is provided in Appendix B.

Table 2-1: Public Water Systems Supplied by Wells in Dover

System Name	PWS ID#	Dover Population Served[(1)]	System Type	Notes	Average Daily Pumping [(2)] (gal/d)
Colonial Water	3078006	1,674	Community	7 active gravel wells	146,284
Springdale Farms Trust (Colonial Water purchased 2018)	3078008	150	Community	2 gravel wells	18,987
Town of Dover Water Dept	3078000	500	Non-Transient-Non-Community (school)	Caryl Park Well (gravel)	1,795
Old Farm Rd. Water Trust	3078001	40	Community	Bedrock Well	3,410
Glen Ridge Trust	3078002	122	Community	Purchases water from Natick	12,042
Meadowbrook Water Trust	3078005	57	Community	Purchased water from Natick	5,031
Precious Beginnings	3078010	44	Transient Non-Community (day care)	Day care center	80

(1)Service population is from MassDEP ASR
(2) Average Daily Pumping from MassDEP ASR 2009 - 2017

About 3% of Dover residents are served by either the Town of Natick or the Town of Walpole water systems. The Natick water system includes two gravel wells which are located within the Town of Dover at the Elm Bank Reservation. The towns of Natick, Dover, Wellesley, and

Needham under an Agreement (December 1985) between the towns and then an Act of the Legislature (Acts of 1986, Ch. 624) hold a right restricted to those towns to access the Charles River aquifer at Elm Bank for the purposes of pumping water for public domestic use. Only Natick currently does this, subject to an agreement with Dover. If Dover should, in the future, require the use of Charles River water, it has the legal right to use water drawn at Elm Bank.

The largest water system in Dover, Colonial Water Company, has 7 active wells (and two inactive wells) in Dover and is subject to a Water Management Act Withdrawal Permit (WMA Permit) under the regulatory authority of the Massachusetts Department of Environmental Protection (MassDEP). The WMA Permit (Appendix C) limits the annual total withdrawal of Colonial to an average of 130,000 gallons per day as well as setting individual well pumping rates and specifying residential water use limits and limits on summer non-essential water use requirements and other conditions.

2.3.3 Public Systems Historical Water Demands

Data obtained from the MassDEP Annual Statistical Reports (ASR) which public water suppliers are required to file each year were used to construct the following figures. **Figure 2-2** shows the average daily demand (ADD) for each of the PWSs. The Colonial Water system ranges are depicted on the secondary y-axis (right side of chart) because it is a magnitude greater than the second largest supplier in the Town (Springdale). ADD is also presented in **Table 2-1**.

Observations from **Figure 2-2** include:

- Colonial Water has the highest ADD and serves the largest population. The ADD ranges between 115,000 to 172,000 gallons per day (gpd);
- **Colonial Water exceeded its annual Water Management Act Permit allocation in 7 of the last 9 years. During 2015 this exceedance was 33% higher than its Permit limit.**
- The Springdale Farms PWS (a part of Colonial Water Company since 2018) has the second highest ADD and a small population (150) compared to the Dover Water Department (pop. of 500) and Colonial Water (pop. of 1674). Springdale Farm's ADD ranges between 15,000 to 21,000 gallons per day.
- The Dover Water Department has the second highest population and the second lowest ADD, which reflects the fact that it serves a school instead of residences. The ADD ranges between 1,500 to 2100 gpd.

Figure 2-2: Average Daily Demand for PWSs (2009-2017), gallons per day

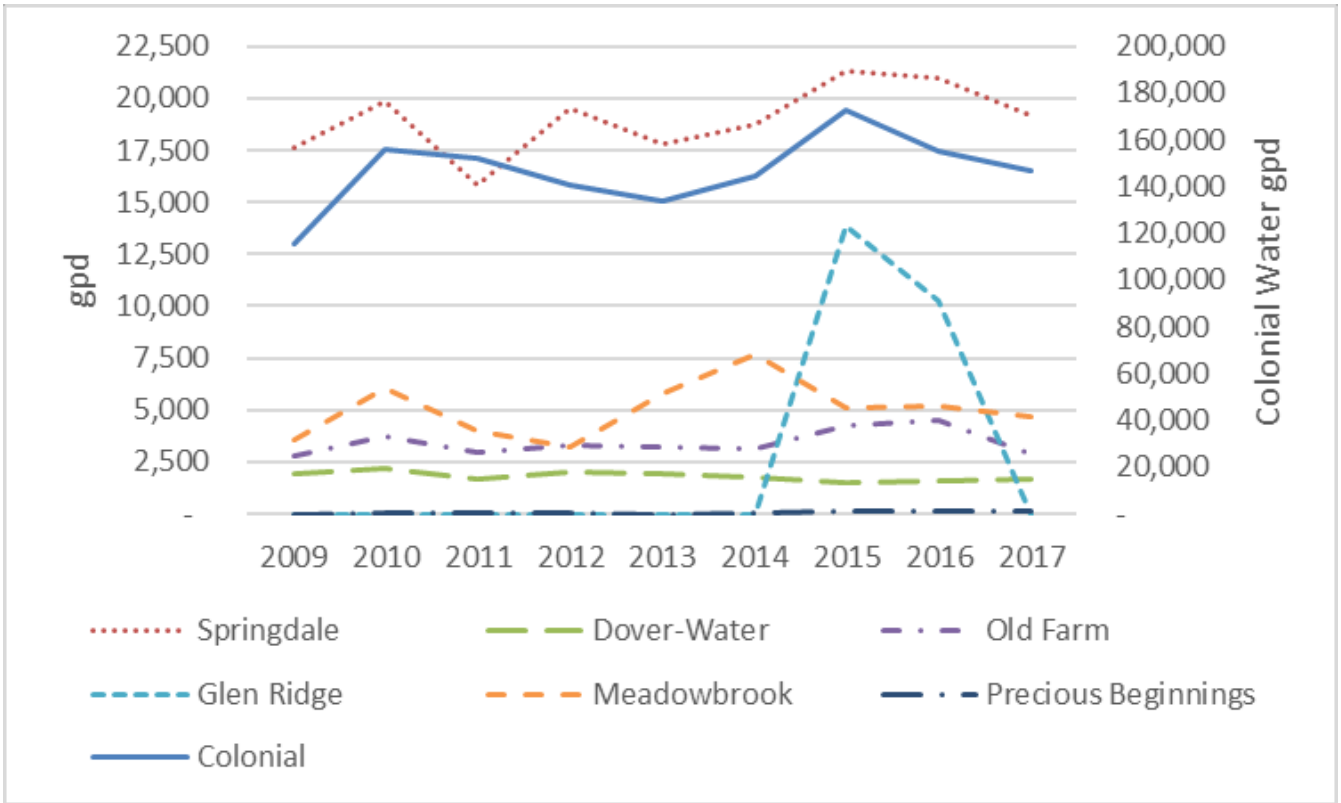
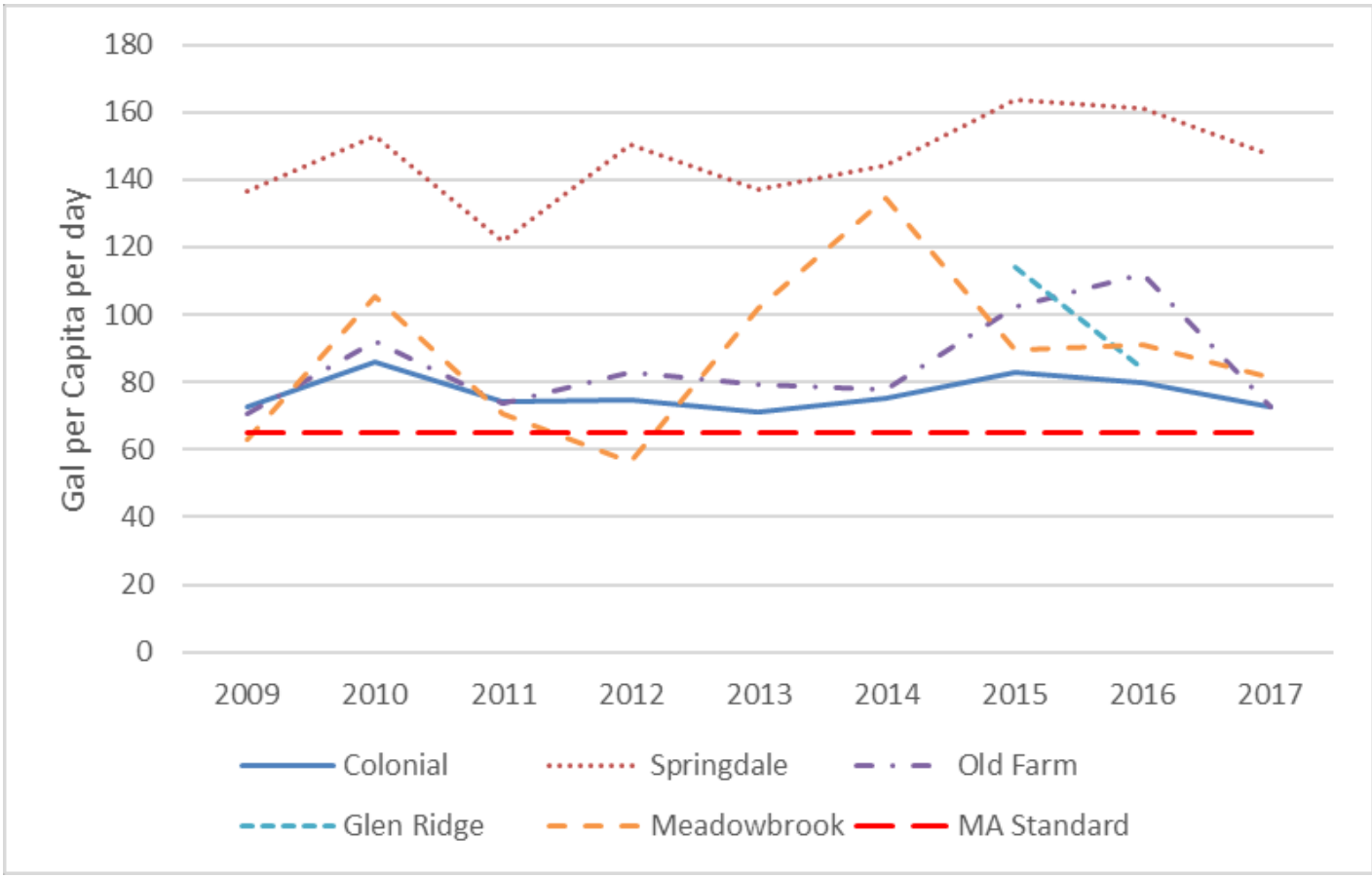


Figure 2-3 translates the ADD into residential gallons per capita day (RGPCD) for the five community water systems. The RGPCD is the estimated domestic water usage per person. Higher rates can be indicative of more frequent summer lawn watering and/or other outdoor uses, or of plumbing fixtures not meeting state plumbing code efficiency standards. The Massachusetts RGPCD Standard is 65 gal/capita/day and is depicted in the figure as the red dashed line. **Colonial Water, Springdale Farms, Old Farm, Glen Ridge, and Meadowbrook all have RGPCD over the Massachusetts standard, with Springdale Farms over twice the standard. Springdale also appears to have an increasing trend over the past five years**.

Given these exceedances, according to Water Management Act permit conditions, the PWSs exceeding the standard must file an RGPCD Compliance Plan with MassDEP. This Plan must include a description of actions taken each year to meet the standard, an analysis of cause of failure, and a description of proposed actions to meet the standard. Specific requirements are listed in Appendix C.

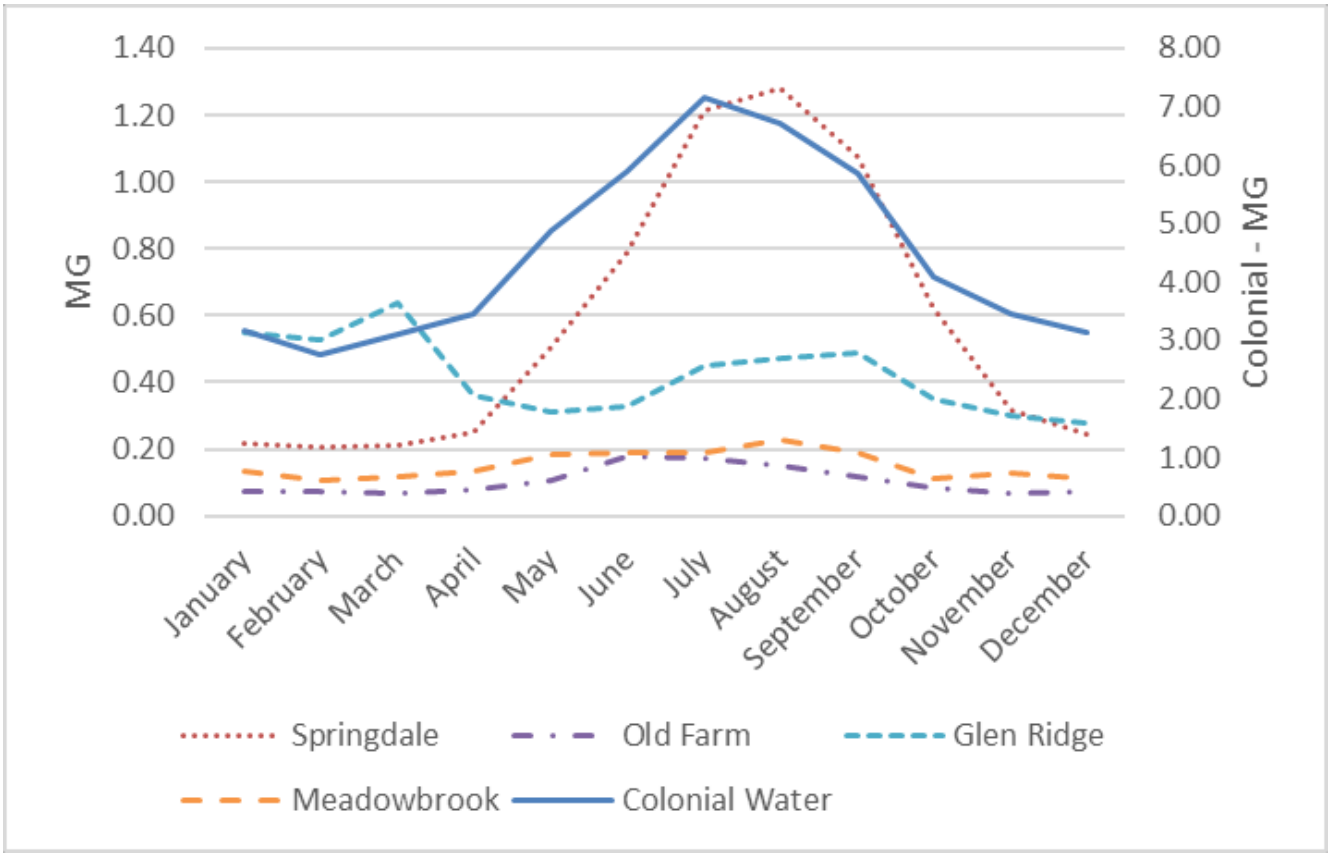
Figure 2-3: Residential Gallons per Capita per Day (2009-2017)



2.3.4 Public Water Systems Seasonal Water Demands

Monthly data collected between 2009 and 2017 from the MassDEP ASRs were used to plot monthly averages for the five community water systems**. Figure 2-4** presents the monthly average usage (volume) in millions of gallons (MG). The Colonial Water system ranges are depicted on the secondary y-axis (right side of chart) because values are an order of magnitude greater than the second largest supplier in Town (Springdale).

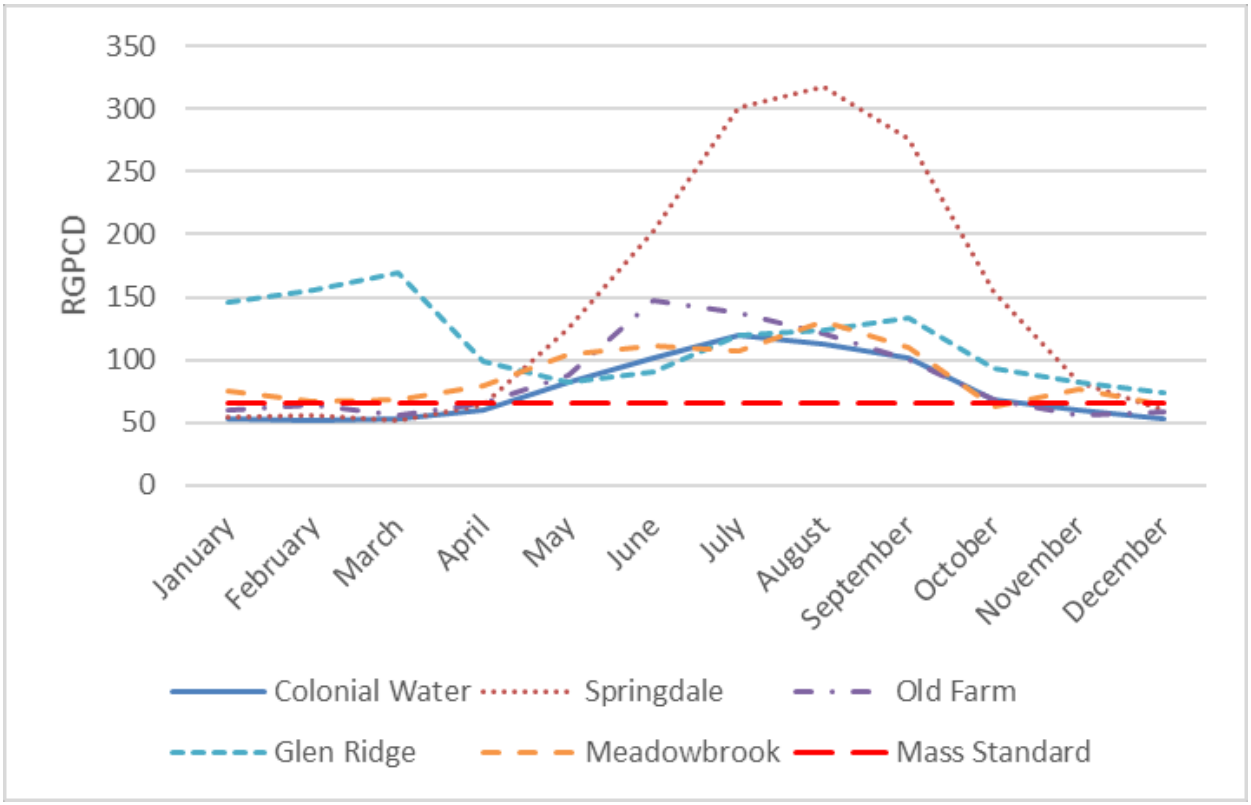
Figure 2-4: Monthly Average Usage for PWSs (2009-2017)



Typical seasonal trends for PWSs are defined by lower usage in the winter and higher usage in the summer months. Higher usage in the summer months is primarily due to outdoor water usage such as watering lawns and filling swimming pools. Results demonstrate higher summer usage in the Colonial, Springdale, Meadow Brook, and Old Farm systems. **This difference is most drastically pronounced for the Colonial system (usage doubles) and Springdale Farms, whose usage is six-fold higher in summer.**

The monthly average RGPCD is shown in **Figure 2-5** and is calculated based upon the monthly usage statistics between 2009 and 2017 provided in the ASR. The Massachusetts Standard is 65 gal/capita/day and is depicted in the figure as the red dashed line. The Colonial Water system ranges are depicted on the secondary y-axis (right side of chart).

Figure 2-5: Monthly Average RGPCD for PWSs (2009-2017)



Results from **Figure 2-5** show that most of the PWSs in Dover exceed the Massachusetts RGPCD Standard of 65, particularly in the summer months which is consistent with monthly average usages. Again, the Glen Ridge data is only representative of the 2015 monthly data. Discounting Glen Ridge, the Colonial and Springdale systems have the highest RGPCD. However more importantly, the Colonial and Meadowbrook System consistently throughout the year do not reduce the RGPCD below the Massachusetts Standard. This shows that the customers of in these systems are consistently using more water than other residents in the Town, and in particular during the time of year when aquifers are more stressed.

2.4 USGS DATA

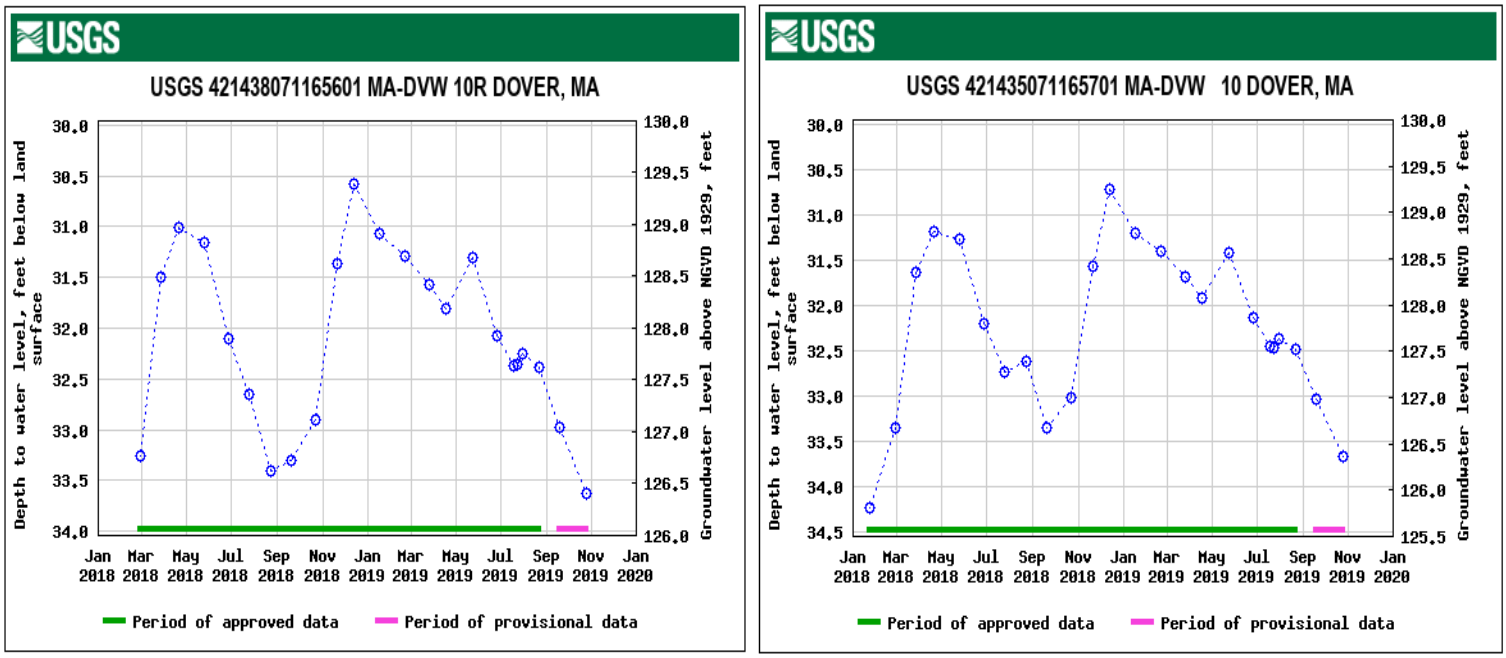
The Town of Dover has four active United States Geological Survey (USGS) monitoring stations; two groundwater wells and two stream gauges. **Table 2-2** below lists each station, type, data collected and frequency. The measurement from each of these is used in comparison to the measurements taken during this study.

Table 2-2: USGS Data Sites Inventory

Station Name	Number	Type	Data	Monitoring Frequency
MA-DVW 10R Dover, MA	421438071165601	Well (52.2 ft deep)	Depth to Water	Monthly
MA-DVW 10 Dover, MA	421435071165701	Well (54.0 ft deep)	Depth to Water	Monthly
Trout Brook at Dover, MA	01103455	Stream Gauge	Discharge, gauge height	15 min
Charles River at Dover, MA	01103500	Stream Gauge	Discharge, gauge height	15 min

Plate 2, Hydrography and Environmental Map, depicts the locations of each of the monitoring stations. **Figure 2-6** presents the data for the two USGS well stations monitoring between 2018 and 2019. Wells 10 and 10R are both overburden wells with depths of 54 feet and 52.2 feet below land surface, respectively. The USGS ground water well is particularly important because past data can be used to provide context to seasonal trends in nearby wells. The same is also true for the stream gauges.

Figure 2-6: Dover USGS Monitoring Wells 2018-2019



2.5 LOCAL PRECIPITATION

The National Oceanic and Atmospheric Administration (NOAA) operates and maintains the National Climate Data Center (NCDC) and Global Historical Climatology Network (GHCN) which collects, records and certifies climate data such as precipitation and temperature, among others. The network of weather stations stretches around the globe providing data free for public use.

Several towns bordering Dover have weather stations in the GHCN. In the Town of Norwood, station GHCND:US1MANF0001 is the closest certified weather station with complete precipitation records available for the entire duration of this study. **Figure 2-7** shows the location of the Norwood weather station and its proximity to Dover. The daily precipitation records from this station were used in the study and are shown in **Figure 2-8.** Over the course of the study, the station recorded a total of 39.47 inches of precipitation.

Figure 2-7: Weather Station GHCND:US1MANF0001 near Norwood, MA

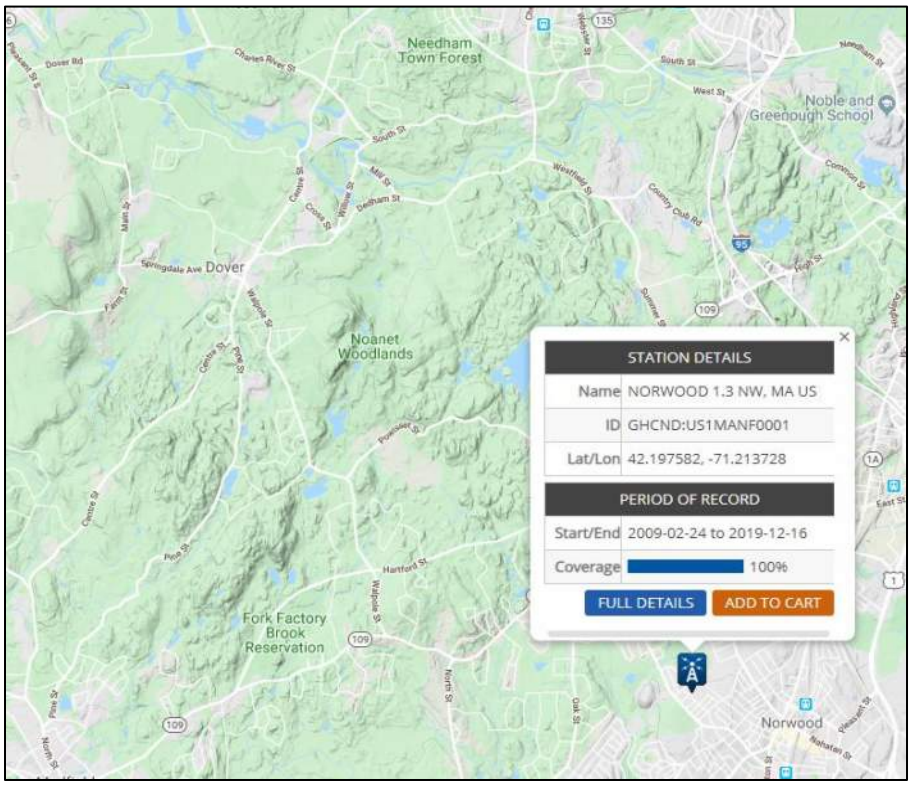
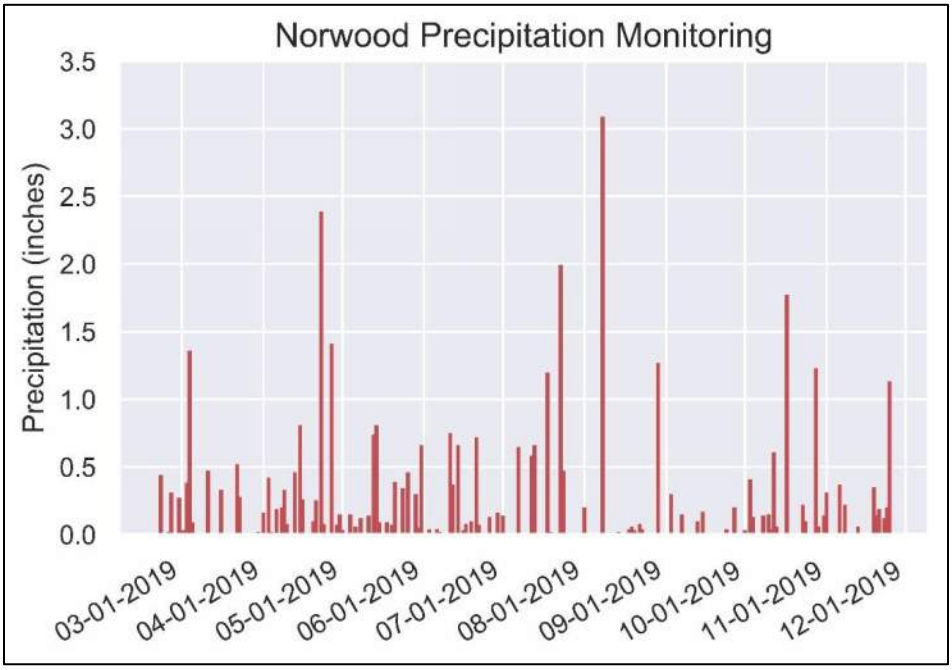


Figure 2-8: Daily Precipitation at Weather Station GHCND:US1MANF0001 in Norwood, MA



3 GIS MAPPING AND MONITORING SITE SELECTION

One of the objectives of the project was to compile and update water resources related information for Dover. This information will help to put results of the hydrology study monitoring into context. In addition, available information was used to update the inventory of water distribution system infrastructure in Dover. The sources of data utilized are described below, followed by a description of the monitoring network design

3.1 GIS DATA SOURCES

Multiple sources of information were used to develop the GIS maps included in this report. Available data utilized from MassGIS included the following:

- Surficial Geology
- MassDEP Hydrography – lakes, ponds, streams, wetlands
- Certified Vernal Pools and Priority Habitat
- Major Drainage Basins
- USGS Monitoring Stations
- Protected Open Space
- Assessors Tax Parcels (2018)
- Public Water Supply points and Zone II protection areas
- Private Wells
- Regulated Facilities – Environmental sites (AUL, C21E, UST, groundwater discharge permits, landfills)

For the public water system infrastructure, the Colonial Water Company provided electronic files which were used to generate shapefiles of the water mains in GIS (**Plate 4**). For the other water systems, information provided was in paper map or PDF format. These paper maps were used to draw in schematically the extent of water main infrastructure in Dover in the GIS. A GIS database schema for organizing attribute data was developed for Dover data relating to water supplies (water system infrastructure and monitoring network assets). This schema was used to populate attributes for the data. A copy of the schema utilized is included in Appendix D.

3.2 MONITORING SITE SELECTION

Following review of GIS maps and in consultation with the Committee, Kleinfelder selected potential monitoring site locations. The site selection objectives were to identify locations which met the following conditions:

- Located on Town-owned parcels, or within the Town road right-of-way
- Located in areas of mapped stratified drift deposits, to provide adequate water in overburden monitoring wells
- Located to provide monitoring coverage in areas of known or suspected concern such as
    - Near streams or wetlands reported going dry
    - Areas near potential contamination sources
    - Near reported hot spots of private well issues
- Providing good geographic coverage across the Town
- Located in each of the Zone II areas supplying public wells
- Located to avoid impacting sensitive resources such as wetlands and vernal pools.

The locations were selected based on geology, aquifers contributing to current public water supplies, areas of water quality or quantity concern, land ownership, minimizing impact to sensitive resources, and accessibility. Up to 17 locations were proposed and the establishment of the monitoring network is described in Section 4.

4 FIELD MONITORING NETWORK

4.1 EXISTING USGS MONITORING SITES

Section 2.4 inventories the USGS stations within the Town, which includes two well and two stream gauges. The USGS stations were considered when choosing locations for the new monitoring wells and stream gauges. Data from these sources are particularly important in offering a long-term source of historical and future data. This may be useful in identifying longer term trends over multiple years. The Dover monitoring network data set can be periodically compared to the USGS data sets to look at regional trends. The locations of all the USGS stations and new monitoring wells and stream gauges are depicted on **Plate 3**, Hydrology Study Monitoring Network.

4.2 MONITORING WELL INSTALLATION

The original project scope called for the installation of up to 20 small diameter (2-inch) overburden monitoring wells of approximately 25 feet deep. Monitoring well locations were chosen in consultation with the Dover Board of Health Committee to be installed on parcels of Town-owned land. Kleinfelder worked with the Committee to approve final drilling locations and obtain and coordinate access to locations. Kleinfelder subcontracted with Crawford Drilling Services of Westminster, MA to complete the drilling program between December 2018 and February 2019.

A drilling program at 16 locations was completed between December 17 and December 20, 2018 in the shallow overburden aquifer at areas of concern around the Town. Wells were drilled using a Geoprobe drilling rig to 25 feet deep, or refusal, whichever was first encountered. The well construction typically consisted of a 10-foot long, two-inch diameter slotted screen coupled to a two-inch diameter SCH40 PVC pipe extended to 2.5 feet above grade. The annular space between the borehole and casing was backfilled with #1 Sand up to two feet above the screen, followed by a two-foot bentonite seal. The remaining space above the seal was then backfilled with #1 Sand. Finally, the contractor installed a five-foot tall locked protective steel standpipe around each PVC casing. Following installation, each well was developed via pumping until the discharge ran clear. The depth to water was measured prior to pumping and after recovery the following day. Some locations were particularly silty. Additional well development was performed prior to the water quality sampling described in Section 6.

Three overburden locations (MW-07, MW-08, and MW-10), which at first appeared to be located in suitable locations (as determined by USGS surficial geology maps) and to have sufficient water at the time of installation, were later observed to go dry and deemed unsuitable for installation of data loggers. Subsequently, an additional phase of drilling was proposed to install one shallow bedrock well at location 7 (Ben Arthur Way) to provide a monitoring point in an area with numerous private wells. The Dover BOH Committee approved the bedrock well (MW-7B), and it was installed by Crawford on February 11 and 12, 2019. MW-7B was drilled to a depth of 61 feet below grade. Bedrock was encountered at a depth of 22.5 feet below grade. Depth to groundwater was approximately 20 feet below grade.

The Town's Church Street supply well has been abandoned since a gasoline spill at the nearby Mobil gas station occurred during 1986. Using an existing test well at the Church street site for groundwater level monitoring was discussed with the Committee. Further discussions and site inspections indicated that the site consists of a tubular vacuum wellfield (abandoned as is) which consists of a series of driven well points (typically open at the bottom without a well screen), capped about 2 feet above grade, which are manifolded together underground via lateral pipes (typically 2" diameter). The laterals connect to the well house, which is a small collapsed structure partially above ground. Due to the way the system was reportedly abandoned in place at the time of the fuel spill, it is thought that the system could still be under vacuum and could likely still contain contaminated water. It was decided that these well points would be unsuitable for use in monitoring the ambient groundwater conditions and given the number of unknowns, disturbing the existing conditions would not be advisable. A separate individual test well at the site was subsequently identified, however, further investigation indicated that the well was dry. Therefore, the decision was made to eliminate monitoring at the location originally identified as 'MW-12'.

Details regarding the locations for each monitoring well and final depths are presented in **Table 4-1:**

Table 4-1: Monitoring Well Locations and Installation Summary

Location ID	Latitude	Longitude	Installation Date	Address (approx.)	Total Depth (bgs)	Well Type	Parcel ID	Comments
MW-01	42.220385	-71.26668	12/17/2018	1 Hunters Path	25	Overburden	18-127-B	
MW-02	42.220234	-71.260247	12/17/2018	3 Tubwreck Drive	12	Overburden	19-10-0	
MW-03	42.22353	-71.293393	12/18/2018	5 Snow's Hill Lane	19	Overburden	22-2-N	
MW-04	42.225501	-71.315286	12/18/2018	11 Grand Hill Drive	13	Overburden	16-22-0	
MW-05	42.232488	-71.329646	12/18/2018	102 Bridge Street	25	Overburden	15-7-0	
MW-06	42.233655	-71.286222	12/20/2018	100 Centre Street	25	Overburden	17-40-A	
MW-07	42.233179	-71.278376	12/17/2018	12 Ben Arthurs Way	---	---	---	Dry, not used
MW-7B	42.23308	-71.27807	02/11/2019	Ben Arthurs Way	62	Bedrock		
MW-08	42.224529	-71.281507	12/17/2018	101 Pine Street	---	---	---	Dry, not used
MW-09	42.245263	-71.270354	12/19/2018	121 Dedham St Caryl Park	25	Overburden	12-47-0	
MW-10	42.245666	-71.274043	12/18/2018	Highland Cemetery - 54 Centre St	---	---	---	Dry, not used
MW-11	42.24544	-71.28733	12/19/2018	46 Springdale Avenue	25	Overburden	11-49-0	
MW-12	---	---		Church Street	---	---	---	Site determined unsuitable
MW-13	42.25416	-71.293324	12/20/2018	101 Haven Street	15	Overburden	5-186-A	
MW-14	42.258439	-71.285214	12/19/2018	12 Chickering Drive	25	Overburden	5-77-0	
MW-15	42.260357	-71.298511	12/20/2018	65-67 Main Street	20	Overburden	5-197-0	
MW-16	42.256427	-71.242075	12/20/2018	301 Dedham Street	25	Overburden	36749	
MW-17	42.26703	-71.303812	12/19/2018	8 Brook Road	25	Overburden		

4.3 GROUNDWATER AND STREAM MONITORING NETWORK

On February 20, 2019, Kleinfelder personnel installed data-logging transducers to measure water level in the monitoring well network at 14 sites that were strategically located across Dover. Additionally, piezometers and stream gauges with transducers were installed at six of the sites in March and June 2019 as described in more detail below.

4.3.1 Water Level Transducers Setup

Pressure transducers were utilized to autonomously collect water level data throughout the course of the study. ONSET HOBO U20L transducers are microcontrollers with pressure and temperature sensors in a waterproof enclosure and programmed to record measurements at specified time intervals. The transducers are programmed on a computer using the ONSET HOBOWare software and then deployed by submersing them in wells and streams, or other water bodies. The pressure readings are converted to measurements of water level as described below.

The transducer model(s) deployed in this project are non-vented and require barometric compensation by incorporating local barometric pressure. The local barometric pressure is collected from a local weather station or through deployment of an additional transducer that is left to the atmosphere (not submerged). Barometric compensation calculations are accomplished by the HOBOWare software during data processing after the transducer data has been downloaded onto a computer. When the data is uploaded from either a well or stream transducer along with the barometric data, the HOBOWare software transforms the data using a barometric compensation assistant and outputs a corrected pressure and/or water level. A technical note from ONSET detailing the methodology is available on their website and at the following link: https://www.onsetcomp.com/support/tech-note/barometric-compensation-method.

In this project, 14 transducers were installed in monitoring wells along with one for local barometric pressure. Additionally, five transducers were installed in streams to collect local stream stage data. All transducers were programmed to collect measurements in 15-minute intervals. Kleinfelder personnel visited the sites periodically to download and review data from each transducer, take reference measurements using a water level probe, and reprogram/trouble shoot any devices when necessary.

Data read-out from the transducers was downloaded using the Onset HOBO Waterproof Shuttle and processed using the HOBOware software (and the barometric compensation assistant). The final output includes date, time, temperature, corrected pressure, and a water level in a Comma Separated Value (CSV) file that is used for data processing and visualization purposes.

4.3.2 Monitoring Well Transducer Deployment

On February 20, 2019, transducers were installed in each of the 14 monitoring wells described in **Table 4-1**. In addition, one transducer ('BARO') was deployed in the air (at site MW-17) to log local barometric pressure. Each transducer was programmed prior to the site visit to take measurements in fifteen-minute intervals. **Figure 4-1** depicts a typical deployment of a submersible transducer in a monitoring well indicating the several different measurements that can be taken. During this study the data, pressure directly translates to the submergence depth by converting pressure into feet of head (pressure in psi x 2.31 ft/psi = feet of head) and depth to water (DTW) is the measurement from the Top of Casing (TOC) to the water level. DTW is presented in the data analysis as it is a more intuitive measurement and allows staff collecting measurements to confirm measurements using a water level probe quickly without the need to convert units.

Transducers deployed into the monitoring well used heavy gauge line secured to the well cap. To obtain accurate measurements and prevent the transducer from daylighting during the typical daily and seasonal water level fluctuations, they were hung approximately 1-2 feet off the bottom of the well, or deeper as needed. Staff recorded the datetime of installation and water level reading to serve as the reference level used in the barometric compensation assistant. During site visits, Kleinfelder personnel downloaded transducer data, and took manual water level measurements from the top of inner PVC casing in each monitoring well. Staff imported the data using the Onset HOBOware PRO software to quickly inspect the data for anomalous readings or improper device functioning.

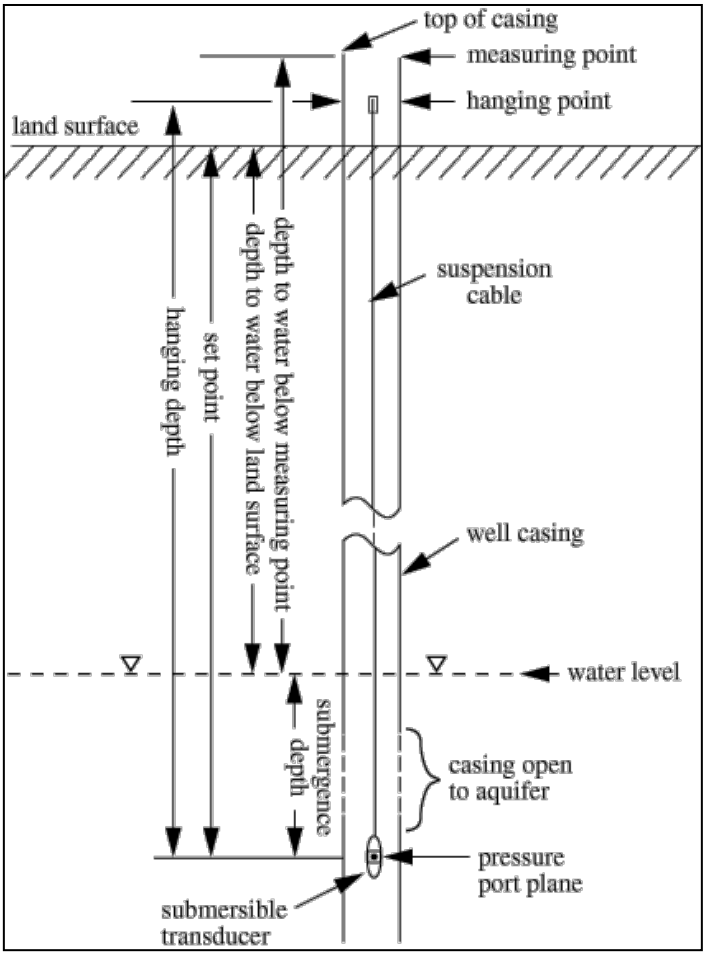


Figure 4-1: Typical Transducer Deployment in Monitoring Well

Table 4-2 below outlines the deployment data for each monitoring well.

Table 4-2: Monitoring Well Transducer Deployment Data

ID	Datetime	Serial Number	Total Depth (bgs)	Logger Range (ft)	Depth to Water (ft)
MW1	02/20/2019 11:45	20484377	25	30	7.1
MW2	02/20/2019 12:01	20516721	12	13	10.45
MW3	02/20/2019 12:21	20516717	19	13	10.55
MW4	02/20/2019 12:40	20516707	13	13	7.9
MW5	02/20/2019 13:00	20484375	25	30	8.75
MW6	02/20/2019 15:10	20516706	25	13	24.75
MW7B	02/20/2019 14:00	20484378	62	30	22.15
MW9	02/20/2019 8:40	20516709	25	13	15.85
MW11	02/20/2019 9:15	20516713	25	13	3.14
MW13	02/20/2019 9:45	20516714	15	13	5.3

ID	Datetime	Serial Number	Total Depth (bgs)	Logger Range (ft)	Depth to Water (ft)
MW14	02/20/2019 10:00	20484374	25	30	8.4
MW15	02/20/2019 10:30	20516715	20	13	6.63
MW16	02/20/2019 15:45	20484376	25	30	5.53
MW17	02/20/2019 11:22	20516711	25	13	5.8
BARO	02/20/2019 11:22		n/a	13	n/a

4.3.2.1 Extended Monitoring Setup

At the conclusion of the monitoring period of this study, November 25, 2019, each of the transducers deployed was reprogrammed to take readings on a 1-hour frequency. This will ultimately provide an extended battery life of each transducer and will hold approximately 2.5 years' worth of data. Based on manufacturer information, it is expected that the transducer battery life will last at least through 2023. Upon collection, barometric compensation should be applied using the reference water level collected during the final manual reading from November 25, 2019. The manual readings are provided for each transducer in the tables of Section 5.

4.3.3 Piezometer Installation and Stream Transducer Deployment

Stream transducers and piezometers were installed together at locations described in **Table 4-3, and Table 4-4**. Each piezometer consists of a 0.75-inch inner diameter, 9-foot-long steel pipe with a well point attached on the end. The piezometers were driven into the stream bed by hand using a slide hammer to a depth of approximately five feet. The above ground end of the pipe is left open to atmosphere and allows for measurements to be taken manually with a water level probe.

Piezometer water levels from inside the pipe and outside the pipe are compared to determine if the stream is a gaining stream (groundwater is contributing to the baseflow of the stream) or a losing stream (water table is below the streambed and surface water flows into the ground). Stream transducers were attached to each piezometer with the exception of PZ-13 because the USGS stream gauge station # 01103455 at Trout Brook is adjacent to the monitoring location. A typical stream transducer setup consists of an ONSET HOBO U20L installed within a perforated 2-inch diameter by 1.5-foot length PVC pipe. The unit is then affixed to the piezometer just above the streambed, making sure that the transducer is oriented properly and will remain submerged. When activated, the stream transducers measure the relative water levels in the stream.

Figure 4-2 below depicts a typical piezometer and stream transducer setup with the measurements that were collected. **Figure 4-3** shows a photograph of a typical installation.

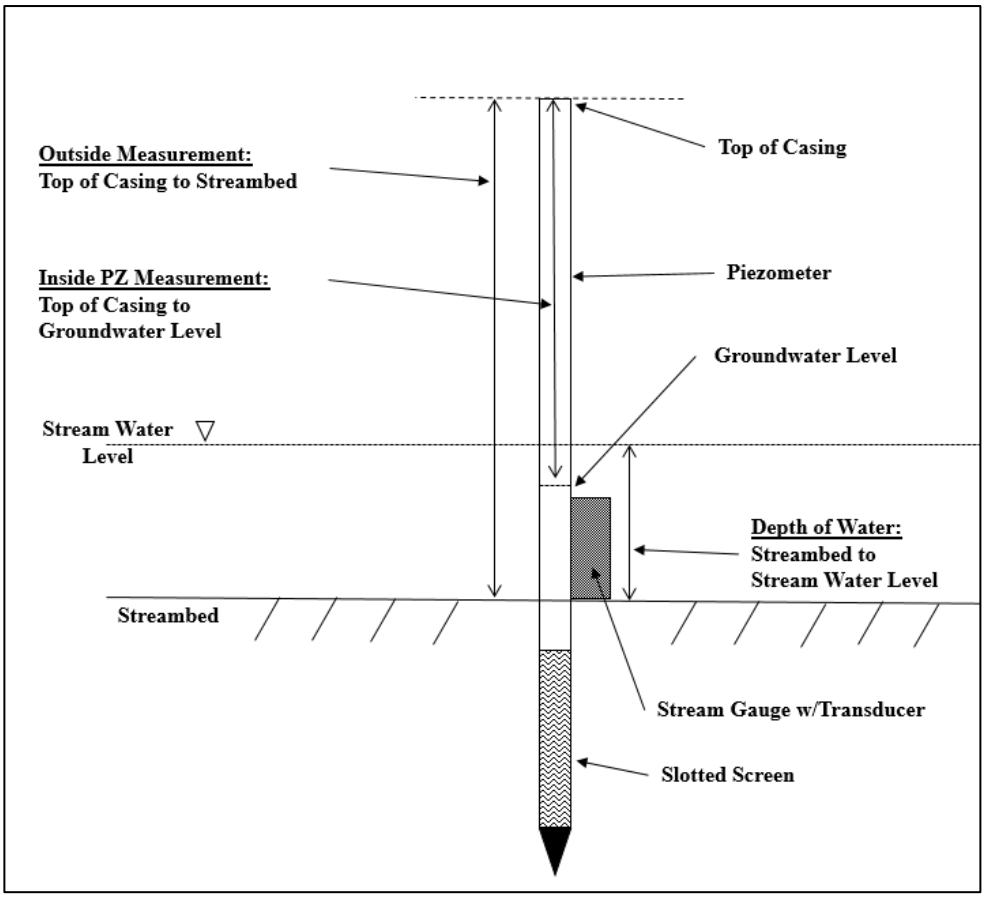


Figure 4-2: Piezometer and Stream Gauge Measurements

Figure 4-3: Photograph of Typical Piezometer and Stream Gauge Installation

Transducer setup was similar to that used for the monitoring wells. Each transducer serial numbers, date and time of installation was recorded. A reference level for each transducer is equal to the water level height (submergence depth). The water level is determined by subtracting the top of casing (TOC) for the piezometer to the water level from the TOC to the streambed. During the data processing phase, the reference water level is used to convert the water column pressure to a depth of water.

Table 4-3: Piezometer Installation Details

ID	Type	Latitude (DMS vis Google Earth)	Longitude (DMS vis Google Earth)	Address (approx.)	Total Length (ft)	Above Ground (ft)	Total Depth (ft bgs)	Screen Length (ft)	Reference
PZ2	Piezometer	42°13'13.11"N	71°15'36.25"W	3 Tubwreck Drive	6.25	3.24	3.01	1	Top of pipe
PZ4	Piezometer	42°13'25.91"N	71°18'55.84"W	11 Grand Hill Drive	10	5.38	4.62	1	Top of pipe
PZ11	Piezometer	42°14'43.53"N	71°17'13.76"W	46 Springdale Avenue	10	2.24	7.76	1	Top of pipe
PZ13	Piezometer	42°15'14.98"N	71°17'35.59"W	101 Haven Street	7.16	2.21	4.956	1	Top of pipe
PZ16	Piezometer	42°15'23.14"N	71°14'29.48"W	301 Dedham Street	10	5.36	4.64	1	Top of pipe
PZ18	Piezometer	42°13'45.50"N	71°16'37.54"W	54 Valley Road	8	2.9	5.1	1	Top of pipe

Table 4-4: Stream Gauge Installation Details

ID	Type	Latitude (DMS vis Google Earth)	Longitude (DMS vis Google Earth)	Address (approx.)	Reference	Outside PZ TOC to Water Level	PZ TOC to Streambed	Depth to Water (ref) (ft)
S2	Stream	42°13'13.11"N	71°15'36.25"W	3 Tubwreck Drive	Top of PZ	3.24	2.28	0.96
S4	Stream	42°13'25.91"N	71°18'55.84"W	11 Grand Hill Drive	Top of PZ	5.38	5.09	0.29
S11	Stream	42°14'43.53"N	71°17'13.76"W	46 Springdale Avenue	Top of PZ	2.24	1.07	1.17
S16	Stream	42°15'23.14"N	71°14'29.48"W	301 Dedham Street	Top of PZ	5.36	4.11	1.25
S18	Stream	42°13'45.50"N	71°16'37.54"W	54 Valley Road	Top of PZ	2.9	2.7	0.2

Table 4-4 (continued): Stream Gauge Installation Details

ID	Logger Deploy Date	Logger Serial Number	Logger Range (ft)	Reading Interval (min)
S2	03/20/2019 15:20	20516719	13	15
S4	03/20/2019 12:19	20516718	13	15
S11	03/20/2019 13:22	20516715	13	15
S16	03/20/2019 13:46	20516710	13	15
S18	05/10/2019 10:28	20516716	13	15

5 WATER LEVEL MONITORING RESULTS

5.1 MONITORING WELLS RESULTS:

Results from all monitoring well transducers deployed, as well as precipitation between February 20th through November 25, 2019 are depicted below in **Figure 5-1**:

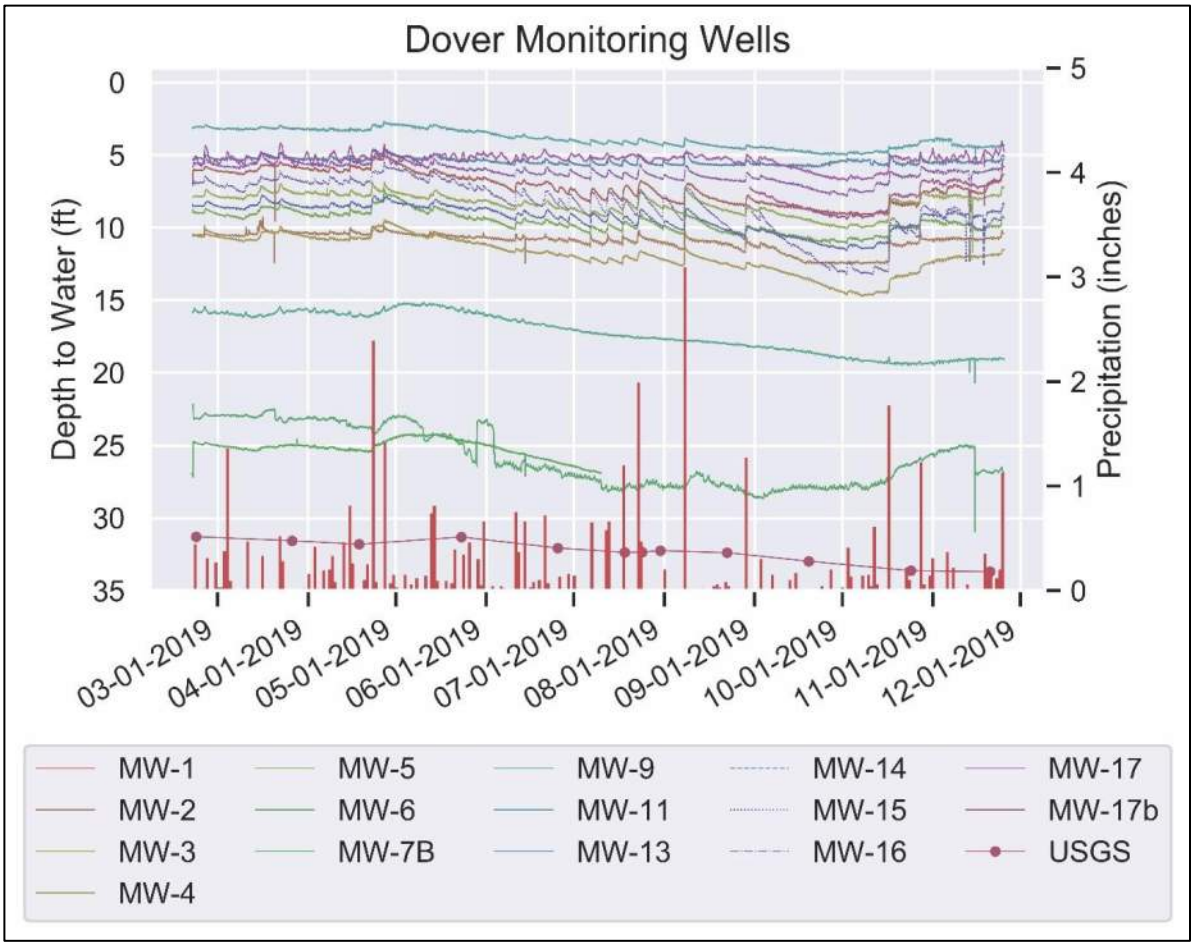


Figure 5-1: Depth to Water in Monitoring Wells, USGS Well 10, and Local Precipitation

Results and observations from each well are described individually in the following sections. Most of the monitoring wells show responses (increase in water level or decrease in DTW) to precipitation. Each of the monitoring wells follow a similar trend as to the USGS monitoring well with higher water levels in the winter months and lower water levels in the summer. This is in contrast to the PWS seasonal usage in Section 2.2, which is highest when availability is lowest.

Basic statistics from each Monitoring Well Transducer have been calculated and are presented in **Table 5-1**. From the table, typical overburden range fluctuations observed between 1.24 to 7.77 feet with an average of 4.17 feet (MW-07b is a bedrock well).

Table 5-1: Monitoring Well Statistics (feet)

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07b	MW-09
Maximum	8.48	11.89	14.74	10.11	11.73	27.20	28.8	20.70
Minimum	4.92	9.26	9.45	6.88	7.40	24.20	22.15	15.14
Average	6.93	10.72	11.85	8.33	9.63	25.21	25.83	17.25
Standard Deviation	0.92	0.36	1.22	0.71	0.72	0.64	1.98	1.38
Range	3.56	2.63	5.29	3.23	4.33	3.00	6.65	5.56

	MW-11	MW-13	MW-14	MW-15	MW-16	MW-17	MW-17b	USGS DOVER 10R
Maximum	5.46	5.84	12.59	13.24	8.94	6.34	8.49	33.7
Minimum	2.69	4.60	7.75	5.47	4.50	4.02	5.73	31.29
Average	3.89	5.42	9.32	8.55	6.18	5.25	7.36	32.31
Standard Deviation	0.63	0.23	0.93	1.92	0.65	0.32	0.59	0.77
Range	2.77	1.24	4.84	7.77	4.44	2.31	2.76	2.41

Each of the monitoring wells water transducer levels (as depth to water) are graphed below in **Figure 5-2**, along with precipitation observations in the study area:

Figure 5-2: Monitoring Well Depth to Water and Precipitation:

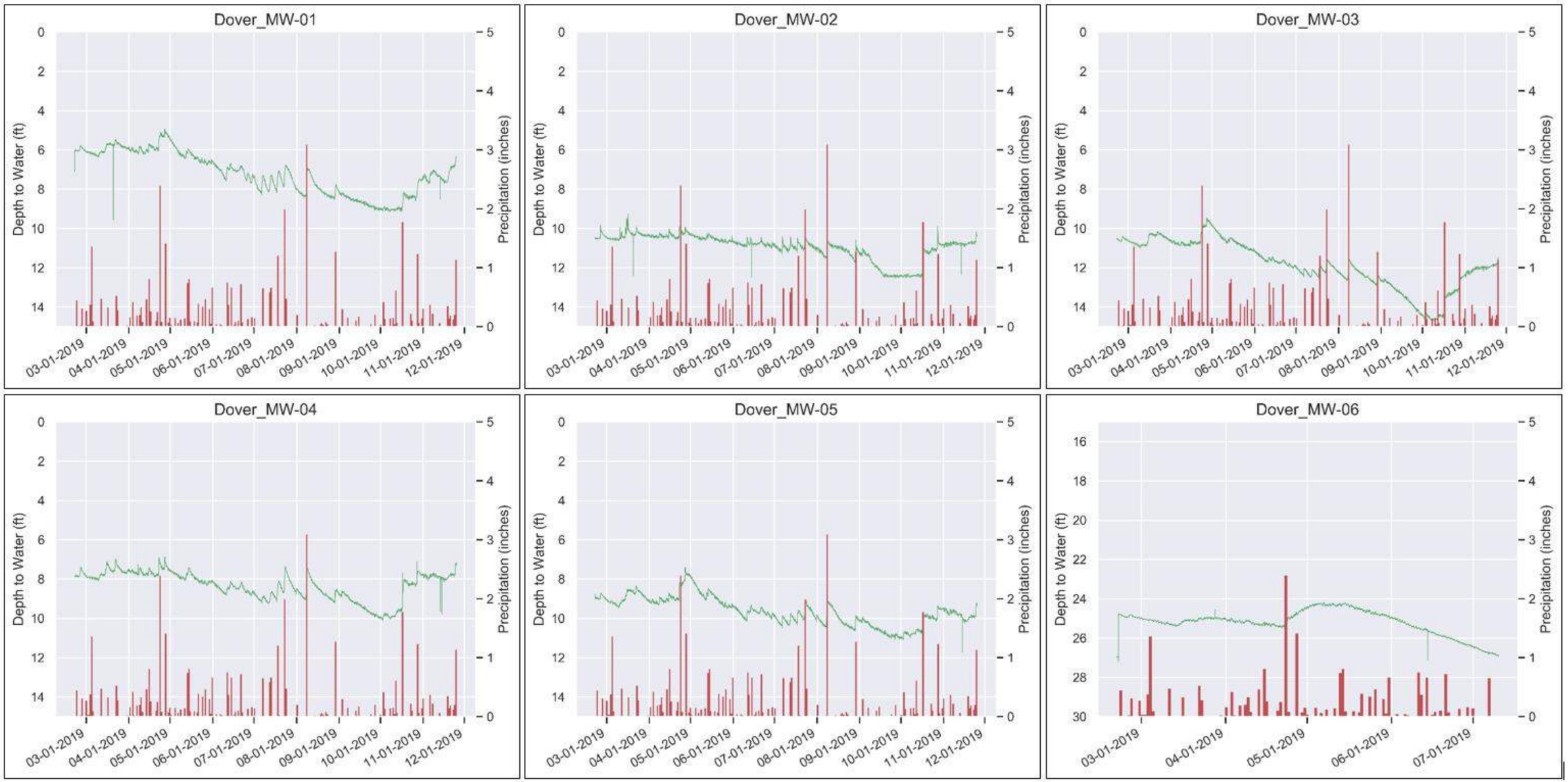


Figure 5-2: Monitoring Well Depth to Water and Precipitation (continued):

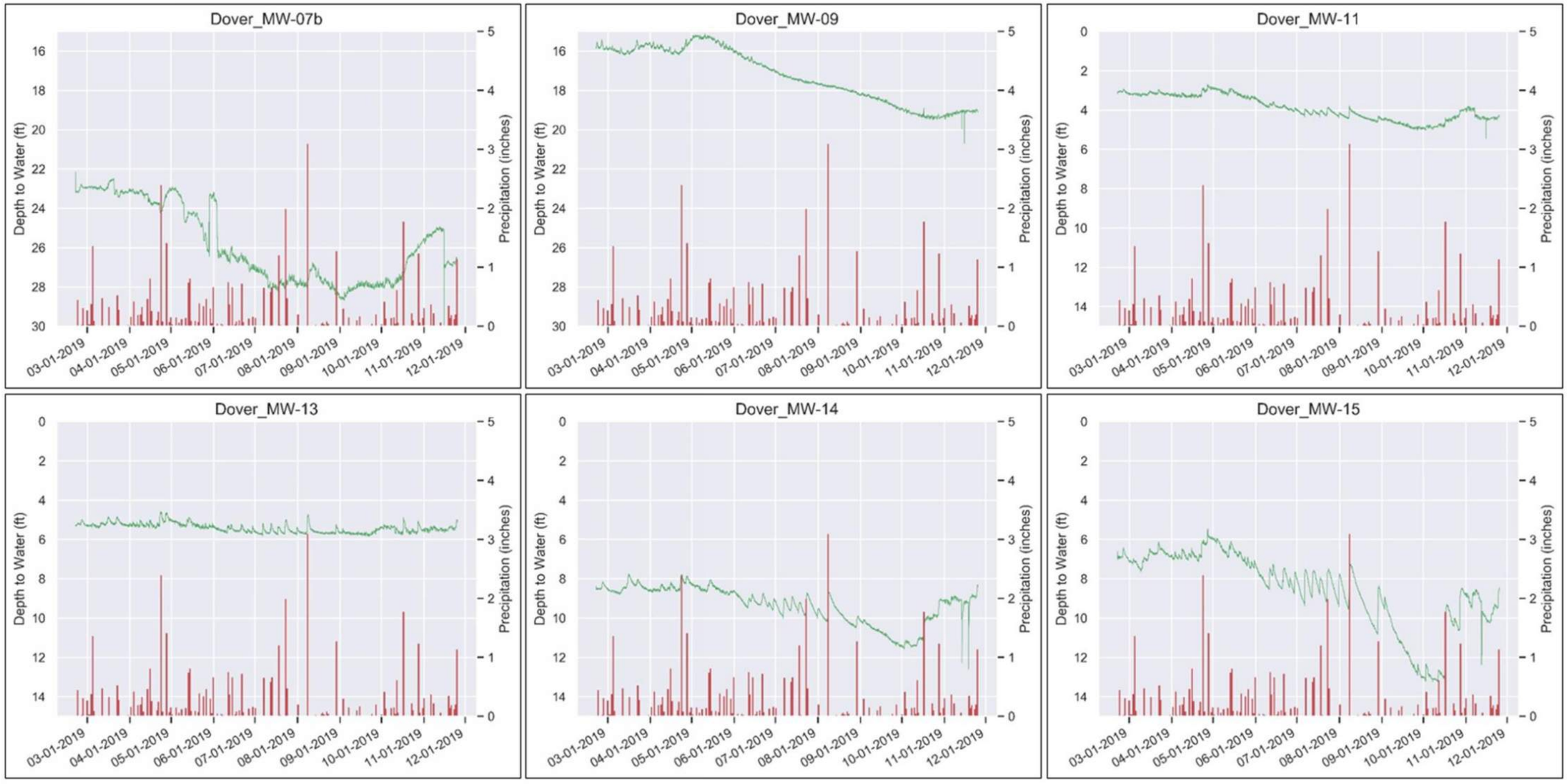
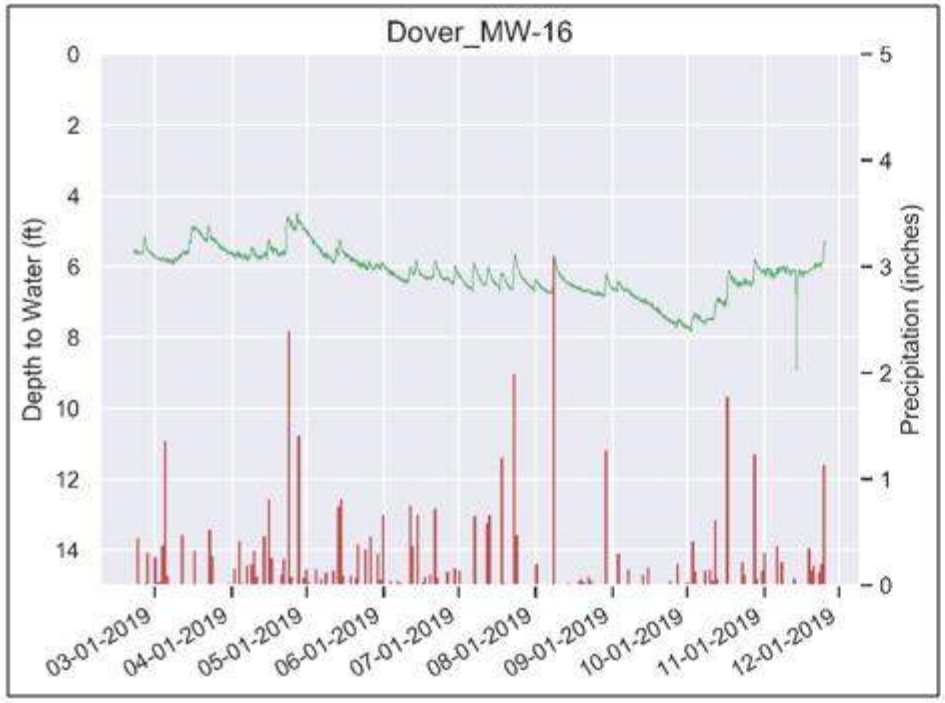
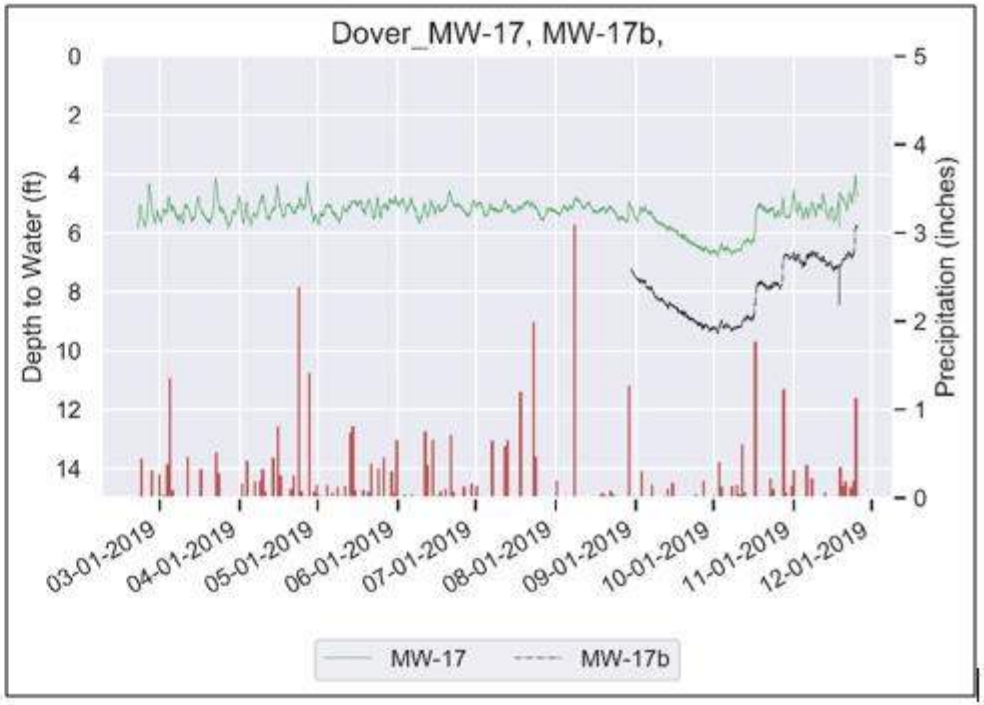


Figure 5-2: Monitoring Well Depth to Water and Precipitation (continued):





Observations from the data shown in **Figure 5-2** are discussed below:

MW-01, located on Hunter's Path, is 25-foot deep and installed near the boundary between the Mill Brook valley sand and gravel deposits and adjacent till deposits (**Plate 1**). The sand and gravel deposits associated with Mill Brook are part of the Zone II that provides recharge to the Colonial Water Company's Francis Street Wells which are about one-half mile downgradient of MW-01 (Plate 2).

Results from this monitoring well shows DTW readings with a 3.56-foot range of drawdown and an average DTW of 6.93 feet; as presented in **Table 5-1**. The well shows a decrease in Depth to Water following precipitation events. This is particularly evident following the two largest precipitation events where the DTW decreased by approximately 1-foot on April 23rd in response to 2.39 inches of precipitation and 1.5 feet on August 8th with 3.18 inches of precipitation. The well also exhibits steady response to drier periods. This is evident from the approximate 1-foot increase between September through mid-October where only 2.55 inches of precipitation fell in the area.

One anomalous event occurred on March 20th at 15:00 during a site visit from Kleinfelder personnel. The water level jumped from 5.7 feet to 9.5 feet and back within a 30-minute period and is attributed with the personnel removing the transducer from the well to inspect and download data. MW-01 was also purged and sampled on November 13th.

MW-02, located on Tubwreck Drive, is a very shallow well installed in till near Tubwreck Brook (**Plate 1**). Upon refusal at 12 feet, there was only about 1.55 feet of water in the well. There is a non-community well (Powissett Farms) near the headwaters of Tubwreck Brook about 1,800 feet upgradient. MW-2 was observed to go dry between September and October as the water level fell below 12 feet. The stream gauge indicated continued flow in the Brook, however.

Results from this monitoring well show DTW readings with a 2.63-foot range of drawdown and an average DTW of 10.72 feet; as presented in **Table 5-1.** The well shows a decrease in DTW (increase in water level) following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by approximately 2 feet on August 8th in response to 3.18 inches of precipitation. The well also exhibits an expected response to drier periods. This is evident from the approximate 1 foot increase between September through mid-October where only 2.55 inches of precipitation fell in the area.

Two anomalous events were captured during site visits on March 20th at 15:00 and June 14th at 09:15. They are attributed with the personnel removing the transducer from the well to inspect and download data. MW-02 was also purged and sampled on November 13th.

MW-03, located on Snow's Hill lane, is 19 feet deep and installed in till deposits (**Plate 1**). The well is near the upgradient edge of Zone II for Medfield's wells about 1.75 miles downgradient (**Plate 2**).

Results from this monitoring well show DTW readings with a 5.29-foot range of drawdown and an average DTW of 11.85 feet; as presented in **Table 5-1**. The well shows a decrease in DTW following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by approximately 1-foot on April 23rd in response to 2.39 inches of precipitation and 1.25 feet on August 8th with 3.18 inches of precipitation. The well also exhibits increase in response to drier periods, although a bit more exaggerated as compared to MW-01 and MW-02. This is evident from the approximate 2.25 foot increase between September through mid-October where only 2.55 inches of precipitation fell in the area. No anomalous readings were captured during the monitoring period.

MW-04 is located on Grand Hill Drive near headwaters of North Brook, the well is shallow at 13 feet deep and installed in till deposits (**Plate 1**). The location is near the upgradient edge of the Zone II for Medfield's wells about 1.5 miles downgradient (**Plate 2**). Wetlands on the north side of Grand Hill Drive drain through a culvert under the roadway and discharge immediately adjacent to the monitoring well.

Results from this monitoring well demonstrate DTW readings with a 3.23-foot range of drawdown and an average DTW of 8.33 feet; basic statistics and manual DTW readings during site visits are provided in **Table 5-1**. The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by slightly less than 1 foot on April 23rd in response to 2.39 inches of precipitation and 1.75 feet on August 8th with 3.18 inches of precipitation. The well also exhibits steady but slightly shallower-sloped increase in response to smaller and less frequent precipitation event. This is evident from the approximate 1-foot increase between September through mid-October.

Two anomalous events were observed on October 17th and 28th where there was a sudden decrease in DTW by about 1-foot, followed by a sudden increase by about 0.5 feet; both occurring within one-hour periods. The two events took place on days with significant precipitation events.

These events could be due to the close proximity of the monitoring well to the culvert underneath Grand Hill Drive. Inspection of other precipitation events demonstrate the rapid decrease in water level but not the sudden increase immediately following. Drawdown and recovery events from purging the wells during sampling occurred on November 13th and 14th.

MW-05 is located on Bridge Street near a boat launch/public access to the Charles river, approximately 75 feet east of the riverbank. The well extends 25 feet into coarse glacial deposits as shown on **Plate 1**. There are no public supply wells within 1.75 miles of this monitoring well, as shown in **Plate 2**.

Results from this monitoring well show DTW readings with a 4.33-foot range of drawdown and an average DTW of 9.63 feet; as presented in **Table 5-1**. The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by slightly less than one foot on April 23rd in response to 2.39 inches of precipitation and 1.25 feet on August 8th with 3.18 inches of precipitation. The well also exhibits steady but slightly shallower-sloped increase in response to drier periods. This is evident from the steady ≈1-foot increase between September through mid-October. Drawdown and recovery events from purging the wells during sampling occurred on November 14th.

MW-06 is located adjacent to 6 Centre Street and is sited within an area of mapped coarse glacial deposits (**Plate 1**). The drillers encountered difficulty during installation and refusal was encountered at 25 feet. The final depth to water upon installation was deep at 23 feet. The Colonial Water Company's Knollwood and Picardy Lane Wells are located nearby, approximately 0.5 north and 0.6 miles northeast respectively. Both company's wells however are upgradient with Zone IIs that do not overlap with the monitoring well (**Plate 2**). Additionally, the Picardy Lane well (bedrock) is inactive.

Field notes indicated that the transducer was set approximately 1-foot off the bottom of the well but noted the transducer was coated with mud when extracted for the data download during site visits indicating that the well has been accumulating fine material during the course of the monitoring year. Manual readings did register water level readings during all but the final site visit in November. Additionally, during the November site visit the transducer could not be extracted and was likely held in place by suction in the mud. The monitoring log therefore ends at the July 10th site visit. Inspection of the graph in **Figure 5-2** demonstrates that the well has almost no response to precipitation event with the exception of the April 23rd event which saw a slow decrease in DTW followed by a shallow-sloped increase. Upon extraction and processing of the

July to November (or month when the transducer is retrieved) data, a clearer trend may be established. It is recommended that this well be surged so that the transducer be removed and installed elsewhere.

MW-07B: This well is installed into bedrock 62 feet deep beneath an overburden of coarse glacial deposits (Plate 1). The Colonial Water Company's Knollwood and Picardy Lane Wells are located nearby, approximately 0.5 north and 0.3 miles northeast respectively. Both company's wells however are upgradient, with Zone IIs that do not overlap this monitoring well (Plate 2). Additionally, the Picardy Lane well (bedrock) is inactive. However, there are a number of private wells in this area.

Results show this well has a delayed and slightly muted responses to precipitation events that is to be expected of bedrock wells. Statistics calculated from the DTW readings over the monitoring period along are presented in **Table 5-1** and show MW-7B to have the second largest range water level observed (6.65 ft). The water levels drop over the course of the study period from May through October. The water levels in the well show a diurnal pattern, with the peaks occurring in the early morning and the lowest levels in the mid-morning. This data suggests a response to pumping of a private supply well in the neighborhood.

One group of anomalous readings are shown between May 28th and June 4th where the DTW decreased by 3 feet within an hour time frame. This could indicate a response to interactions with recharge from bedrock fractures. Readings then displayed the typical diurnal variations between May 29th and June 3rd. The DTW then increased within an hour timeframe on June 3rd and resumed a similar level and trend seen prior to the event. This could indicate a response to interactions with recharge from bedrock fractures. Drawdown and recovery events from purging the wells during sampling occurred on November 15th.

MW-09 is 25 feet deep and located within the Town's Caryl Park in an area mapped as coarse glacial deposit (Plate 1). The monitoring well is approximately 700 feet south of the Town of Dover's Caryl Park supply well for the Chickering School. Additionally, the Old Farm Water System's Drilled Well #01 is located approximately 0.25 miles south. However, the two wells may be hydrologically isolated because a reach of the Noanet Brook runs west to east between them.

Results from this monitoring well show atypical DTW readings, as this well shows minimal responses to precipitation events. Water levels over the study period had a 5.56-foot range of drawdown and an average DTW of 17.25 feet; as presented in **Table 5-1**. The beginning of the

monitoring period until May 10th shows some variation but a delayed response to the second largest precipitation event occurring on April 23rd (2.39 inches of rain). From May 11th to October 15th water levels dropped steadily. The largest precipitation event on August 8th with 3.18 inches of rain did not show a spike in the DTW seen by most of the other wells in the study. The unresponsiveness of the well may suggest that a confining layer is present or that or a silt layer is restricting flow through the well screen. Field records from drilling and development indicate the monitoring well was difficult to develop until clear, however the well was redeveloped until clear prior to water sampling in November. The data could also be reflecting drawdown in response to the Caryl Park well pumping. The highest rates of pumping were in May, October, and November.

MW-11 is located on Springdale Ave and is installed to a depth of 25 feet. The well is located within a mapped coarse glacial deposit (Plate 1) and adjacent to an unnamed tributary of Trout Brook. The area surrounding the well was saturated and moist/muddy for the entire monitoring period. MW-11 is 1,500 feet north/northwest of the Colonial Water Company Knollwood Drive well and 1,200 feet from a groundwater discharge location (Plate 2). Also nearby are the Colonial Water Company-owned Springdale Farms Trust wells which are 2,000 feet north (and downgradient). MW-11 lies within the Zone IIs for each of the public wells mentioned above. Also nearby is a property with a wastewater groundwater discharge permit.

Results from this monitoring well show typical DTW readings with a 2.77 foot range of drawdown and an average DTW of 3.89 feet; as presented in **Table 5-1**. The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by slightly less than 0.5 foot on April 23rd in response to 2.39 inches of precipitation and 0.5 feet on August 8th with 3.18 inches of precipitation. The well also exhibits a steady shallower-sloped increase in response to drier periods. This is evident from the steady 0.75 foot increase between September through mid-October. Drawdown and recovery events from purging the wells during sampling occurred on November 15th.

MW-13 is located on Haven Street adjacent to the USGS monitoring station on the Trout Brook. The monitoring well is 1,500 feet north (downstream) of the Colonial Water Company's Springdale Farm wells (Plate 1). Additionally, it is located in the Zone II for Springdale Farm Wells and the Colonial Water Company's Chickering Drive Well located about 0.5 miles northeast.

Results from this monitoring well show DTW readings with a 2.77 foot range of drawdown and an average DTW of 3.89 feet; as presented in **Table 5-1**. The well shows an expected decrease in

DTW following precipitation events although are more muted than other wells as indicated by the DTW range and standard deviation. Responses are most evident following the largest precipitation events where the DTW decreased by slightly less than 0.4-foot on April 23rd in response to 2.39 inches of precipitation and 0.6 feet on August 8th with 3.18-inches of precipitation. The well also exhibits typical and steady shallower-sloped increase in response to drier periods. This is evident from the steady 0.75 foot increase between September through mid-October. The location of this well next to the Trout Brook, a perennial stream is likely responsible for the wells more consistent water level. Drawdown and recovery events from purging the wells during sampling occurred on November 15th.

MW-14 is located along Chickering Drive and is near the boundary of till and coarser post glacial deposits and alluvial deposits (Plate 1). The monitoring well is about 500 feet north and within the Zone II of the Colonial Water System's Chickering Drive well.

Results from this monitoring well indicate a relatively larger range of drawdown (4.84 foot) and an average DTW of 9.32 feet as presented in **Table 5-1.** The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation event where the DTW decreased by slightly less than 0.75 foot on April 23rd in response to 1.5 inches of precipitation and 1.25 feet on August 8th with 3.18 inches of precipitation. The well also exhibits a steady increase in response to drier periods. This is evident from the steady 0.75-foot increase between September through mid-October. The noticeable drop in water level during this time could be due to influence of pumping of the Colonial Water Company's Chickering Drive well but would need to be corroborated with pumping records. Drawdown and recovery events from purging the wells during sampling occurred on November 13th and 18th.

MW-15 is located on the eastern side of Main Street near an intermittent stream that discharges to the Charles River. The well was installed to 20 feet and located in a mapped coarse glacial deposit (Plate 1). According to Plate 2, the monitoring well is not within a Zone II, with the Meadowbrook Water Trust wells (near MW-17) about 0.5 miles north. However, there is a large farm on the east side of Main Street which presumably has a private irrigation well.

Results from this monitoring well demonstrate DTW readings with the highest range at 7.77 feet of drawdown and an average DTW of 8.55 feet; as presented in **Table 5-1.** The well shows an expected decrease in DTW following precipitation events. The wells response to events are more exaggerated in this well as evident by the large range and standard deviation. Responses to precipitation events are most evident following the largest precipitation event where the DTW

decreased by slightly less than 0.75 foot on April 23rd in response to 2.25 inches of precipitation and 1.25 feet on August 8th with 3.18 inches of precipitation. The well also exhibits an increase in response to smaller and less frequent precipitation event. This is evident from the steady 0.75 foot increase between September through mid-October. Drawdown and recovery events from purging the wells during sampling occurred on November 12th.

MW-16 is located on Dedham Street and is a total of 25 ft deep. The monitoring well is installed adjacent to wetlands and the Powissett Brook which discharges to the Charles River about ¼ mile north (Plate 1). The geology in this area is not mapped but would be expected to consist of floodplain alluvium. There are no public supply wells or Zone IIs within 1 mile of the Well.

Results from this monitoring well show typical DTW readings with a 4.44 foot range of drawdown and an average DTW of 6.18 feet; as presented in **Table 5-1**. The well shows an expected decrease in DTW following precipitation events. These are most evident following the two largest precipitation events where the DTW decreased by 1.0 foot on April 23rd in response to 2.25 inches of precipitation and 1.0 feet on August 8th with 3.18 inches of precipitation. The well also exhibits typical increase in response to drier periods. This is evident from the steady 1.0 foot increase between September through mid-October. Drawdown and recovery events from purging the wells during sampling occurred on November 13th.

MW-17 and 17b is one monitoring well with multiple transducers. The well is located along Brook Road in a grassy flat area and is drilled to a depth of 25 feet. Plate 1 shows that the well is installed in an area that is mapped coarse glacial deposits less than ¼ mile from the Charles River. MW-17 is located in the Zone II of the Needham supply wells on the opposite side of the Charles River. MW-17 is adjacent to an inactive well formerly operated by Meadowbrook Farms Trust. This area is now served by the Natick Water Department.

Results from MW-17 show atypical DTW readings. Inspection of the results in July and speaking with Onset personnel (the transducer supplier) suggested there was a possible transducer malfunction. The supplier recommended continued monitoring through the original transducer and installation of a secondary transducer – MW-17b with in the same well to confirm results. Kleinfelder personnel installed MW-17b into the monitoring well slightly above the original transducer. The MW-17b transducer was installed on August 30th with an initial DTW reading of 7.2 feet from TOC. Both transducers monitored DTW levels between August 30th and November 25th. Upon completion of the monitoring period, both transducers for MW-17 and MW-17b were reset and reinstalled in the monitoring well according to the extended monitoring setup in **Section**

0. Due to the differences in starting times and water levels, the DTW levels are offset from each other. Comparison of the statistics reveals that the monitoring of MW-17b show a wider variation in results, with an increased range (2.76 feet) and standard deviation (0.59 feet); basic statistics and manual DTW readings during site visits and installation are provided in **Table 5-1.**

As shown, MW-17 readings between February 20th and August 30th are highly variable and do not demonstrate any correlation to precipitation. Additionally, the readings also do not show any similarity to any of the other monitoring wells. Starting on August 30th through October 28th the MW-17 and MW-17b both demonstrate the same trends as well as a typical response to precipitation with a 1.25 foot increase in DTW. Following October 28th, the two transducer readings diverge, with MW-17 resuming the erratic readings similar to the beginning period. MW-17b demonstrates readings more similar to the other monitoring wells suggesting that this transducer's readings more accurately describe the DTW in the well.

Analysis of daily data shows diurnal patterns with the highest water levels occurring in the early morning, and drawdowns in the morning and evening hours. This is consistent with typical residential water usage and may be an indication of interference from nearby wells. Also, the 2-foot drop in water levels between September to October drop is significant in comparison to other monitoring wells. More data from the MW-17b transducer data will provide more insight into whether a discernable trend between daily and seasonal trends support this. Drawdown and recovery events from purging the wells during sampling occurred on November 18th.

5.2 PIEZOMETERS AND STREAM GAUGE RESULTS

Piezometers installed in local streams with attached stream gauge transducers were monitored between March 20th, and November 25th, 2019. The results of the stream gauge transducers along with the USGS Trout Brook Stream Gauge and precipitation data over the study period are shown together below for comparison in **Figure 5-3.**

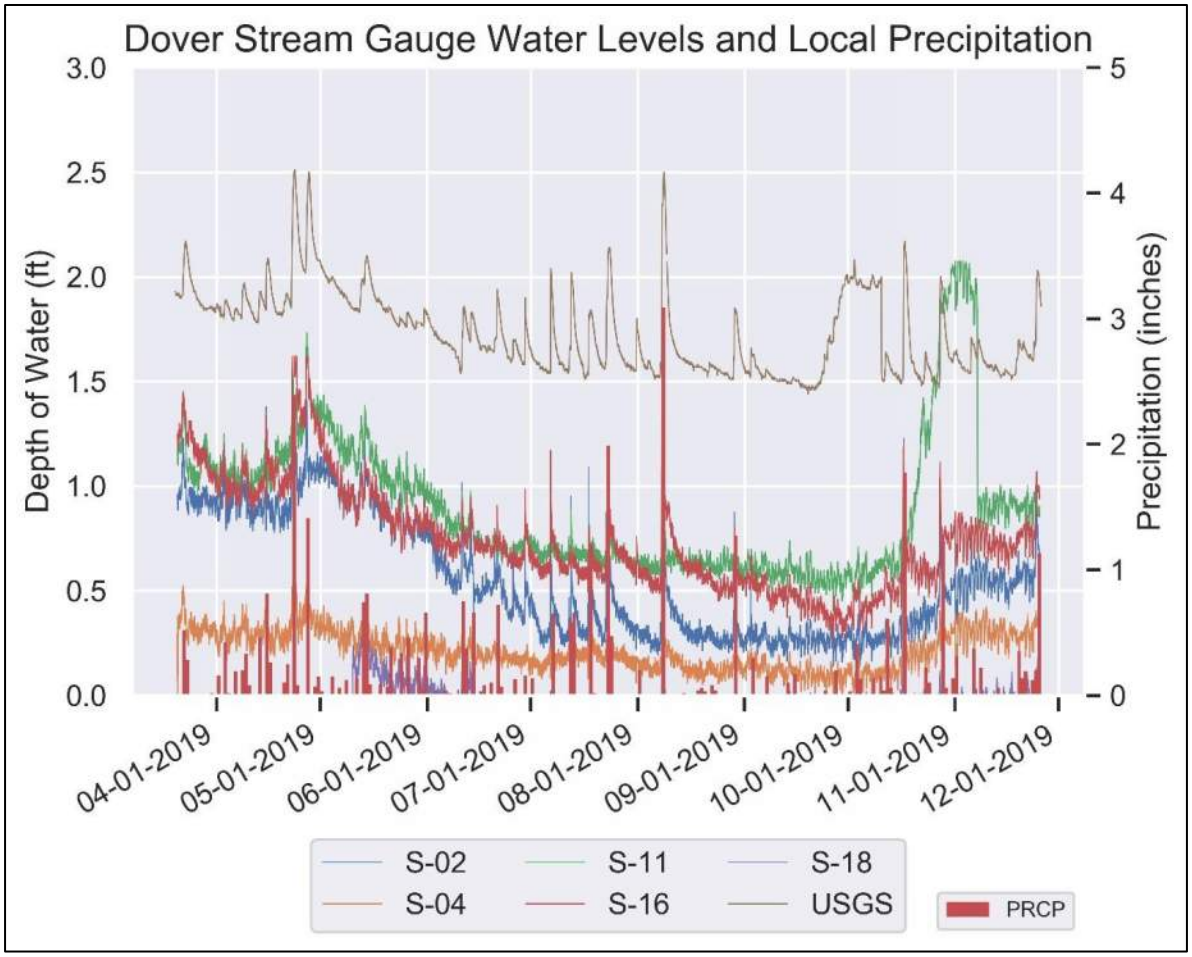
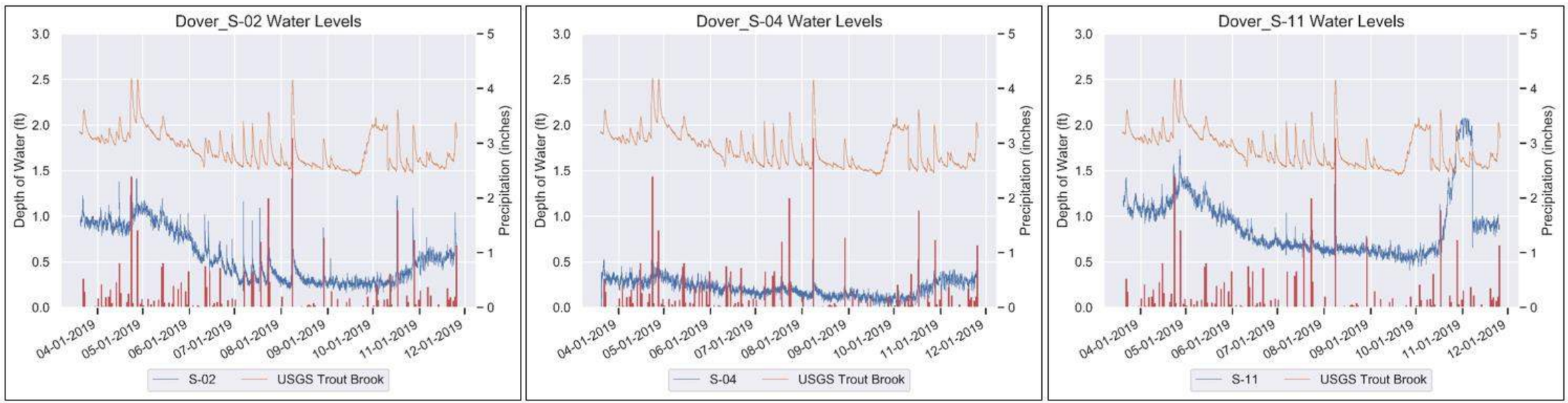


Figure 5-3: Depth of Water at Dover Stream Gauges and USGS Trout Brook Gauge with Local Precipitation Data

Individual stream gauge plots are shown below in **Figure 5-4**. Trends from all the gauges generally correlate to the USGS Trout Brook Gauge as well displaying responsiveness to precipitation events. Some gauges do show anomalous readings that are further described below

Figure 5-4: Depth of Water at Stream Gauge Transducers and USGS Trout Brook with Precipitation



Manual readings are presented in tables for each Piezometer (PZ) with measurements taken according to the diagram in **Figure 4-1**. All manual measurements are presented as positive numbers, but it should be noted that the Inside PZ/Outside PZ measurements are from the TOC down to the waterlevel, and the Depth of Water measurements are from the streambed up to the water level.

From the Inside PZ and Outside PZ measurements, the stream can be determined to be either gaining or losing water from communication with the groundwater as follows. In a gaining stream the stream is being fed groundwater that sustains flow while the groundwater table is higher than that of the stream. In relation to the piezometer measurements, the Inside PZ height (groundwater level) will be higher that the Outside PZ height (stream water level). In a losing stream, the opposite is true and the groundwater table is below the streambed resulting in the stream losing water as it drains into the subsurface. This is typically seen in intermittent or ephemeral streams that exist during periods of high precipitation or during snow melt, but disappear in drier months. In losing streams, piezometer measurements Inside PZ height (groundwater level) is lower than that of the Outside PZ height (stream water level).

Summary plots are constructed for each site with both a stream gauge and monitoring well. This allows for the comparison of surface water and groundwater interatcition. Precipitation is also presented for reference. Additionally, the losing/gaining status shown in Manual Readings table for each piezometer is also depicted on the summary plots as shaded regions on the stream gauge trace; with red representing losing, and green as gaining.

PZ-2 & SG-02: This stream gauge and piezometer are in a section of Tubwreck Brook approximately 75 feet west of MW-02. It is installed in a narrow channelized rocky streambed that transects a local wetland that is approximately 0.25-miles south of an unnamed pond that serves as the headwaters for the brook. The area is mostly rural with forested lots surrounding the brook with some small farms immediately adjacent to the unnamed pond upstream.

Results from the stream gauge transducer are plotted in **Figure 5-4** along with the USGS Trout Brook stream gauge and local precipitation. Results demonstrate typical responses to precipitation and closely follow the trends observed in the Trout Brook. Statistics from the transducer logs provided in **Table 5-2** indicates an average depth of water of 0.55 feet with a range of 1.27 feet. Manual readings of Depth of Water (ft) from the piezometers presented in **Table 5-3** generally agree with these statistics.

Table 5-2: SG-02 Monitoring Statistics

	Depth (ft)
Maximum	1.41
Minimum	0.14
Average	0.55
Standard Deviation	0.28
Range	1.27

In addition to presenting manual readings to corroborate the transducer readings, measurement of the depth of water between the outside and inside of the piezometer were used as described above to determine if the stream was losing or gaining water. Transducer readings from the stream gauge do not drop below zero, suggesting the water body is a perennial stream. The status between losing/gaining demonstrates *gaining* in the spring and fall and *losing* during the warmer months.

Table 5-3: Manual Readings from PZ-02

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 15:20	0.96	2.28	6.25	Losing
05/10/2019 11:20	1.01	2.23	2.11	Gaining
06/14/2019 9:25	0.61	2.63	2.25	Gaining
07/10/2019 9:00	0.38	2.86	2.9	Losing
11/25/2019 8:32	0.63	2.61	2.15	Gaining

Figure 5-5 shows the Site 02 summary plots of the stream gauge, monitoring well and local precipitation. Both the stream gauges and monitoring wells demonstrate similar responses to precipitation events.

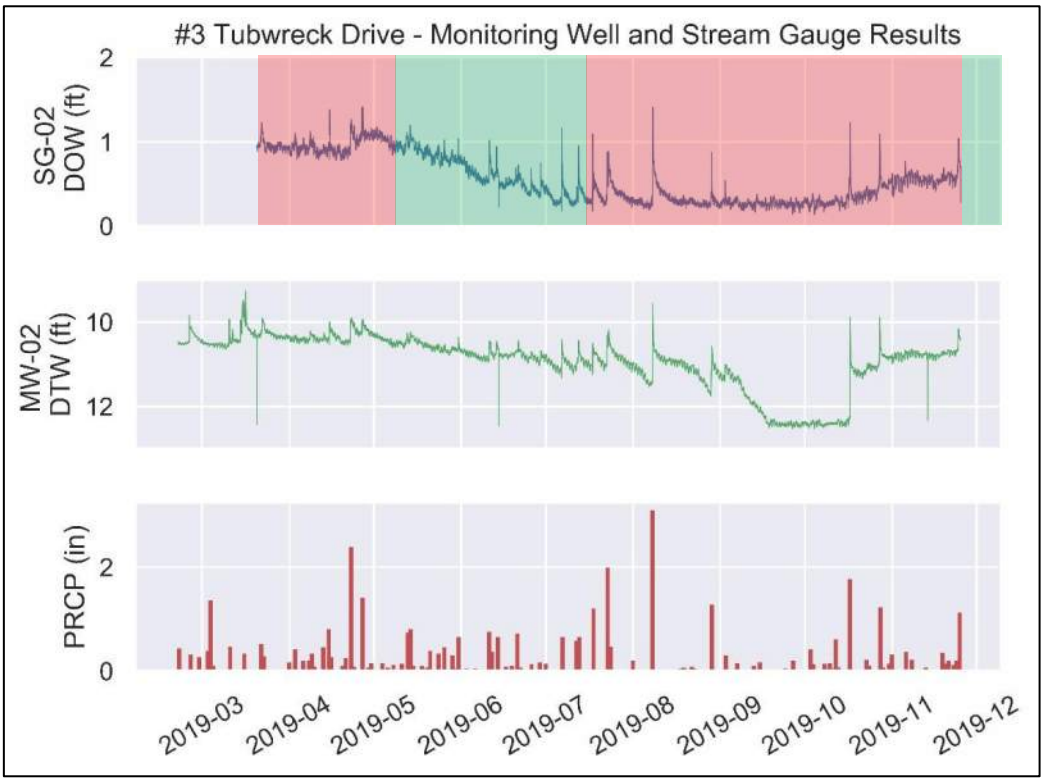


Figure 5-5: Site 02- Stream Gauge and Monitoring Well Results

PZ-4 & SG-04: This stream gauge and piezometer are located just downstream of a pond serving as the headwaters for the North Brook. The pond is surrounded by two to three-acre wooded lots with single family dwellings close to the road; no dwellings are immediately adjacent to the ponds. The pond appears to be manmade as the topography on the eastern side near the outlet resemble a berm with engineered slopes and topped with significantly smaller trees. The outlet of the pond features a manmade spillway and unmaintained control structure. The gauge is installed approximately 50 feet downstream of the pond's outlet control structure into a mostly sandy streambed. The stream immediately downstream of the control structure is naturally channelized with sides one to two feet in height and flows eastward, with the topography flattening and discharging to wetlands with a defined stream course. The monitoring well is installed immediately adjacent to Grand Hill Road and along an ephemeral watercourse and culvert that is approximately 550 feet due north of the SG/PZ.

Results from the stream gauge transducer are plotted in **Figure 5-4** along with the USGS Trout Brook stream gauge and local precipitation. Results demonstrate typical responses to precipitation and closely follow trends observed in the Trout Brook. Statistics from the transducer logs provided in **Table 5-4** indicates an average depth of water of 0.21 feet with a range of 0.53

feet. Manual readings of *Depth of Water (ft)* from the piezometers presented in **Table 5-5** generally agree with these statistics.

Table 5-4: SG-04 Monitoring Statistics

	Depth (ft)
Maximum	0.53
Minimum	0.00
Average	0.21
Standard Deviation	0.09
Range	0.53

In late September/early October, the driest period of the year, it appears that the stream ran dry as the minimum readings recorded by the transducer reached 0 feet. This suggests that the surface water from the pond may have fallen below the outlet structure. The status between losing/gaining demonstrates *gaining* in the spring and fall and *losing* during the summer months as early as the June manual reading.

Table 5-5: Manual Readings from PZ-04

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DOW (ft)	Inside PZ DOW (ft)	Hydrologic Status
03/20/2019 12:19	0.29	5.09	5.58	Losing
05/10/2019 12:19	0.22	5.16	4.98	Gaining
06/14/2019 11:00	0.38	5	5	Losing
07/10/2019 11:36	0.18	5.2	5.27	Losing
11/25/2019 10:10	0.33	5.05	4.9	Gaining

Figure 5-6 shows the summary plots of the stream gauge, monitoring well and local precipitation. Both the stream gauges and monitoring wells demonstrate similar responses to precipitation events, as well as declining water levels in both between June through mid-October. These trends between the MW and SG/PZ generally agree with the gaining/losing status of the SG/PZ.

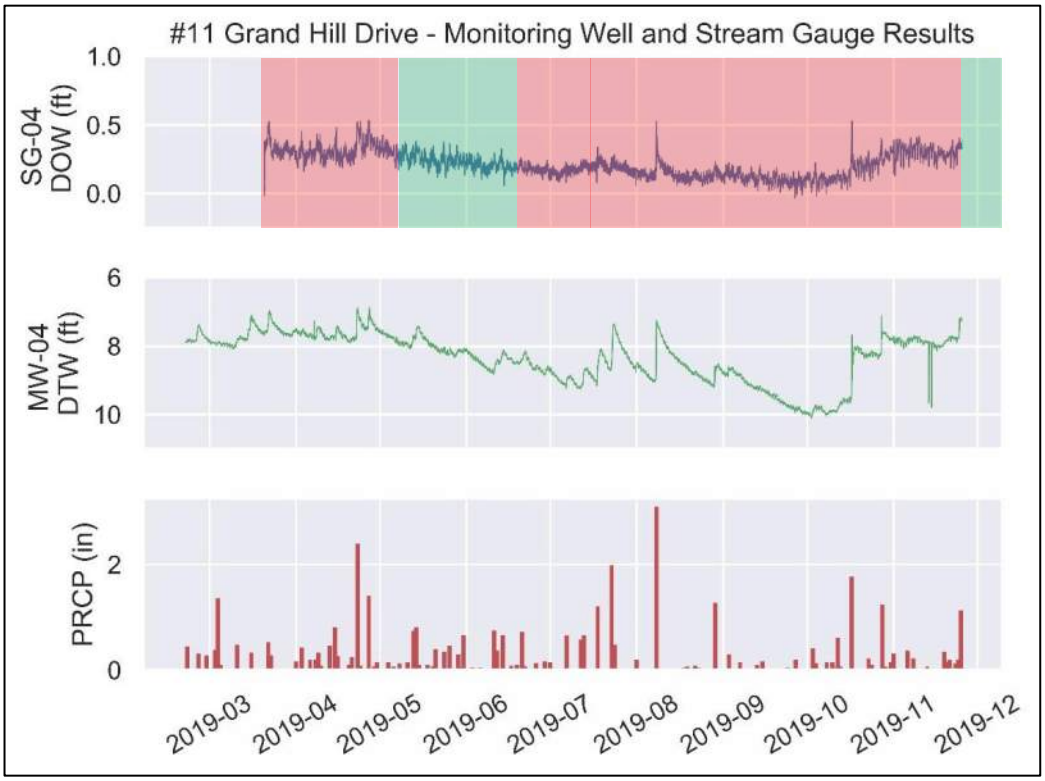


Figure 5-6: Site 04 – Stream Gauge and Monitoring Well Results

PZ-11 & SG-11: This stream gauge and piezometer is installed in the middle of an unnamed brook approximately 25 feet south (upstream) of the culvert that transects Springdale Ave. The brook flows north and discharges into the Trout Brook near Channing Park approximately 1000 feet northwest of the gauge. Mapping resources indicate a series of small water bodies and connecting ephemeral streams and watercourses that ultimately drain to and collect at this gauge's location. The contributing catchment is mostly rural consisting of mostly wooded lots and pasture/fields with single family dwellings and secondary structures such as barns.

Results from the stream gauge transducer are plotted in **Figure 5-4** along with the USGS Trout Brook stream gauge and local precipitation. Results demonstrate typical responses to precipitation and closely follow trends observed in the Trout Brook. Statistics from the transducer logs provided in **Table 5-6** indicates an average depth of water of 0.89 feet with a range of 1.67 feet. Manual readings of Depth of Water (ft) from the piezometers presented in **Table 5-7** generally agree with these statistics.

Table 5-6: SG-11 Monitoring Statistics

	Depth (ft)
Maximum	2.08
Minimum	0.41
Average	0.89
Standard Deviation	0.33
Range	1.67

In contrast with other locations, this stream location is *losing* in the spring and gain*ing* during the warmer months as early as the June manual reading.

Table 5-7: Manual Readings from PZ-11

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 13:22	1.17	1.07	4.32	Losing
05/10/2019 13:22	1.08	1.156	1.19	Losing
06/14/2019 14:45	0.34	1.9	1.52	Gaining
07/10/2019 9:50	0.62*	3.04	2.75	Gaining
11/25/2019 12:40	0.82*	2.85	2.8	Gaining

** Depth is approximate due to muddy and vegetative growth on bottom of stream*

Figure 5-7 shows the Site 11 summary plots of the stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events. The monitoring well demonstrates more exaggerated response to the precipitation events as well as a steady declining water level between June through mid-October. Both the SG/PZ and MW demonstrate a large increase in water levels mid-October through November.

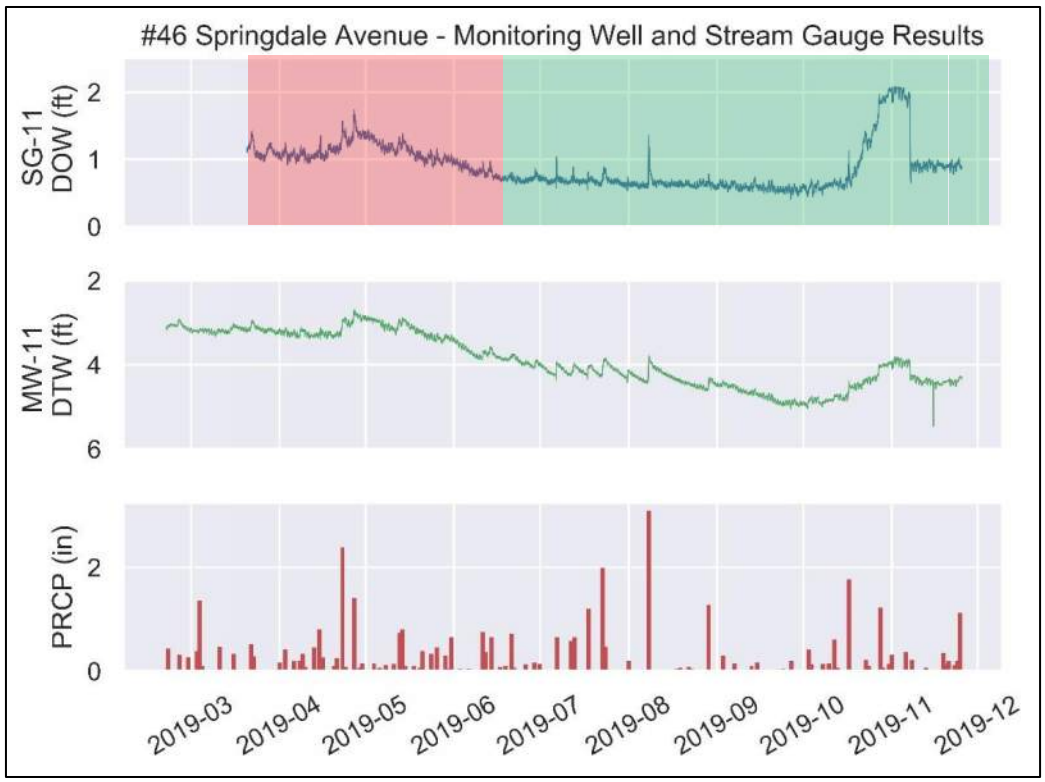


Figure 5-7: Site 11- Stream Gauge and Monitoring Well Results

PZ-13: This piezometer is installed in Trout Brook at the outlet of the culvert for Haven Street. It is immediately adjacent to the USGS Trout Brook stream gauge. The brook flows north and eventually discharges into the Charles River about three quarters of a mile north. The drainage area upstream is approximately 3.72-square miles in size and includes Channing's Pond along with several other unnamed ponds. The contributing catchment is mostly rural consisting of mostly wooded lots and pasture/fields with single family dwellings and secondary structures such as barns.

Results from the stream gauge transducer and the associated monitoring well, MW-13, are plotted in **Figure 5-4** along with local precipitation. Results demonstrate typical responses to precipitation and closely follow trends observed in Trout Brook. Statistics from the transducer logs provided in **Table 5-8** indicates an average depth of water of 1.73 feet with a range of 1.07 feet. Manual readings of *Depth of Water (ft)* from the piezometers presented in **Table 5-9** generally agree with these statistics.

Table 5-8: USGS Trout Brook Stream Gauge Monitoring Statisitcs

	Depth (ft)
Maximum	2.51
Minimum	1.44
Average	1.73
Standard Deviation	0.20
Range	1.07

The status between losing/gaining demonstrates *gaining* in the spring and early summer before switching to *losing* after July. Following the November manual reading, the hydrologic status switches back to *gaining*.

Table 5-9: Manual Readings from PZ-13

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
05/10/2019 8:48	1.09	1.12	0.74	Gaining
06/14/2019 11:50	0.96	1.25	0.93	Gaining
07/10/2019 12:10	1.04	1.17	1.45	Losing
11/25/2019 12:35	1.11	1.1	0.8	Gaining

Figure 5-8 contains the summary plots of the USGS stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events. Both the USGS Trout Brook gauge and MW demonstrate a large increase in water levels mid-September through October. These trends are not observed in SG/PZ-11 as mentioned earlier and vice-versa. Also, the increase in the SG/PZ-11 that occurred in mid-October through November is not reflected in the Trout Brook or PZ-13 readings.

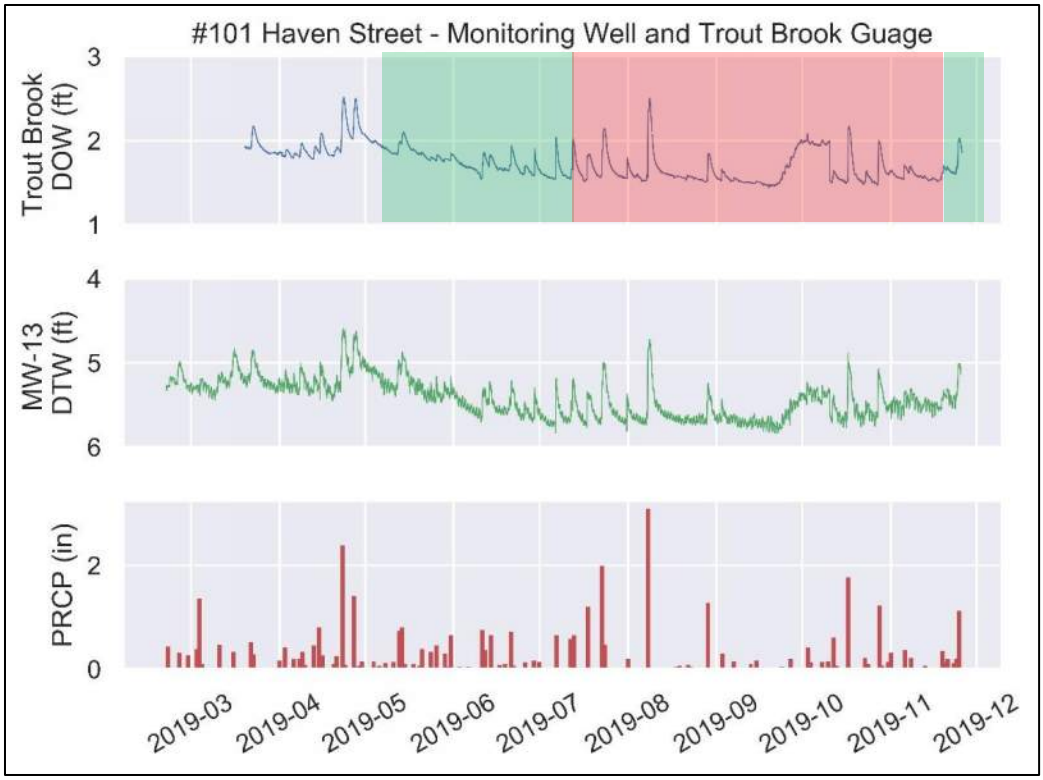


Figure 5-8: Site 13 – USGS Stream Gauge and Monitoring Well Results

PZ-16: This piezometer (SG/PZ) is installed in the Powissett Brook upstream of the culvert under Dedham Street, with the associated monitoring well (MW-16) located approximately 150 feet to the west. The brook flows north discharging to the Charles River about a quarter of a mile north. The drainage area upstream includes a series of wetlands and unnamed ponds with the headwaters originating from Powissett and Nonnet Pond, both of which have control structures (dams). The contributing catchment is mostly rural consisting of wooded lots and forest.

Results from the stream gauge transducer are plotted **Figure 5-4** along with the USGS Trout Brook stream gauge and local precipitation. Results from the stream gauge transducer and the associated monitoring well, MW-16, are plotted in **Figure 5-9**. Results show typical responses to precipitation with the stream gauge demonstrating large peaks following precipitation events. However, this is consistent with its location within the subwatershed and positioning directly up stream of a control structure (culvert) that limits drainage rates. Statistics from the transducer logs provided in **Table 5-10** indicates an average depth of water of 0.74 feet with a ranges of 1.39 feet. Manual readings of *Depth of Water (ft)* from the piezometers presented in **Table 5-11** generally agree with these statistics.

Table 5-10: Monitoring Statistics from SG-16

	Depth (ft)
Maximum	1.62
Minimum	0.24
Average	0.74
Standard Deviation	0.24
Range	1.39

The status between losing/gaining demonstrates *gaining* in the spring and early summer before switching to *losing* after July, Following the November manual reading, the hydrologic status switches back to *gaining*.

Table 5-11: Manual Readings from PZ-16

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 13:46	1.25	4.11	7.45	Losing
05/10/2019 13:46	0.88	4.48	4.37	Gaining
06/14/2019 14:14	0.76	4.6	4.5	Gaining
07/10/2019 13:00	0.74	4.62	4.83	Losing
11/25/2019 11:50	0.91	4.45	4.35	Gaining

Figure 5-9 below contains the summary plots of the USGS stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events.

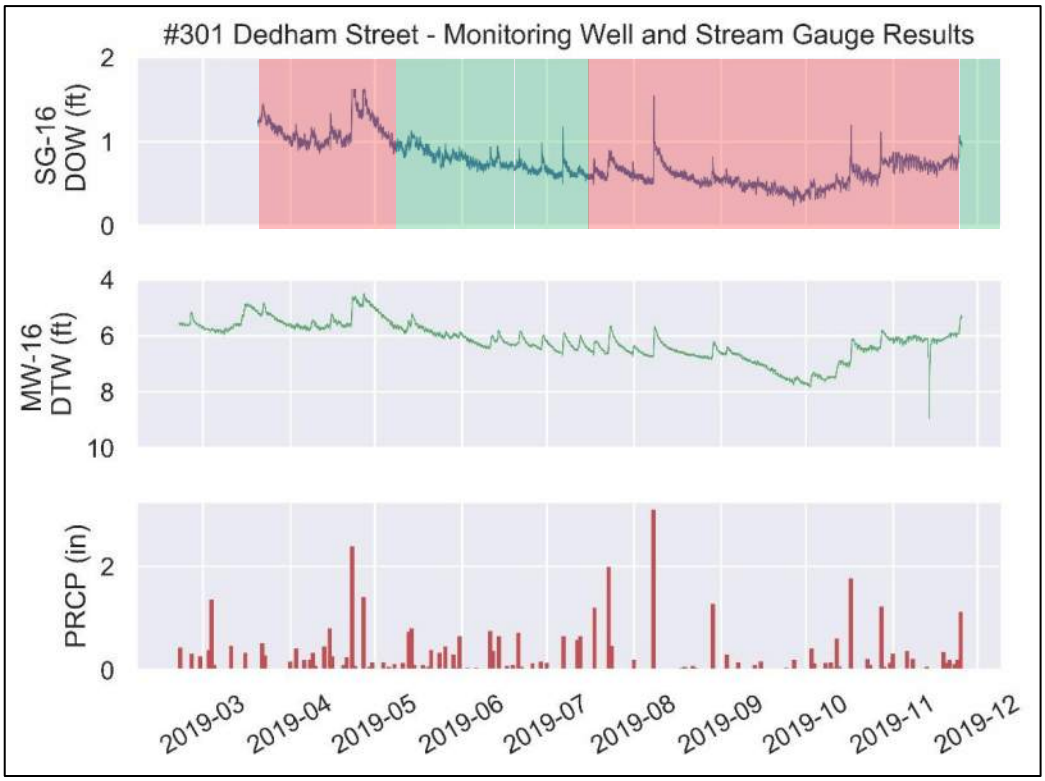


Figure 5-9: Site 16 – Stream Gauge and Monitoring Well Results

PZ-18: This piezometer is installed in an unnamed brook upstream near #4A Valley Road. The brook flows north in the same brook and corridor as SG/PZ and MW-11. Upstream of the gauge is a series of unnamed ponds and connecting ephemeral streams and watercourses. The contributing catchment is mostly rural consisting of wooded lots and pasture/fields with single family dwellings and secondary structures such as barns.

Results from the stream gauge transducer are plotted **Figure 5-4** along with the USGS Trout Brook stream gauge and local precipitation. This site does not have a co-located monitoring well. It appears that the flow is intermittent, and water is not always in the channel at a depth that the stream gauge is capable of reading. Of the results visible, they generally demonstrate typical responses to precipitation and follow trends observed in the Trout Brook. Statistics from the transducer logs provided in **Table 5-12** indicates an average depth of water of 0.02 feet and a range of 0.34 feet which are skewed due to the abundance of null readings (water level too low to measure). Manual readings of Depth of Water (ft) from the piezometers presented in **Table 5-13** generally do demonstrate significantly low readings.

Table 5-12: SG-18 Monitoring Statistics

	Depth (ft)
Maximum	0.34
Minimum	0.00
Average	0.02
Standard Deviation	0.04
Range	0.34

The status of the brook demonstrates a consistent *losing* status over the entire monitoring period. This and the known location in the sub-watershed confirm that this area as a headwater and ephemeral stream that contributes flows following precipitation events to SG/PZ-11 and eventually the Trout Brook and Charles River.

Table 5-13: Manual Readings from PZ-18

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
05/10/2019 10:04	0.20	2.7	4.87	Losing
06/14/2019 9:51	0.20	2.7	5.2	Losing
07/10/2019 10:31	0.01	3.2	5.5	Losing
11/25/2019 9:04	0.38	2.52	2.6	Losing

6 GROUNDWATER QUALITY

6.1 GROUNDWATER SAMPLING

Kleinfelder personnel conducted water quality sampling of thirteen of the fourteen monitoring wells between November 13th and 15th, 2019. Well MW-6 was planned for sampling, but was dry at the time of sampling, as described in Section 5. Personnel used the EPA Low-flow sampling technique to purge approximately four well volumes prior to sampling. All wells were analyzed for pH, manganese, sodium, chloride, nitrate and nitrite, and volatile organic compounds (VOCs). A minimum of one field blank per day was collected and trip blanks accompanied all sample shipments. Field sampling data sheets are provided in Appendix E. Laboratory analytical reports are provided in Appendix F.

6.2 GROUNDWATER SAMPLING RESULTS

The sampling results are presented below in **Table 6-1:**

Table 6-1: Water Quality Results from Monitoring Well Sampling November 13 – 15, 2019

Well ID#		MW-1	MW-2	MW-3	MW-4	MW-5	MW-7B
Well Location		Hunter's Path	Tubwreck Dr.	Snow's Hill Rd	Grand Hill Rd	Bridge St	Ben Arthur's Way
Lab Work Order #	---	19K0918-01	19K0914-01	19K0912-01	19K0913-01	19K0907-01	19K0933-01
Sampling Date	---	11/13/19	11/13/19	11/13/19	11/14/19	11/14/19	11/15/19
Analysis Parameter	Unit						
pH	s.u.	5.7	5.6	5.7	5.7	5.8	5.5
Manganese	mg/L	0.3	0.1	ND	0.34	0.24	0.11
Sodium	mg/L	97	70	26	110	58	65
Chloride	mg/L	170	100	58	140	160	110
Nitrate as N	mg/L	2.06	0.26	6.69	3.05	ND	0.66
Nitrite as N	mg/L	ND	ND	ND	0.017	ND	ND
VOCs	ug/L	ND	ND	ND	ND	ND	ND

ND: Not detected

Table 6-1 (continued): Water Quality Results from Monitoring Well Sampling

November 13 – 15, 2019

Well ID#		MW-9	MW-11	MW-13	MW-14	MW-15	MW-16	MW-17
Well Location		Caryl Park	Springdale Ave.	Haven St.	Chickering Dr.	Main St.	Dedham St.	Brook St.
Lab Work Order #	---	19K0936-01	19K0935-01	19K0856-01	19K1087-01	19K0857-01	19K0912-01	19K1086-01
Sampling Date	---	11/15/19	11/15/19	11/12/19	11/18/19	11/12/19	11/13/19	11/18/19
Analysis Parameter	Unit							
pH	s.u.	5.6	6.6	6.3	6.2	5.4	6.7	6
Manganese	mg/L	0	0.12	0.03	1.3	0.083	3.2	ND
Sodium	mg/L	5	17	76	27	290	7.9	59
Chloride	mg/L	ND	52	190	110	480	23	85
Nitrate as N	mg/L	ND	1.5	4.2	0.18	1.1	ND	4.8
Nitrite as N	mg/L	ND	ND	ND	ND	ND	0.025	ND
VOCs	ug/L	ND	ND	ND	ND	ND	ND	ND

ND: Not detected

pH – All the wells have fairly low pH between 5.4 and 6.7 s.u. These values are similar to the field measured pH. Lower pH represents acidic groundwater which is typically found across Massachusetts and New England. If the wells were to be used as a public drinking water supply, pH adjustment would be needed to decrease the potential corrosion impacts on distribution system components.

Manganese – All wells with exception of MW-03, MW-09 and MW-17 exhibit manganese concentrations that exceed the Federal and Massachusetts secondary maximum contaminant level (SMCL) of 0.05 mg/L; with MW-01, MW-4, and MW-14 exceeding the health advisory (HA) or Office of Research and Standards (ORSG) concentration of 0.3 mg/L. Manganese is considered an essential nutrient, however, prolonged exposure to levels over the Mass ORSG could lead to adverse health effects. Higher concentrations of manganese are typically found in overburden groundwater across Massachusetts and New England, so these results are not necessarily an indication of threats to the aquifer. However, manganese can increase in relation to changes in the oxidative state of the aquifer. This could result from significant land use changes, for example, from clearing of forested land, or from increased flooding due to beaver activity or other factors. From a treatment perspective, excessive concentrations of manganese lead to a degradation in water quality aesthetics. Manganese can precipitate out of the solution to form a black solid that can leave stains on toilets and sinks or on laundry. Many public water systems

have installed filtration systems to remove elevated levels of manganese. This is typically less of a problem in bedrock wells.

Sodium and Chloride – Most of the monitoring wells had elevated levels of sodium and / or chloride, suggesting contamination from heavy use of road de-icing salt. Ten of the 13 wells tested have sodium levels above the ORSG guidance level of 20 mg/L. The Main St. well, MW-15, had the highest values, with sodium of 290 mg/L and a level of chloride (480 mg/L) almost double the ORSG of 250 mg/L. Elevated concentrations of chlorides contribute to water corrosivity as they are a primary driver of corrosion. In drinking water wells this could lead to mobilization of lead and copper in service lines and plumbing fixtures. Elevated sodium can be a health concern for consumers on low sodium diets.

Nitrate and Nitrite - Nitrate was detected in all but two wells. All nitrate detections were below the federal and MassDEP maximum contaminant level (MCL) standard of 10 mg/L. MW-01, MW-03, MW-04, MW-11, MW-17 all have nitrate concentrations above 1 mg/L which indicates that groundwater may be influenced by septic tank discharge or other nutrient sources such as fertilizers. MW-3 had the highest level (6.69 mg/L). Nitrite was detected at low levels (less than 0.1 mg/L) in only two wells: MW-4 and MW-16.

Volatile Organic Compounds (VOCs) - VOCs are a group of organic compounds typically found in industrial applications, manufacturing, and petroleum products (gas stations). The presence of any of these compounds typically indicates some type of groundwater contamination by which a source(s) can be determined through hydrogeological studies. No VOCs were detected in any of the monitoring wells.

7 DISCUSSION AND RECOMMENDATIONS

7.1 GROUNDWATER AND STREAMFLOW TRENDS

The monitoring network installed in this project included 14 monitoring wells, six piezometers, and five stream gauges. These along with the two USGS stream gauges and monitoring wells were used to establish baseline trends over the course of the 278-day study between February 20th, 2019 and November 25th, 2019.

General seasonal trends were reflected in most of the monitoring wells consistent with the USGS wells showing an increase in the water table elevation during the cooler months and a decrease following the summer, particularly during September and October. This is consistent with regional trends as well as climate impacts such as precipitation. Stream gauges also followed these general trends with higher water levels in the cooler months and lower levels in the warmer months.

Both the monitoring wells and stream gauges were directly impacted by precipitation events. Almost all transducers saw increases in water levels directly following precipitation events. Additionally, in periods of little precipitation, all transducers saw slow decrease in water levels, as evident in the drier September to mid-October period. Several monitoring wells had relatively higher summer drawdowns (MW-15, MW-14, MW-9, and MW-7B) which could potentially be related to the pumping of nearby public or private supply wells. In order to establish if any of the PWSs wells are directly influencing any of the monitoring wells, a more detailed study would have to be performed.

Investigation into the local public water systems did provide evidence of seasonal water usage trends that are exactly opposite of natural water levels. That is, highest usage in the warmer months with peaks in July through September, during the time of year that groundwater levels are most vulnerable. Strikingly, data for all public water supplier community wells in Dover show that residential usage exceeds Massachusetts Conservation standard of 65 RGPCD, in some cases by more than double. In addition, the largest supplier in Dover has exceeded its withdrawal allocation permitted by the state in 7 of the past 9 years for which data were reviewed.

7.2 WATER QUALITY RESULTS INTERPRETATION

Overall the general water quality across all monitoring wells was fair. If a monitoring well site were to be further developed into a public water supply well, treatment would need to be considered. Generally, all the wells had low pH but none that were atypical of wells seen in the region. Low pH levels observed can potentially corrode piping or plumbing fixtures and public water systems are required to implement corrosion control measures at the levels observed. All the monitoring wells had elevated levels of manganese, which is naturally occurring and also typical of the region. Treatment to remove manganese may need to be considered for potable use. Both pH and manganese levels are mostly influenced by the local geologic/overburden material and hydrogeologic conditions.

The Town does not have a local wastewater treatment plant and sewage is treated onsite via septic systems. Nitrate levels over 1 mg/L, suggest that septic discharge may be influencing local levels, although detected levels were still well below the drinking water standard of 10 mg/L. Monitoring wells that tested with these higher levels (MW-01, MW-03, MW-04, MW-17) were adjacent to residential communities. One monitoring well (MW-3 on Snow's Hill Road) had nitrate in excess of the Dover Board of Health Well Regulation limit of 5 mg/L.

Many of the wells also had elevated levels of sodium and chlorides indicating that road de-icing salt is negatively impacting water quality. The Board of Health is also aware of private wells, particularly along Haven and Dedham Streets, experiencing very high sodium. The Town may wish to consider alternative de-icing methods and/or products that can reduce sodium loading to groundwater. Some communities in New England are using pre-treatment with brine to provide up to 30% reduction in salt application. Alternatively, newer products which incorporate grain or sugar byproducts are being employed in nearby Massachusetts Towns[1].

[1] https://umtcresearch.wordpress.com/2018/05/03/beets-for-roadway-deicing/

7.3 WATER USE PRACTICES - IMPLICATIONS AND STRATEGIES

7.3.1 Implications of Over-Pumping

Groundwater recharge areas for public water supply wells (designated by MassDEP as 'Zone II's), which are protected from certain incompatible land uses, are established based on approved pumping rates listed in PWS Water Management Act withdrawal permits. Pumping that significantly exceeds those permit limits has the potential to negatively impact water availability in Dover aquifers, and to mobilize contamination sources, particularly during droughts such as the significant drought of 2016. Excessive seasonal non-essential outdoor water use is of particular concern- both by PWS pumping from wells within in Dover, but also potentially by private residential or commercial well owners. The enforcement of non-essential outdoor water use restrictions is the best strategy for preventing excessive aquifer drawdown during summer when groundwater supplies, as well as streams and wetlands, are more vulnerable.

7.3.2 Enforcement of Restrictions

One strategy for preventing negative impacts of excessive groundwater use is through enforcement of existing regulations and restrictions, or by establishing new regulations. Community water systems such as Colonial Water Company are authorized to withdraw water by a Water Management Act Permit (Appendix C) which includes several conditions which are imposed in order to protect aquifers, rivers and streams. The Permit has limitations on annual pumping (as a daily average), individual well pumping rates, residential usage, allowable water loss (unaccounted for water), and seasonal water use. Based on recent water usage records, Colonial Water should be implementing a conservation program, imposing seasonal or streamflow-based restrictions, and implementing a volumetric offsets plan. The Water Management Act Regulations, 310 CMR 36.43, authorizes MassDEP to issue a full range of legal actions, including fines, administrative orders and penalties, at a minimum. The Dover Board of Health has discussed this with the MassDEP, however to date, the MassDEP has taken no action to enforce Colonial Water's WMA Permit Conditions. Water conservation program techniques are briefly described in Section 7.3.3.

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) recently published an updated Massachusetts Drought Management Plan (the DMP)[2]. The DMP encourages local authorities to engage in proactive drought management planning, beginning with the adoption of an Outdoor Water Use Bylaw. The Dover Board of Health is reviewing the EEA Model Outdoor Water Use Bylaw and evaluating the benefits.

7.3.3 Water Conservation Program

Water Conservation Programs are required to be implemented by WMA Permit holders. There are many different techniques that can be utilized; the most effective typically include a robust public outreach and education component. MassDEP has recently conducted pilot programs in several communities and has developed useful tools for water suppliers to adopt or modify to their specific needs. The MassDEP's summer outdoor water use pilot program was found to be effective through the use of outreach materials. Communities have included the Towns of Concord, Ipswich, Wenham, Hingham, Westford, and others. More information is available at the following links:

Pilot Program Description:

- https://www.mass.gov/doc/water-conservation-pilot-program-lawn-watering-reduction-2018-2-page-flyer/download

Healthy Lawn, Happy Summer Toolkit:

- https://www.mass.gov/forms/healthy-lawn-happy-summer-toolkit

7.3.4 Alternative Water Sources

As described earlier, the Town's Church Street Well was contaminated by a fuel spill at the Mobil gas station in 1986 and subsequently abandoned. If Dover were to consider expanding its distribution system and connecting to an additional water source, it would need to look to neighboring communities. As described in Section 2.3, the Town of Natick Elm Bank Wells are located within the Town of Dover and provide a majority of the water supply to the Town of Natick. The towns of Natick, Dover, Wellesley, and Needham under an Agreement (December 1985) between the towns and then an Act of the Legislature (Acts of 1986, Ch. 624) hold a right restricted

[2] *https://www.mass.gov/doc/massachusetts-drought-management-plan/download*

to those towns to access the Charles River aquifer at Elm Bank for the purposes of pumping water for public domestic use. Only Natick currently does this, subject to an agreement with Dover. If Dover should, in the future, require the use of Charles River water, it has the legal right to use water drawn at Elm Bank.

The other neighboring communities that would be most likely to have enough water to sell to Dover would be those that have a connection to the Massachusetts Water Resources Authority (MWRA). These include Dedham-Westwood Water District, Needham, and Wellesley. However, in order to be admitted to the MWRA, one of the criteria is that no feasible local water supply exists. In Dover's case, the water rights to the Natick Elm Bank source should represent a likely feasible source to expand public water service to Dover residents.

7.4 RECOMMENDATIONS

This project accomplished the establishment of a baseline monitoring network to provide widespread geographic coverage of the Town in relation to areas of potential concern for evaluation of water resources. The network should be maintained so that as data is accumulated, seasonal and annual patterns will begin to emerge to help facilitate the identification of trends to guide decision making.

The following recommended next steps are presented for consideration by the Town of Dover:

1. **Continue monitoring network data collection**: Dover has now invested in a sophisticated monitoring network that is capable of further establishing long term trends of the Town's water resources. The network will need to be maintained in order to continue collection of reliable data. Recommended activities include:
    - Beginning in early Spring 2020, continue routine data collection from each of the water level transducers deployed, as well collecting manual readings at piezometers and stream gauges. Retrieve logger from MW-6 and redeploy in an alternative location. Compile the data into a Monitoring Report annually. Batteries in the transducers may need to be replaced in about 4 years.
2. **Comparison Study with 2019 Public Water Supplier Annual Statistical Reports (ASR)** – The 2019 ASR will be published by MassDEP in mid to late 2020. Once published, the report can be compared with the transducer trends and continue to refine the seasonal and annual trends for each PWS.

3. **Correlation of daily or monthly pumping records** – In order to further investigate if any PWS wells are significantly influencing water table elevations, pumping logs should be compared with the local monitoring wells to see if any apparent trends exist.

4. **Supplement Monitoring Network Data Gaps:** Supplement monitoring with additional monitoring well installation and water quality testing as follows:

- Installation of an overburden (and / or possibly a bedrock well) at an alternate location near Town center to replace MW-6.
- Water quality testing near high density or large community septic systems, either via existing wells, if available for testing, or installation of new monitoring wells.
- Inclusion of testing of monitoring well network for PFAS.

5. **Explore Partnership with USGS** – As the USGS has a presence in Town with its monitoring gauges, there is potential opportunity to collaborate with researchers to evaluate water resources in the Dover area. It would be beneficial and cost-saving if USGS would allow Dover to install a monitoring transducer and test the water quality in the USGS well.

6. **Explore Implementation of Outdoor Water Use Bylaw, and other strategies for drought management:** With the high rates of summer water use and the high levels of residential per capita use, the Town should consider:

- Adopting water use regulations.
- Assisting Public Water Suppliers with implementing Water Conservation Programs required by WMA Permits. Developing a comprehensive educational outreach program to all Dover households, working with PWSs and the Board of Health, that addresses water usage and quality issues. The MassDEP has grant funding programs that can be utilized.
- Ensuring that Town facilities are using high efficiency plumbing fixtures and water-smart appliances.

PLATES

1. Hydrogeology Map
2. Hydrography and Environmental Map
3. Hydrology Study Monitoring Network
4. Water System Infrastructure

CONCORD RIVER BASIN

CHARLES RIVER BASIN

BOSTON HARBOR

MW-01 MW-02 MW-03 MW-04 MW-05 MW-06 MW-07B MW-09 MW-11 MW-13 MW-14 MW-15 MW-16 MW-17

LEGEND

Private Wells from EEA Database

Work Performed

- Decommission
- Deepen
- Hydrofracture
- All Other Work

Public Water Supplies

- Community Groundwater Source
- Surface Water Intake
- Non-Community Groundwater Source
- Emergency Surface Water

Town of Dover Monitoring Wells

- Town of Dover Monitoring Wells

USGS Stream Gaging Stations

- USGS Stream Gaging Stations

USGS Data Collection Stations

- USGS Data Collection Stations

Dover Boundary

- Dover Boundary

Major Subbasins

- Major Subbasins

Rivers and Streams

- Perennial Stream
- Intermittent Stream

Lakes, Ponds and Wetlands

- Lake or Pond
- Wetland

Shallow Bedrock

- Abundant Outcrop and Shallow Bedrock

Postglacial Deposits

- Artificial Fill

Postglacial Deposits

Type

- Floodplain Alluvium
- Swamp and marsh deposits

Glacial Stratified Deposits

- Coarse
- Glaciolacustrine Fine

Thick Till and Moraine

- Thick Till

Bedrock Outcrops and Thin Till

- Bedrock Outcrop
- Thin Till

N

0 0.125 0.25 0.5 Miles

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FILE NAME:	Plate1 - Hydrogeology 22x34.mxd

PLATE 1
Hydrogeology Map

Dover. MA

FIGURE
1

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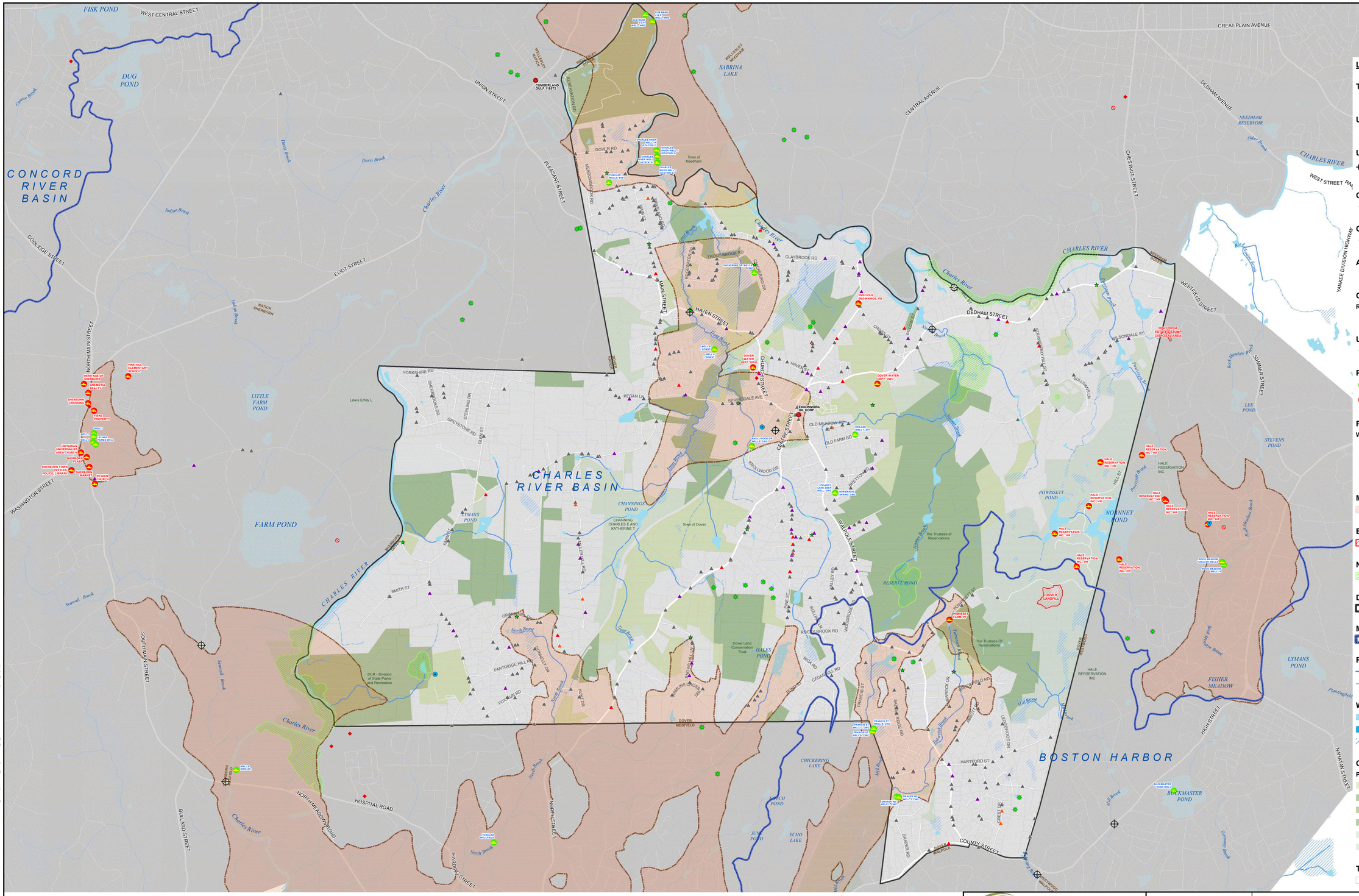

N

0 0.125 0.25 0.5
Miles

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FILE NAME:	Plate2 - Hydrography and Env 22x34.mxd

PLATE 2
Hydrography and Environmental Map

Dover, MA

FIGURE
2

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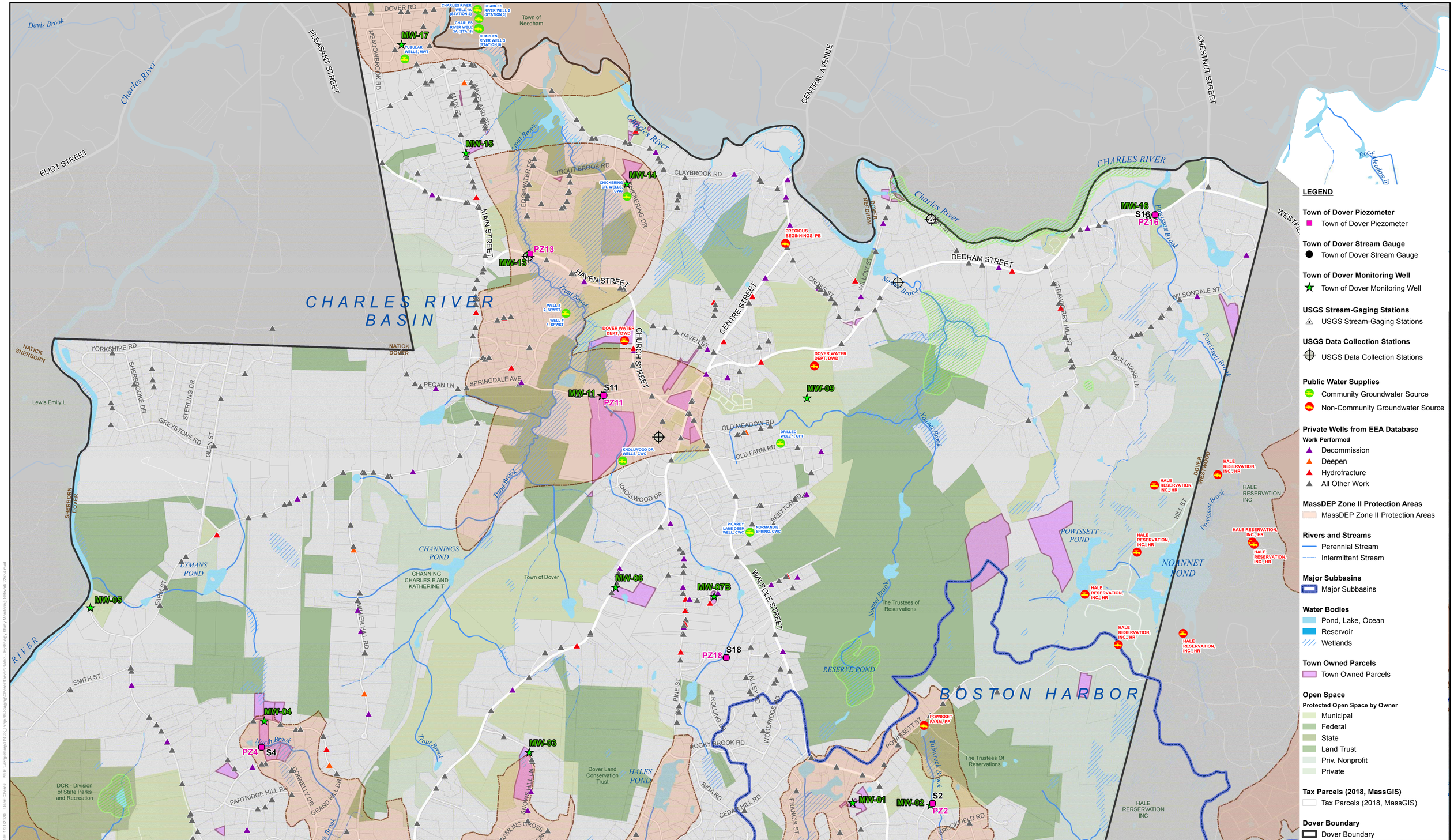

LEGEND

Town of Dover Piezometer
- Town of Dover Piezometer

Town of Dover Stream Gauge
- Town of Dover Stream Gauge

Town of Dover Monitoring Well
- Town of Dover Monitoring Well

USGS Stream-Gaging Stations
- USGS Stream-Gaging Stations

USGS Data Collection Stations
- USGS Data Collection Stations

Public Water Supplies
- Community Groundwater Source
- Non-Community Groundwater Source

Private Wells from EEA Database
Work Performed
- Decommission
- Deepen
- Hydrofracture
- All Other Work

MassDEP Zone II Protection Areas
- MassDEP Zone II Protection Areas

Rivers and Streams
- Perennial Stream
- Intermittent Stream

Major Subbasins
- Major Subbasins

Water Bodies
- Pond, Lake, Ocean
- Reservoir
- Wetlands

Town Owned Parcels
- Town Owned Parcels

Open Space
Protected Open Space by Owner
- Municipal
- Federal
- State
- Land Trust
- Priv. Nonprofit
- Private

Tax Parcels (2018, MassGIS)
- Tax Parcels (2018, MassGIS)

Dover Boundary
- Dover Boundary

0 0.1 0.2 0.4 Miles

N

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Plate3 - Hydrology Study Monitoring Network 22x34.mxd

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FILE NAME:	

PLATE 3
Hydrology Study Monitoring Network

Dover, MA

FIGURE 3

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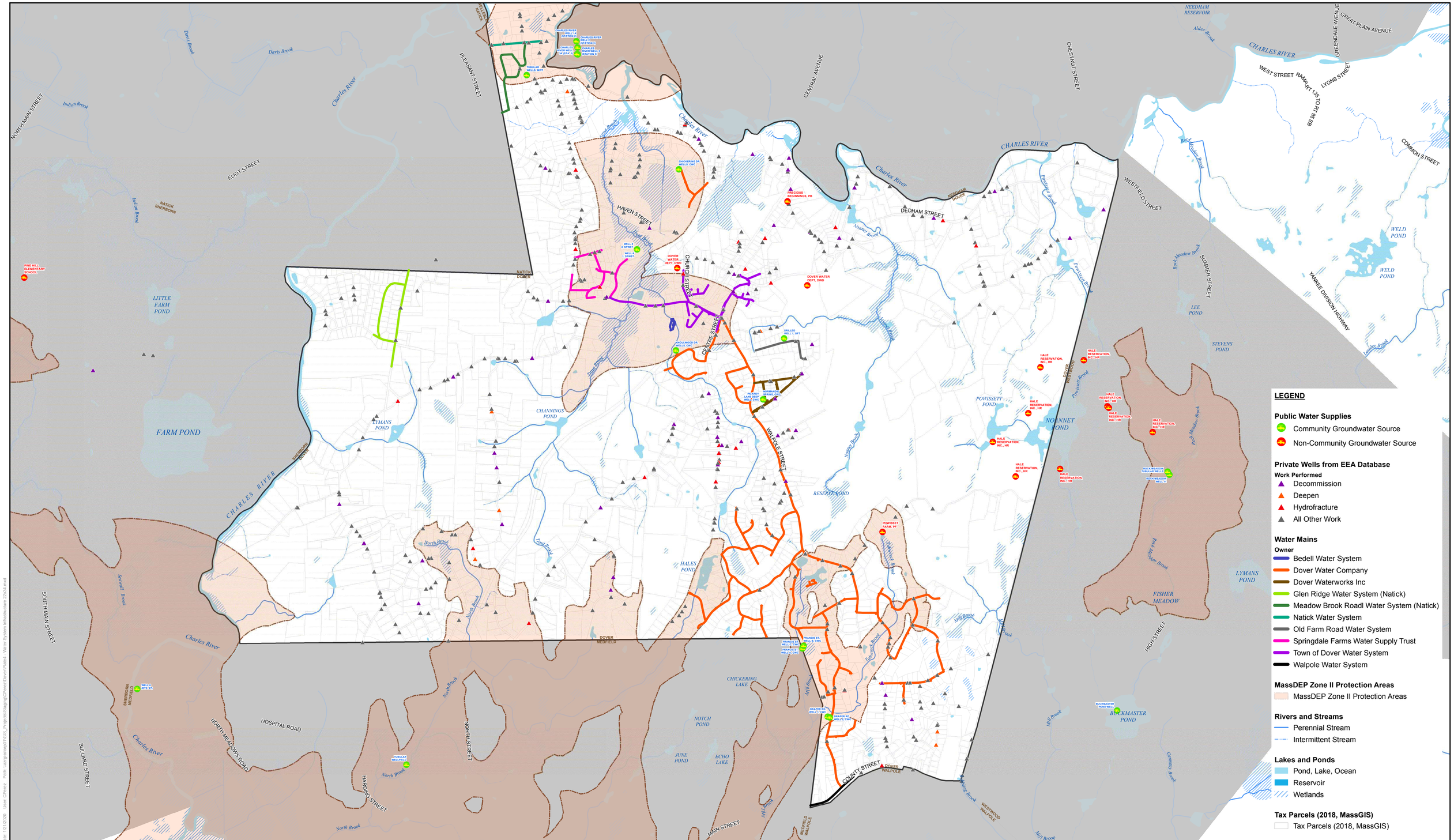

LEGEND

Public Water Supplies
- Community Groundwater Source
- Non-Community Groundwater Source

Private Wells from EEA Database

Work Performed
- Decommission
- Deepen
- Hydrofracture
- All Other Work

Water Mains

Owner
- Bedell Water System
- Dover Water Company
- Dover Waterworks Inc
- Glen Ridge Water System (Natick)
- Meadow Brook Roadl Water System (Natick)
- Natick Water System
- Old Farm Road Water System
- Springdale Farms Water Supply Trust
- Town of Dover Water System
- Walpole Water System

MassDEP Zone II Protection Areas
- MassDEP Zone II Protection Areas

Rivers and Streams
- Perennial Stream
- Intermittent Stream

Lakes and Ponds
- Pond, Lake, Ocean
- Reservoir
- Wetlands

Tax Parcels (2018, MassGIS)
- Tax Parcels (2018, MassGIS)

N

0 0.125 0.25 0.5
Miles

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PLATE 4
Water System Infrastructure

Dover, MA

FIGURE
4

APPENDIX A

MASSDEP REPORTABLE RELEASES LIST FOR DOVER

RTN	City/Town	Release Address	Site Name Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type
3-0000486	DOVER	2 WALPOLE ST	MOBIL SERVICE STATION 01-PHT 15	120 DY	02/26/1986	RAO	03/04/2005		C1	Oil and Hazardous Material
3-0001519	DOVER	4 PLEASANT ST	RESIDENCE	NONE	11/07/1986	RAO	08/02/1996		B1	
3-0001877	DOVER	4 TURTLE LN	PROPERTY	NONE	10/07/1988	RAO	06/18/2003	PHASE III	A2	Oil and Hazardous Material
3-0003015	DOVER	129 DEDHAM ST	PROPERTY	NONE	11/28/1989	RAO	09/22/2000	PHASE IV	A2	Oil
3-0002905	DOVER	CHURCH ST	MUNICIPAL WELLS	NONE	01/15/1990	TIER1D	08/09/1996			Oil
3-0002370	DOVER	26 VALLEY RD	PROPERTY	NONE	01/15/1990	RAO	10/05/1998		A2	
3-0003865	DOVER	2 DEDHAM ST	DOVER HIGHWAY DEPARTMENT	NONE	01/03/1992	RAO	10/20/1995		B1	
3-0004656	DOVER	30 CROSS ST	RESIDENCE	NONE	01/21/1993	RAO	04/04/1997		A2	Oil
3-0004449	DOVER	1 CHESTNUT ST	PROPERTY	NONE	07/15/1993	RAO	07/30/2010		A2	Oil
3-0003993	DOVER	PLEASANT ST	PROPERTY	NONE	10/01/1993	DEPNDS	06/06/1996			Oil and Hazardous Material
3-0010674	DOVER	52 WALPOLE ST	WOODLAND RD	TWO HR	03/14/1994	RAO	07/27/1994		A2	Oil
3-0010973	DOVER	4 WHITING RD	DOVER GARAGE	72 HR	05/09/1994	RAO	05/10/1995		A2	Oil and Hazardous Material
3-0011184	DOVER	45 FARM ST	OFF SPRIGDALE	72 HR	06/22/1994	RAO	09/06/1994		A2	Oil
3-0012305	DOVER	3 RIVERSIDE DR	ACROSS FROM #2	TWO HR	03/24/1995	RAO	11/06/2007		A1	Oil
3-0012688	DOVER	62 FARM ST	POLE 2-59/13	TWO HR	07/16/1995	RAO	09/12/1995		A1	Oil
3-0012809	DOVER	HAVEN ST	ALONG ALGONQUINS RIGHT OF WA	120 DY	08/16/1995	RAO	11/15/1995		A2	Oil and Hazardous Material
3-0012906	DOVER	9 HAVEN TER	OFF HAVEN ST	TWO HR	09/09/1995	RAO	01/16/1996		A2	Oil
3-0013413	DOVER	93 DEDHAM ST	NO LOCATION AID	TWO HR	02/02/1996	RAO	02/07/1997		A2	Oil
3-0014467	DOVER	7 GRAND HILL DR	NO LOCATION AID	72 HR	11/05/1996	RAO	12/20/1996		A2	Oil
3-0015935	DOVER	2 OLD FARM RD	OFF WALPOLE STREET	TWO HR	12/19/1997	RAO	09/17/1998		A2	Oil
3-0016960	DOVER	67 COUNTY RD	APPLEWOOD LN	120 DY	06/24/1998	RAO	06/07/2000	PHASE II	A2	Oil
3-0018727	DOVER	TURTLE LN	ELM BANK RESERVATION	TWO HR	09/10/1999	RAO	11/09/1999		A1	Hazardous Material
3-0018654	DOVER	2 WHITING RD	INTERSECTION WITH SPRINGDALE A	120 DY	09/20/1999	RAO	01/05/2000		A2	Oil
3-0019149	DOVER	100 WILSONDALE ST	NO LOCATION AID	TWO HR	01/07/2000	RAO	01/18/2000		A1	Oil
3-0019246	DOVER	21 CLAYBROOK RD	NO LOCATION AID	72 HR	02/07/2000	RAO	06/18/2004	PHASE III	A1	Oil
3-0019422	DOVER	33A WALPOLE ST	NEAR BRETTON RD	TWO HR	04/02/2000	RAO	04/03/2000		A1	
3-0020358	DOVER	55 POWISSETT ST	TRANSFER STATION	TWO HR	01/29/2001	RAO	02/26/2001		A1	Oil
3-0020544	DOVER	TURTLE LN	NO LOCATION AID	TWO HR	03/29/2001	RAO	05/24/2001		A2	
3-0020666	DOVER	INTERSECTION OF BRIDG	107 FARM RD	TWO HR	05/03/2001	RAO	05/15/2001		A2	Oil
3-0021881	DOVER	9 JUNCTION ST	DOVER SHERBORN HIGH SCHOOL	TWO HR	06/24/2002	RAO	08/23/2002		A2	Oil
3-0022490	DOVER	46 SPRINGDALE AVE	NO LOCATION AID	120 DY	01/28/2003	RAO	01/29/2008		B1	Oil
3-0024373	DOVER	52A CENTER ST	NO LOCATION AID	72 HR	10/29/2004	RAO	09/26/2006	PHASE II	A2	Hazardous Material
3-0024390	DOVER	52A CENTER ST	NO LOCATION AID	72 HR	11/08/2004	RTN CLOSED	10/31/2005			Hazardous Material
3-0025111	DOVER	137 FARM ST	PAD-MOUNTED TRANSFORMER PM	TWO HR	08/08/2005	RAO	08/15/2005		A2	
3-0025128	DOVER	2 MAIN ST	RESIDENCE	TWO HR	08/12/2005	RAO	10/19/2005		A2	Oil and Hazardous Material
3-0025253	DOVER	20 GLEN ST	FMR ST STEPHEN'S PRIORY - DOVER	120 DY	09/20/2005	RAO	01/23/2006		A2	Oil and Hazardous Material
3-0025427	DOVER	121 FARM ST	BROWN RESIDENCE	TWO HR	11/28/2005	RAO	01/31/2006		A2	Oil
3-0025541	DOVER	2 WALPOLE ST	MOBIL SERVICE STATION 01-PHT 15	72 HR	01/05/2006	RTN CLOSED	04/27/2007			Hazardous Material
3-0025825	DOVER	10 CLAYBROOK RD	NO LOCATION AID	TWO HR	04/18/2006	RAO	02/21/2007		A2	Oil
3-0027810	DOVER	NEAR #2 VILLAGE HILL RI	ACROSS FROM 5 VILLAGE HILL RD PI	TWO HR	07/01/2008	RAO	08/18/2008		A1	Oil
3-0030003	DOVER	4 SPRINGDALE AVENUE	NO LOCATION AID	72 HR	05/13/2011	RAO	05/09/2012		A2	Oil
3-0030306	DOVER	4 TURTLE LANE	ELM BANK PUMP STATION	TWO HR	09/15/2011	RAO	11/01/2011		B1	Hazardous Material
3-0031397	DOVER	90 CLAYBROOK ROAD	MANNION RESIDENCE	TWO HR	02/24/2013	RAO	03/01/2014		A2	Oil
3-0031851	DOVER	60 CENTRE STREET	NO LOCATION AID	TWO HR	11/04/2013	RAO	11/19/2013		A1	
3-0033232	DOVER	47 FARM STREET	MAIN HOUSE AREA	72 HR	10/27/2015	PSNC	01/28/2016		PN	Oil
3-0033229	DOVER	47 FARM STREET	RESIDENCE	72 HR	10/27/2015	PSNC	01/28/2016		PN	Oil
3-0036088	DOVER	MILL STREET AT WILLOW	MILL STREET AT WILLOW STREET	TWO HR	01/13/2020	UNCLASSIFIED	01/13/2020			Oil

APPENDIX B

TOWN OF DOVER WATER SYSTEMS HISTORY

- 1935 – **Dover Green Area** – originally; incorporated as **Dover Green Water** in June 1950; acquired by **Dover Water Works** in October 1957; acquired by **Dover Water Company** (Fryer) sometime in late 1960's; DPU shows date as July, 2003?

- 1940's or so – **Dover Water Dept**. ("**DWD**") town-owned distribution system; wells on Church St., servicing Town Hall, Caryl Elementary School, Whiting Rd Fire Station, Dover Church, St. Dunstans Episcopal Church, Dover Market and adjacent businesses, commercial businesses in town center, and some 70 residences along Centre St. and streets surrounding Town Center; an unused distribution pipe extends partly to Haven St., and a distribution pipe was installed along Springdale Ave at the time of the contamination of Church St..

    - Wells contaminated 1988 by Mobil Oil gasoline spill, MTBE

    - December 1994 – Agreement with **Dover Water Co** (**DWC**) to install distribution line from Walpole St wells to town center and to provide water to Dover Water Dept pipes. Infrastructure remains owned by town with town responsible for maintenance. Triennial renewal of contract with next cycle July 2020.

- 1940's or so – **Picardy Ln/ Bretton Rd** well installed servicing as shared well residences – DWC acquired at unknown date after 1963

- 1951 – McNamara Water System serviced residence at Old Farm Rd; acquired as cooperative July 1957 as **Old Farm Rd Water Trust**

- 1955 – May 1955 Developer William Maker builds houses on low-lying land into which farm tiles from Natick Look-out Farm discharge water - well installed at lot on intersection of Brook Rd and Meadowbrook Rd.; servicing houses being built on those streets; residents purchase system in 1960, incorporated and operated as **Meadowbrook Water Trust**; well abandoned March 1968 with Act of Legislature Ch. 87 (1968) providing for **Natick** municipal to provide water to Meadowbrook – operator now Robert Zockoff of Glen Ridge

- 1961 – **Dover Water Co.** (Ruth Francis Fryer; "**DWC**") September 1961 – Fryer owned the pond on the corner of Walpole St and what would become Cedar Hill Rd. – developers requested access and agreements with developers of neighbourhoods those roads abutting entered into agreements to install infrastructure (under street distribution pipes, valves, and residential hook-ups) and to donate them to Fryer, DPU in 1978 cited these infrastructure costs as "contributed capital" for purposes of tariff.
  - Wells installed surrounding Francis Pond behind Walpole St property
  Over time DWC expanded as developers created more housing see timeline of **Knollwood** (1968-1978);
  - undocumented date likely in early 1970's no record in DEP but DPU would show well installation date – expansion with well installed on **Chickering Dr** servicing homes on Troutbrook, Chickering, Juniper, Circle, Edgewater Roads
  - DWC cited and fined by DPU March 1978 with consumers as intervenors

- 1993's Draper Rd expansion with wells installed for houses built adjacent

- 2008 – wells surrounding pond replaced by new well on new street, Francis St, built on Fryer family owned land behind pond
- December 2010 **Colonial Water Co.** division of **New England Service Co**. (CT-located pink-sheet corporation) purchases DWC from Fryer family.

- 1963 – March 1963 – Glen Ridge housing area agreement for **Natick** municipal to service housing on Glen St, Yorkshire Rs, Greystone Rd and abutting streets – operated as **Glen Ridge Resident Trust** by Robert Zockoff

- 1960's - **Bedell Water System** (-see DWC) – Started by a dentist, Lawrence Bedell, living on Centre St. just outside town center – served his dental office and one or two abutters so it was declared a PWS, acquired by Dover Water Company April, 1978, when DWC had the Knollwood Dr. wells and loop installed

- 1968 – March 1968 DWC agreement with Ralph Porter & other developers to install wells at 24-26 Knollwood Dr; and servicing donated infrastructure servicing some 28 homes on **Knollwood Dr**, plus expansion onto **Whiting Rd**. time period 1968-1978 see Bedell

- 1984 – **Springdale Farms Water Supply Trust** – David Hill purchases land from Down family, installs two wells to service Southfield Dr, Phillips Ln, old Colony Dr, and expansion to several homes on Main St., Maple Ln, and Cranberry Ln.
  Purchase agreement and acquisition by Colonial Water Co (DWC formerly) in 2017; separate tariff grandfathered for 2 years; common tariff in 2019 with remainder of customers of Colonial

- 2010 approximately – Precious **Beginnings** - residence at 15 Centre St converted to day nursery school – operated from well on property

APPENDIX C

WATER MANAGEMENT ACT PERMIT, COLONIAL WATER COMPANY

cc: BOS
Karl W
Craig

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

December 3, 2010

Mr. Donald Vaughan
Colonial Water Company
37 Northwest Drive
Planinville, CT 06062

RE: Dover Water Company
Transfer of WMA Permit #9P4-3-20-078.01
in the Charles River Basin
to Colonial Water Company

Dear Mr. Vaughan:

Please find the attached documents:

- Water Management Act Permit #9P4-3-20-078.01 in your name; and
- Findings of Fact supporting Water Management Permit #9P4-3-20-078.01.

The permit was originally issued March 1, 2010, and is being transferred from Dover Water Company to Colonial Water Company as of December 8, 2010.

The signature on this cover letter indicates formal issuance of the attached document and approval of your transfer. If you have any questions and would like to meet to discuss the permit, please contact Elizabeth McCann of my staff at (617) 292-5901.

Sincerely,

Ann Lowery
Acting Assistant Commissioner
Bureau of Resource Protection

Cc: E McCann, MassDEP, Boston
T Mahin, MassDEP, DWP Chief, NERO
Dover Board of Selectmen, PO Box 250, Dover, MA 02030
R Zimmerman, Charles River Watershed Association, 190 Park Road, Weston, MA 02493
MWWA, via email

Y:\DWP Archive\NERO\Dover-ColonialWaterCompany-WMA-XferPermit#9P432007801-2010-12-08

Communication for Non-English Speaking Parties (310 CMR 1.03(5)(a))

English

This document is important and should be translated immediately.

Spanish

Este documento es importante y se debe traducir inmediatamente.

Portuguese

Este original é importante e deve ser traduzido imediatamente.

Italian

Questo documento è importante e dovrebbe essere tradotto immediatamente.

Greek

Αυτό το έγγραφο είναι σημαντικό και πρέπει να μεταφραστεί αμέσως.

French

Ce document est important et devrait être traduit immédiatement.

Chinese (traditional)

這 個 文件 重要 和 應該 立刻 被翻譯 。
这个文件重要 和应该立刻被翻译。

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Commissioner

Findings of Fact in Support of Final Permit Renewal Decision
Water Management Permit # 9P4-3-20-078.01
Transferred from the Dover Water Company to the Colonial Water Company
December 8, 2010

The Massachusetts Department of Environmental Protection (MassDEP) has completed its review of the Dover Water Company's (transferred to the Colonial Water Company as of December 8, 2010) Water Management Act (WMA) 20-Year Permit Renewal application in the Charles River Basin.

In response to your renewal application in the Charles River Basin, and after reviewing the information that you have provided, MassDEP hereby approves the renewal of Water Management Act permit #9P4-3-20-078.01 in accordance with the "Water Management Act" ("the Act"). MassDEP makes the following Findings of Fact in support of the attached permit renewal, and includes herewith its reasons for approving the permit and for the conditions of approval imposed, as required by M.G.L. c21G, s.11, and the "Massachusetts Water Resources Management Program", 310 CMR 36.00 ("the Regulations").

Dover Water Company Withdrawal History

The Dover Water Company is not registered under the Water Management Act (MGL c 21G). Under the Act and Regulations MassDEP issued Permits #9P4-3-20-078.01 (Charles River Basin) and #9P2-3-19-078.01 (Boston Harbor Basin) to the Dover Water Company for public water supply withdrawals.

In late 2008, Dover Water Company filed to renew Permit #9P4-3-20-078.01 which was set to expire on February 28, 2009, to continue authorized permitted withdrawals for another 20 year period in the Charles River Basin. Permit #9P2-3-19-078.01 for withdrawals in the Boston Harbor Basin remains in effect until February 28, 2010. The Dover Water Company has filed a timely application to renew Permit #9P2-3-19-078.01.

On November 5, 2010, Dover Water Company submitted BRP WM 01, Water Management Act Program Permit Transfer Form to MassDEP to transfer the permit to the Colonial Water Company as of December 8, 2010.

The Water Management Act

Permit Factors

Section 7 of the Act requires that MassDEP issue permits that balance a variety of factors including:

- Reasonable protection of existing water uses, land values, investments and enterprises;
- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower

resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, flood plains; and
- Reasonable economic development and job creation.

Safe Yield Permit Factor

Among the minimum permit factors Section 7 requires is a determination by MassDEP that permitted water withdrawals are within the safe yield of the water source from which they are made. Section 2 of the Act defines "safe yield" as: "the maximum dependable withdrawal that can be made continuously from a water source including ground or surface water during a period of years in which the probable driest period or period of greatest water deficiency is likely to occur; provided however, that such dependability is relative and is a function of storage and drought probability".

For the purposes of the Water Management Program, MassDEP considers a water source to be any one of Massachusetts' 27 major river basins. A map of the 27 major river basins has been developed by the Department of Conservation and Recreation and can be viewed at:
http://www.mass.gov/dcr/waterSupply/intbasin/basins.jpg

On December 14, 2009, MassDEP, with the assistance and concurrence of a group of stakeholders, identified a methodology for determining an Interim Safe Yield while a final Long-Term Safe Yield is developed. The Interim Safe Yield methodology is described at:
http://www.mass.gov/dep/water/resources/watercon.htm#managemt.

This permit is being issued under the Interim Safe Yield methodology adopted by MassDEP on December 14, 2009. [Under G.L.c.21G, s.11] MassDEP cannot issue permits when the combined existing, permitted and proposed withdrawal volumes exceed the safe yield of the water source. If MassDEP determines that the Long-Term Safe Yield is less than the Interim Safe Yield calculated for this basin, the volumes authorized in all Water Management permits in this basin shall be reviewed and the permitted volumes adjusted accordingly. The final Long-Term Safe Yield for the Charles River Basin will be developed by November 3, 2010. Permit review in accordance with the Long-Term Safe Yield shall be no later than the 5-year review in 2014. Access to water volumes authorized beyond Period One (Years 2-5) of this permit is contingent upon all permitted withdrawals in the basin being within the Long-Term Safe Yield, and on MassDEP completing a 5-year review modification or a permit amendment incorporating the Long-Term Safe Yield determination.

Findings of Fact for the Performance Standards in Colonial Water Company's Water Management Permit

MassDEP has determined that there is documented evidence that water withdrawals and an increase in development and impervious area, combined with the out-of-basin export of wastewater, substantially contribute to low flow in the Commonwealth. These low flows impact the ability of rivers and tributaries to adequately serve all of the competing uses described in the Act. To better achieve the balance of competing water uses mandated by the Act, the MassDEP refers to the Water Conservation Standards adopted by the Water Resources Commission.

Specific performance standards are applied to new Water Management permits and to existing permits at the time they are amended, during 5-year permit review, or permit renewal.

Consistent with Section 3 of the Act, the performance standards of 65 residential gallons per capita day or less and 10% or less of unaccounted for water, summer limits on withdrawals, and efforts to offset the impacts of increasing withdrawal volumes are based on the Massachusetts *Water Conservation Standards* approved by the Water Resources Commission in July 2006. These standards can be found at:
http://www.mass.gov/Eoeea/docs/eea/water/water_conservation_standards.pdf

MassDEP believes these standards are reasonable based on studies and data developed throughout the country, the 1996 AWWA Leak Detection and Water Accountability Committee report on water

accountability (*AWWA Journal*; July 1996; pp. 108-111), and the fact that the average values in 2008 for Massachusetts were 62 RGPCD, and 14% UAW. While these performance standards represent the minimum standards required for compliance with the Permit, MassDEP believes that through the implementation of all the terms and conditions of Water Management permits, municipalities can meet the performance standards for RGPCD and UAW.

MassDEP will consider any permittee that has been unable to meet the 65 RGPCD or 10% UAW performance standard within 5 years of receiving its permit to be achieving functionally equivalent compliance with the performance standards, if they:

- are complying with the Water Conservation requirements included in the permit,
- have implemented the required limits on nonessential outdoor water use, and
- are making demonstrable efforts to finance, implement and enforce a MassDEP-approved compliance plan.

Because permittees' circumstances vary, a permittee may present an analysis of the cost effectiveness of implementing certain conservation measures required by MassDEP and offer alternative measures. The analysis must explicitly consider environmental impacts and must produce environmental benefits. MassDEP will allow Permittees to:

- Document economic hardship and present an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship;
- Present reasons why specific measures are not cost effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard; and
- Propose specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP Functional Equivalence Plan(s) (See Appendix A & B).

MassDEP will review permittees' detailed, written cost effectiveness analysis to determine whether unique circumstances make specific Best Management Practices (BMPs) less cost-effective than alternatives, or not feasible for a particular PWS when developing the compliance plan.

Findings of Fact for Colonial Water Company's Special Permit Conditions

In issuing permits, MassDEP looks primarily at site-specific impacts and other issues specific to the system, such as impacts to nearby streams, wetlands, or other water users, justification of long-term demand projections and the capacity of permitted withdrawal points. The conditions are intended to ensure the efficient use of water and to mitigate the potential impact of withdrawals.

The summary of permit conditions, as part of MassDEP's findings of fact, is not intended to, and should not be construed as, modifying any of the Permit conditions. In the event of any ambiguity between the summary and the actual permit conditions, the Permit language shall be controlling.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume, reflects the renewal of the full volume authorized in Dover Water Company's Permit #9P4-3-20-078.01 issued on February 8, 2002. The water supply system includes sources in both the Charles River and Boston Harbor Basins. In order to provide the flexibility Colonial Water needs to operate their water supply system safely and efficiently, Colonial Water may take the annual average system-wide withdrawal volumes from its sources in either basin in the manner that best meets the system's operational needs, so as long as the combined system-wide withdrawals do not exceed 0.14 mgd.

Public water suppliers can be permitted for withdrawal volumes up to amount projected in the water needs forecasts prepared by the Department of Conservation and Recreation (DCR), Office of Water Resources. The volumes shown in the DCR water needs forecast for Colonial Water's customer base

(letter of November 24, 2008 from Anne Monnelly (Carroll) of DCR to Judith Wooten of the Dover Water Company) are slightly higher than the amount currently permitted. These water needs forecast were prepared based on the Water Resources Commission's policy for developing water needs forecasts, which is available at:
http://www.mass.gov/Eoeea/docs/eea/wrc/090501_waterneedsforcast_policymethod.pdf.

In order to receive a permit up to the amounts projected by DCR, Colonial Water will need to obtain a new Water Management permit prior to withdrawing more than 0.14 million gallons per day (mgd) on average over the course of a year. To obtain a permit for more than 0.14 mgd, Colonial Water will need to conduct an impact analysis and public notice processes for the increased withdrawals to identify any possible impacts that the larger withdrawals could have on other water users and environmental resources in the area

Special Condition 2, Maximum Authorized Daily Withdrawal Volume, reflects the maximum daily withdrawal rates by source, according to MassDEP approved Zone II rates.

Special Condition 3, Zone of Contribution Delineations, requirement has been met thus no further delineations are required as a condition of this permit.

Special Condition 4, Water Supply Source Protection, requirements have been met since your prior permit's issuance therefore no further action is required as a condition of this permit.

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use, as discussed previously, Colonial Water Company's permit requires compliance with the Performance Standard by December 31, 2011. DEP recognized a value of 83 RGPCD for Dover Water Company in 2008.

Special Condition 6, Performance Standard for Unaccounted for Water, discussed previously, Colonial Water Company's permit requires compliance with the Performance Standard by December 31, 2011. DEP recognized a value of 6% UAW for Dover Water Company in 2008.

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use are based upon the Colonial Water Company's Residential Gallons per Capita Day (RGPCD) for the preceding year, and will be implemented according to either: 1) calendar triggered restrictions; or 2) streamflow triggered restrictions.

1. **Calendar triggered restrictions:** Restrictions shall be implemented from May 1st through September 30th. Many public water suppliers will find this option easier to implement and enforce than the streamflow triggered approach.

2. **Streamflow triggered restrictions:** Restrictions shall be implemented at those times when streamflow falls below designated flow triggers measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1st through September 30th. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days.

The basis for stramflow triggers is derived from Aquatic Base Flow (ABF) values calculated by the Sustainable Yield Estimator (SYE)[1] for simulated natural flow applied to the assigned local USGS

[1] Archfield, S.A., Vogel, R.M., Steeves, P.A., Brandt, S.L., Weiskel, P.K., and Garabedian, S.P., 2010, The Massachusetts Sustainable-Yield Estimator: A decision-support tool to assess water availability at ungaged stream locations in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2009–5227, 41 p. plus CD-ROM. See http://pubs.usgs.gov/sir/2009/5227/

stream gage. The two-tiered trigger values are based on flow levels that are protective of aquatic habitat for fish spawning during the spring bioperiod, designated with the June ABF; and protective flows for fish rearing and growth during the summer bioperiod, designated with the August ABF trigger. Protective flow levels are derived from index gage flow data which represent the least altered stream flows in Massachusetts, and are further described in the Department of Conservation and Recreation (DCR)[2] and USGS Index Reports[3].

If Colonial Water selects the streamflow approach, it has been assigned the USGS local stream gage of #01103500 – Charles River at Dover, MA. The June ABF estimated using SYE is 0.93 cfsm and the August ABF value is 0.34 cfsm. These cfsm units translate to your local gage streamflow triggers as 170 cubic feet per second (cfs) for May and June, and 62 cfs for July, August and September.

Should the reliability of flow measurement at the Charles River at Dover gage be so impaired as to question its accuracy, Colonial Water may request MassDEP's review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

Drought triggered restrictions are incorporated into the seasonal limits on outdoor water use as outlined in Special Condition 7. Times of low streamflow and drought do not always coincide, but both low streamflow and drought conditions can have adverse effects on water supplies, natural resources and aquatic life. **Please note that many communities impose drought-based outdoor water use restrictions before the Massachusetts Drought Management Task Force declares a Drought Advisory** because drought conditions can begin to impact local water supplies before a regional advisory is declared.

Nothing in this permit is intended to prevent communities from implementing water use restrictions that are more restrictive than those set forth in this permit.

Special Condition 8, Water Withdrawals that Exceed Baseline Withdrawal Volumes. Baseline withdrawal is the volume withdrawn in compliance with the Act during the calendar year 2005, the average volume withdrawn in compliance with the Act from 2003 to 2005, or the registered volume whichever is highest. Colonial Water Company's Baseline withdrawal volume is the maximum amount authorized by this permit, 0.14 MGD (51.10 MGY). Water use above the 0.14 MGD Annual Average Daily Baseline will require offsets if feasible

Special Condition 9, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

Special Condition 10, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission in July 2006.

Comments Received

Comments on the Draft permit were received from the Charles River Watershed Association, Massachusetts Audubon, and the Ipswich River Watershed Association. While the comments addressed a wide range of concerns, many of the comments refer to larger statewide policy questions or issues that had been previously discussed by the Water Resources Management Advisory Committee. MassDEP

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[2] Massachusetts Department of Conservation and Recreation (DCR), 2008 Index Streamflows for Massachusetts, May 2008, Prepared by Office of Water Resources for the Massachusetts Water Resources Commission, 45 p., plus CD-ROM.

[3] Armstrong, D.S., Parker, G.W., and Richards, T.A., 2008, Characteristics and classification of least altered streamflows in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2007-5291, 113 p., plus CD-ROM.

anticipates that a number of the issues mentioned will be discussed by the Executive Office of Energy and Environmental Affairs' Sustainable Water Management Initiative over the current year. Permit reviews that incorporate the outcome of the Sustainable Water Management Initiative shall be no later than the 5-Year Review in 2014. Permit modifications as appropriate shall be made at that time. MassDEP did modify the final permit primarily to clarify its position on several issues, including, its position regarding allocation volumes should they exceed the final Long-Term Safe Yield as outlined in Special Condition #1, and to clarify that the cost-effectiveness of the various Best Management Practices (BMPs) be analyzed should the offset requirement be triggered.

In response to comment received from the Dover Water Company during the permit application review, MassDEP has added language to the permit acknowledging that Colonial Water:

- may need to apply to the Department of Public Utilities for rate changes in order to implement several provisions in the permit including Seasonal Limits on Nonessential Outdoor Water Use and the MassDEP Functional Equivalence Plans for RGPCD and UAW; and
- will need to demonstate Best Effort to implement several provisions of the MassDEP Functional Equivalence Plan for RGPCD..

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

WATER WITHDRAWAL PERMIT
MGL c 21G

This permit is issued pursuant to the Massachusetts Water Management Act (the Act) for the sole purpose of authorizing the withdrawal of a volume of water as stated herein and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

The Colonial Water Company holds permits in both the Charles River and Boston Harbor basins. MassDEP no longer issues a single permit to an entity with water withdrawals in two river basins. This permit is for the Colonial Water Company's Chickering Drive and Knollwood Drive wellfields in the Charles River basin wells only. The total system-wide annual average withdrawal authorization and special permit conditions concerning performance standards, conservation requirements, and seasonal demand management are included in the Charles River basin permit and will also be included in the Boston Harbor basin permit when it is renewed.

PERMIT NUMBER: 9P4-3-20-078.01

RIVER BASIN: Charles Basin

PERMITTEE: Colonial Water Company
37 Northwest Drive
Plainville, CT 06062

TRANSFERRED FROM: Dover Water Company
85 Walpole Street, PO Box 125
Dover, MA 02030

PERMIT RENEWAL ISSUANCE DATE: March 1, 2010

TRANSFER DATE: December 8, 2010

EXPIRATION DATE: February 28, 2029

NUMBER OF WITHDRAWAL POINTS: 2

Groundwater: 2 Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATION(S): **Table 1: Withdrawal Point Identification**

Well Name	PWS Source ID Code
Chickering Drive Tubular Wellfield	3078006-02G
Knollwood Drive Tubular Wellfield	3078006-03G

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit renewal authorizes the Colonial Water Company (Colonial) to withdraw water, on average over a calendar year, at the rate described in Table 2 below. The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY) for each five-year period of the permit term.

Colonial has sources in both the Charles River and Boston Harbor Basins, and may take the annual average system-wide withdrawal volumes from its sources in either basin in the manner that best meets the system's operational needs, so as long as the combined system-wide withdrawals do not exceed the volumes outlined below. Colonial's Boston Harbor Basin permit will expire and be subject to renewal on February 28, 2010.

MassDEP bases these withdrawal volumes on the raw water withdrawn from the authorized withdrawal points, and will use the raw water amount to assess compliance with the registered and permitted withdrawal volumes. Colonial's baseline withdrawal for the purpose of triggering "Special Condition 8, Water Withdrawals the Exceed Baseline Withdrawal Volumes" is 0.14 MGD, or 51.10 MGY.

Table 2: Maximum Authorized Withdrawal Volumes

5-Year Periods		Total Raw Water Withdrawal Volumes	
		Permit	
		Daily Average (MGD)	Total Annual (MGY)
Period One Years 2-5	3/1/10 to 2/28/2014	0.14	51.10
Period Two* Years 6-10	3/1/2014 to 2/28/2019	0.13	47.45
Period Three* Years 11-15	3/1/2019 to 2/29/2024	0.13	47.45
Period Four* Years 16-20	3/1/2024 to 2/28/2029	0.14	51.10

* This permit is being issued under the Interim Safe Yield methodology adopted by MassDEP on December 14, 2009. [Under G.L.c.21G, s.11] MassDEP cannot issue permits when the combined existing, permitted and proposed withdrawal volumes exceed the safe yield of the water source. If MassDEP determines that the Long-Term Safe Yield is less than the Interim Safe Yield calculated for this basin, the volumes authorized in all Water Management permits in this basin shall be reviewed and the permitted volumes adjusted accordingly. The final Long-Term Safe Yield for the Charles River Basin will be developed by November 3, 2010. Permit review in accordance with the Long-Term Safe Yield shall be no later than the 5-year review in 2014. Access to water volumes authorized beyond Period One (Years 2-5) of this permit is contingent upon all permitted withdrawals in the basin being within the Long-Term Safe Yield, and on MassDEP completing a 5-year review modification or a permit amendment incorporating the Long-Term Safe Yield determination.

2. Maximum Authorized Daily Withdrawals from each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed in Table 3 without specific advance written approval from the MassDEP. The authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Maximum Daily Withdrawal Volumes		
Well Name	**PWS Source ID Code**	**Maximum Daily Rate (MGD)**
Chickering Drive Tubular Wellfield	3078006-02G	0.36
Knollwood Drive Tubular Wellfield	3078006-03G	0.43

3. Zone of Contribution Delineations

Department records show that the Chickering Drive Wellfield and the Knollwood Drive Wellfield have MassDEP approved Zone II delineations. No further Zone II work is required as a condition of this permit.

4. Wellhead Protection

Department records show that Colonial has met the "Best Effort" requirements of 310 CMR 22.21 (1)(d), in encouraging the Town of Dover to adopt land use controls which meet 310 CRM 22.21(2) for the Zone IIs of the Chickering Drive Wellfield (02G) and the Knollwood Drive Wellfield (03G).

Department records show that Colonial has met the "Best Effort" requirements of 310 CMR 22.21(1)(d), in encouraging the Town of Dover to adopt a floor drain regulation for compliance with the latest requirements of 310 CMR 22.21.

5. Performance Standard for Residential Gallons Per Capita Day Water Use

Colonial's performance standard for residential gallons per capita day (RGPCD) is 65 gallons. Colonial shall be in compliance with the performance standard by December 31, 2011. Colonial shall report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this performance standard. Colonial's ASR shall include the calculation used to derive that figure including, without limitation, the source of the data used to establish the service population and the year in which this data was developed.

See Appendix A for information on the requirements if the performance standard for RGPCD is not met.

6. Performance Standard for Unaccounted for Water

Colonial's performance standard for unaccounted for water (UAW) is 10% of overall water withdrawal. Colonial shall be in compliance with the performance standard by December 31, 2011. Colonial shall report its UAW annually in its Annual Statistical Report (ASR) and document compliance with this performance standard. Colonial's ASR shall include the calculation used to derive that figure including, without limitation, the source of data used, the methodology for calculating UAW and any assumptions used in making the calculation.

UAW is defined as the residual resulting from the total amount of water supplied to a distribution system as measured by master meters, minus the sum of all amounts of water measured by consumption meters in the distribution system, and minus confidently estimated and documented amounts used for certain necessary purposes.

UAW shall include, without limitation: unavoidable leakage, recoverable leakage, meter inaccuracies (unless they fall under the category of source meter calibration which allows for adjustment per results of source meter calibration); errors in estimation of stopped meters, unauthorized hydrant openings, illegal connections, stand pipe overflows, data processing errors; and undocumented fire fighting uses. The need for water main flushing and the use of water in construction or meter calibration shall be metered or

estimated as appropriate to assist in determining actual demand. Volumes flushed to waste shall be reported on Colonial Water Company's ASR.

Uses that can be confidently estimated and documented in writing include: storage tank overflow and drainage; water main flushing and flow testing; fire fighting; bleeding or blow-offs; sewer and stormwater system flushing; and cleaning and street cleaning. Any adjustments made as a result of the properly documented source meter calibration shall be provided as required by the ASR.

Any adjustment in the calculation of UAW made as a result of confidently estimated uses shall be fully documented as required in the ASR.

See Appendix B for information on requirements if the performance standard for UAW is not met.

7. **Seasonal Limits on Nonessential Outdoor Water Use**

Colonial shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4 below. As a private water company, if Colonial must apply to the Department of Public Utilities (DPU) to alter its rate structure in order to implement this requirement, Colonial must submit a letter to MassDEP by May 1, 2010, stating that they must apply to DPU and outlining a timetable for the rate change process. Correspondence and the final text of any decision by the DPU must be submitted to MassDEP.

Colonial shall be responsible for tracking streamflows and drought advisories and recording when restrictions are implemented if streamflow triggered restrictions are implemented. See Accessing Streamflow and Drought Advisory Website Information in Table 4 for instructions.

Colonial shall document compliance with the summer limits on nonessential outdoor water use annually in its Annual Statistical Report (ASR), and indicate whether it anticipates implementing calendar triggered restrictions or streamflow triggered restrictions during the next year.

Nothing in this permit shall prevent Colonial from implementing water use restrictions that are more restrictive than those set forth in this permit.

Water Uses Restrictions

Nonessential outdoor water uses that are subject to mandatory restrictions include:

- irrigation of lawns via sprinklers or automatic irrigation systems;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing of exterior building surfaces, parking lots, driveways or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement or cement.

The following uses may be allowed when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September;
- irrigation of public parks and recreational fields by means of automatic sprinklers outside the hours of 9 am to 5 pm; and
- irrigation of lawns, gardens, flowers and ornamental plants by means of a hand-held hose.

Water uses NOT subject to mandatory restrictions are those required:

- for health or safety reasons;
- by regulation;
- for the production of food and fiber;
- for the maintenance of livestock; or
- to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and limited fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

Table 4: Seasonal Limits on Nonessential Outdoor Water Use

Permittees meeting the 65 RGPCD standard for the preceding year (as reported in the ASR and accepted by MassDEP) must implement either:

1. Calendar Triggered Restrictions from May 1st through September 30th

No nonessential outdoor water use from 9 am - 5 pm

2. Streamflow Triggered Restrictions from May 1st through September 30th

No nonessential outdoor water use from 9 am - 5 pm whenever:

a) Streamflow at the assigned USGS local stream gage 01103500 – Charles at Dover falls below the following designated flow triggers for **three (3)** consecutive days:
- May 1st through June 30th: **170 cfs** (based on minimum flows that are protective of habitat for fish spawning during the spring bioperiod), and
- July 1st through September 30th: **62 cfs** (based on minimum flows that are protective of habitat for fish rearing and growth during the summer bioperiod).

Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for **seven (7)** consecutive days; or

b) A Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force.

Permittees NOT meeting the 65 RGPCD standard for the preceding year (as reported in the ASR and accepted by MassDEP) must implement either:

1. Calendar Triggered Restrictions from May 1st through September 30th

a) **Nonessential outdoor water use is allowed TWO DAYS per week** before 9 am and after 5 pm; and

b) **Nonessential outdoor water use is allowed ONE DAY per week** before 9 am and after 5 pm; whenever a Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force.

2. Streamflow Triggered Restrictions from May 1st through September 30th

Nonessential outdoor water use is allowed ONE DAY per week before 9 a.m. and after 5 p.m. whenever:

a) Streamflow at the assigned USGS local stream gage 01103500- Charles at Dover falls below the following designated flow triggers for **three (3)** consecutive days:
- May 1st through June 30th: **170 cfs** (based on minimum flows that are protective of habitat for fish spawning during the spring bioperiod), and

July 1st through September 30th: **62 cfs** (based on minimum flows that are protective of habitat for fish rearing and growth during the summer bioperiod).

Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for **seven (7)** consecutive days; or

b) A Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force.

Instructions for Accessing Streamflow and Drought Advisory Website Information

Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the

Table 4: Seasonal Limits on Nonessential Outdoor Water Use

designated trigger. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, permittees must use the mean daily streamflow from the preceding day when tracking streamflows.

Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at http://waterdata.usgs.gov/ma/nwis/current/?type=flow.

- Scroll down to 01103500- Charles at Dover.
- Click on the gage number.
- Scroll down to "Provisional Date Subject to Revision – Available data for this site" and click on the drop down menu.
- Click on "Time-series: Daily data" and hit GO.
- Scroll down to the "Available Parameters" box. Within the box, be sure "Discharge (mean)" is checked, then, under "Output Format" click "Table" and hit GO.
- Scroll down to "Daily Mean Discharge, cubic feet per second" table and find the current date on the table.
- Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above.

Drought Advisory information is available at the Massachusetts Department of Conservation and Recreation (DCR) Drought Status Website at http://www.mass.gov/dcr/waterSupply/rainfall/drought.htm.

- Under "Drought Status Reports", click on "drought map" on the right-hand side of the page.. The color coded map displays the six drought regions in Massachusetts. Restrictions are implemented when a Drought Advisory, Watch, Warning or Emergency is announced through the DCR website.

Public Notice of Water Use Restrictions

Colonial shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- For calendar-triggered restrictions, customers shall be notified by April 15th each year.
- For streamflow-triggered restrictions, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice to customers shall include the following:

- A detailed description of the restrictions and penalties for violating the restrictions;
- The need to limit water use, especially nonessential outdoor water use, to ensure a sustainable drinking water supply and to protect natural resources and streamflow for aquatic life; and
- Ways individual homeowners can limit water use, especially nonessential outdoor water use.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the Water Use Restrictions Form at http://www.mass.gov/dep/water/approvals/wmgforms.htm#conserve.

Notice to customers and MassDEP need not be provided if Colonial has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

8. Water Withdrawals that Exceed Baseline Withdrawal Volumes

Colonial's baseline withdrawal volume (Baseline) is 0.14 MGD, or 51.10 MGY.

Colonial shall perform an Offset Feasibility Study the first time its water withdrawals for a calendar year exceed its Baseline. Colonial Water Company shall make a written analysis of the cost effectiveness of

each of the following Best Management Practices (BMP's) and any other BMP's selected by Colonial to offset withdrawal increases.

BMP's to be evaluated shall include, but are not limited to:
Development Guidelines

- Low Impact Development, Conservation Development and Smart Growth bylaws or regulations in addition to those implemented through the November 2001 Best Development Practices Guidebook
- Land clearing/development bylaws (loam, native vegetation site clearing limitation, lawn size limitations) in addition to those implemented through the November 2001 Best Development Practices Guidebook

Water Bank

- Traditional water and/or sewer bank
- Institute "hook-up" fee for all new development with revenues to be dedicated to water conservation programs such as rebate programs for homeowners (efficient appliances)

Stormwater Management and Recharge

- Stormwater Utility or dedicated stormwater fees used to build and maintain stormwater infiltration facilities
- By-law implementing MA stormwater recharge standards townwide beyond the wetland areas required in the MA Stormwater Policy
- By-law requiring stormwater recharge above the rates required in the MA Stormwater Policy

Infiltration and Inflow

- Enhanced I/I program going forward for the next 5 years

Local Infiltration of Waste Water

If Colonial Water Company is required to perform a Study, Colonial shall:

- Within 60 days of the filing of an ASR indicating that a Study is required, submit a Study Scope of Work to MassDEP for approval;
- Within 6 months of MassDEP's approval of the Study Scope of Work, submit the completed Study to MassDEP for approval;
- MassDEP's approval of the Study Scope of Work and the completed Study will be presumed if MassDEP does not issue a written approval or denial of such submission within 60 days of the date submitted to MassDEP for approval.

If Colonial files a subsequent ASR indicating that withdrawals for a calendar year again have exceeded its Baseline, then Colonial shall:

- Implement the results of the Study;
- Document such implementation annually at the time it files its ASR; and
- Continue to implement the results of the Study as long as withdrawals exceed Baseline.

9. Water Conservation Requirements

At a minimum, Colonial shall implement the following conservation measures forthwith. MassDEP recognizes that Colonial is currently implementing a number of these requirements. Compliance with the water conservation requirements shall be reported to MassDEP upon request or by February 28, 2014, the date of the next Review of this permit, unless otherwise noted below.

Table 5: Water Conservation Requirements
System Water Audits and Leak Detection
1. At a minimum, conduct a full leak detection survey every three years unless the results of the water audit indicate that recoverable leakage constitutes a small portion of the system's unaccounted-for water. The first full leak detection survey shall be completed no later than 3 yrs from the date of last documented leak detection survey.
2. Perform a leak detection survey of those sections of the distribution system that have not been surveyed within the last year within one year whenever the percentage of unaccounted for water increases by 5% or more (for example an increase from

Table 5: Water Conservation Requirements

3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, the permittee shall submit to MassDEP for its review a report detailing the leak detection survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.

3. Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.

4. The permittee shall have repair reports available for inspection by MassDEP. Establish a priority schedule for repairing leaks that is at least as stringent as the following:
   - Leaks of 15 gallons per minute or more shall be repaired as soon as possible but not later than one month after leak detection.*
   - Leaks of less than 15 gallons per minute, but greater than 5 gallons per minute, shall be repaired as soon as possible but not later than two months after leak detection.*
   - Leaks of 5 gallons per minute or less shall be repaired as soon as possible but not later than six months after leak detection, except that hydrant leaks of one gallon or less per minute shall be repaired as soon as possible.*
   - Leaks shall be repaired in accordance with the priority schedule including leaks up to the property line, curb stop or service meter, as applicable.
   - Have water use regulations in place that require property owners to expeditiously repair leaks on their property.

   The following exceptions can be considered:
   - Repair of leakage detected during winter months can be delayed until weather conditions become favorable for conducting repairs;* and
   - Leaks in freeway, arterial or collector roadways may be coordinated with other scheduled projects being performed on the roadway.**

   *Reference: MWRA regulations 360 CMR 12.09
   **Mass Highway or local regulations may regulate the timing of tearing up pavement on roads to repair leaks.

5. Ensure placement of sufficient funds in the annual water budget to conduct water audits and leak detection and repair leaks as necessary.

Metering

1. Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. Ensure that the system is 100% metered, including all water use at municipal facilities (schools, school athletic fields, etc.).
3. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards.
   AWWA References:
   AWWA Manual M22 – Sizing Water Service Lines and Meters
   AWWA Manual M6 – Water Meters, or as amended
4. Have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by your customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections.
5. Ensure placement of sufficient funds in the annual water budget to calibrate, repair, or replace meters as necessary.

Pricing

1. Implement a water revenue structure that includes the full cost of operating the water supply system in compliance with state and federal requirements by the next 5-year review (February 2014). Evaluate revenues every three to five years and adjust rates as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into the revenue structure.
   AWWA References for Additional Information on Pricing:
   AWWA Manual 1- Principals of Water Rates, Fees and Charges
   AWWA Manual 29- Fundamentals of Water Utility Financing
2. The permittee shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed per M.G.L. Chapter 40 Section 39L.

Residential and Public Sector Conservation

1. *The permittee* shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code, as amended.
2. Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3. Municipal Water Use
   Water Districts or Water Companies must demonstrate "Best Efforts" to meet this requirement
   - By January 1, 2011, the permittee shall prepare an inventory of Town-owned public buildings in the District's service area, and submit it to both the Town and to MassDEP.
   - The Inventory shall:
     (a) identify those buildings which are not currently fitted with water saving devices (faucet aerators, low flow

Table 5: Water Conservation Requirements

shower heads and low flow toilets), and
(b) specify that the District is requesting that the Town retrofit all buildings with water saving devices by January 1, 2015.

- Town-owned public buildings in the District's service area that the Town has scheduled for rehab or demolition in a current municipal facilities plan, or cases in which retrofitting a municipally-owned building will cause economic hardship, may, with MassDEP's approval, be exempt from this condition.

"Best Efforts" on the part of the District shall consist of submission of the inventory and all subsequent updates on progress toward completing the retrofits to MassDEP.

Industrial and Commercial Water Conservation

1. The permittee shall review the use records for its industrial, commercial and institutional water users and develop an inventory of the largest water users. The permittee shall develop and implement an outreach program designed to inform and (where appropriate) work with its largest industrial, commercial and institutional water users on ways to reduce their water use by the next 5-year review (February 2014). Such outreach plans can include, but are not limited to:
   - information on water audits,
   - meter sizing,
   - water reuse,
   - low-flow plumbing fixtures,
   - mandatory outdoor water use restrictions,
   - suggestions for contacting trade associations for process specific information on water use reductions, and
   - contact information for the Executive Office of Environmental Affairs Office of Technical Assistance for Toxics Use Reduction (OTA) which offers a range of assistance and information to help facilities improve water use efficiency and reduce wastewater discharge.

   OTA: (617) 626-1060 or www.mass.gov/envir/ota.
2. Upon request by MassDEP, the permittee shall report on industrial, commercial and institutional water conservation including the results of its review of water use records for industrial, commercial and institutional water users, the inventory of the largest water users, copies of any outreach materials distributed to industrial, commercial and institutional water users, and to the extent practical, a summary of water use reductions or savings that have resulted.
   Upon receipt of this report, MassDEP will take whatever action it deems appropriate to promote the interests of the Water Management Act, including without limitation requiring the permittee to take additional actions to reduce industrial, commercial and institutional water use.

Public Education and Outreach

1. By 2011, develop and implement a Residential Water Conservation Education Plan. The Plan shall be designed to educate water customers on ways to conserve water. Without limitation, Residential Water Conservation Plans may include the following actions:
   - Annual work sheets, included in water bills or under separate cover, to enable customers to track water use and conservation efforts and estimate the dollar savings;
   - Public space advertising/media stories on successes (and failures);
   - Conservation information centers perhaps run jointly with electric or gas company;
   - Speakers for community organizations;
   - Partner with garden clubs, or other private and non-profit organizations, to promote efficient water use;
   - Provide information on water-wise landscaping, gardening, efficient irrigation and lawn care practice;
   - Public service announcements; radio/T.V./audio-visual presentations;
   - Joint advertising with hardware stores to promote conservation devices;
   - Water conservation workshops for the general public;
   - Special events such as Conservation Fairs;
   - Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and
   - Make multilingual materials available as needed.

   References and additional information available through the USEPA Water Sense Program
   http://www.epa.gov/watersense
2. Upon request of MassDEP, the permittee shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

10. Requirement to Report Raw and Finished Water Volumes

Colonial shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system and the raw water volumes for individual water withdrawal points.

GENERAL PERMIT CONDITIONS (applicable to all Permittees)

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.

2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.

3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of MassDEP to enter and examine any property for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.

4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by MassDEP pursuant to MGL c 21G ss 15-17, MGL c 150 ss 111, or any other enabling authority.

5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until MassDEP approves such transfer in writing, pursuant to a transfer application on forms provided by MassDEP requesting such approval and received by MassDEP at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.

6. **Duty to Report** The permittee shall complete and submit annually, on a form provided by MassDEP, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by MassDEP by the date specified on the form each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection
Drinking Water Program
Water Management Program
One Winter Street, 5th Floor
Boston, MA 02108

7. **Duty to Maintain Records** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.

8. **Metering** All withdrawal points included within the permit shall be metered within one year of the date of issuance of the permit. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of MassDEP. Any person aggrieved by this decision may request an adjudicatory hearing under the provisions of MGL c 30A. Any such request must be made in writing, by certified mail and received by MassDEP within twenty-one (21) days of the date of receipt of this permit. No request for an appeal of this permit shall be validly filed unless a copy of the request is sent by certified mail or delivered by hand to the local water resources management official in the city or town in which the withdrawal point(s) is located; and for any person appealing this decision, who is not the applicant, unless such person notifies the permit

applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to MassDEP.

CONTENTS OF HEARING REQUEST
310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of MassDEP is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of this permit.

FILING FEE AND ADDRESS
The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of $100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

EXEMPTIONS
The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

WAIVER
MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person, seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts, which support the claim of undue hardship.

Appendix A – Residential Gallons Per Capita Day

I. Compliance Plan Requirement

If the permittee fails to achieve and document compliance with the RGPCD performance standard in its Annual Statistical Report (ASR), then the permittee shall file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall:

a. meet the requirements set forth below in Section II;
b. include measures to be implemented to meet the performance standard; and
c. include the schedule for implementing such measures.

The filing of a RGPCD Plan shall not constitute a return to compliance, nor shall it affect MassDEP's authority to take action in response to the permittee's failure to meet the performance standard.

If a RGPCD Plan is required, the permittee must:

a. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD Plan annually at the time it files its ASR; and
b. continue to implement the RGPCD Plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

II. Contents of a RGPCD Plan

A permittee that does not meet the 65 RGPCD performance standard within 2 years (for Colonial, December 31, 2011), has the choice to file a RGPCD Plan containing measures that the permittee believes will be sufficient to bring the system into compliance with the performance standard (Individual RGPCD Plan) or may adopt the MassDEP RGPCD Functional Equivalence Plan that includes mandated Best Management Practices (BMPs).

A permittee that has been unable to meet the 65 RGPCD performance standard within 5 years (for Colonial, December 31, 2014) must implement the MassDEP RGPCD Functional Equivalence Plan to be considered functionally equivalent with the performance standard.

At a minimum, all RGPCD Plans must include a detailed:

a. description of the actions taken during the prior calendar year to meet the performance standard;
b. analysis of the cause of the failure to meet the performance standard;
c. description and schedule of the actions that will be taken to meet the performance standard; and
d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

RGPCD Plans may be amended to revise the actions that will be taken to meet the performance standard.

Individual RGPCD Plan

Individual RGPCD Plan will document a plan to adopt and implement measures tailored to the specific needs of the water supply system that the permittee believes will be sufficient to bring the system into compliance with the performance standard within three years.

At a minimum, all Individual RGPCD Plans for failure to meet the RGPCD performance standard must include implementation of at least one of the following residential conservation programs:

a. a program that provides water saving devices such as faucet aerators and low flow shower heads at cost;
b. a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets); or
c. the adoption and enforcement of an ordinance, bylaw or regulation to require the installation of soil moisture sensors or similar climate related control technology on all automatic irrigation systems.

If the permittee is already implementing one or more of these programs, it must include in its Individual RGPCD Plan the continued implementation of such program(s), as well as implementation of at least one additional program. All programs must include a public information component designed to inform customers of the program and to encourage participation in the program.

Without limitation, the Individual RGPCD Plan for failure to meet the RGPCD performance standard may include any of the actions set forth in the MassDEP RGPCD Functional Equivalence Plan below.

MassDEP RGPCD Functional Equivalence Plan

In order to be considered functionally equivalent with the RGPCD performance standard, the permitee must be in compliance with permit Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use, and must adopt and implement the MassDEP RGPCD Functional Equivalence Plan that requires all the following residential conservation programs:

a. a program that provides water saving devices such as faucet aerators and low flow shower heads at cost;
b. a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets)**;
c. the adoption and enforcement of an ordinance, bylaw or regulation to require the installation of soil moisture sensors or similar climate related control technology on all automatic irrigation systems*;
d. the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation**;
e. the adoption and enforcement of an ordinance, bylaw or regulation to require that all new construction include water saving devices and low water use appliances*; and
f. the implementation of monthly or quarterly billing.

Hardship

A permittee may present an analysis of the cost effectiveness of implementing certain conservation measures included in the MassDEP RGPCD Functional Equivalence Plan and offer alternative measures. Any analysis must explicitly consider environmental impacts and must produce equal or greater environmental benefits. Suppliers will be able to present:

a. Reasons why specific measures are not cost effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard;
b. Alternative specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP RGPCD Functional Equivalence Plan; and
c. When applicable, an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship.

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* As a private water company, the permittee must demonstrate "Best Effort" to request the Town of Dover adopt and enforce the required ordinance, bylaw or regulation. The Best Effort letter and the final text of the Town ordinance, bylaw or regulation must be submitted to MassDEP.

** As a private water company, if the permittee must apply to the Department of Public Utilities to alter its rate structure in order to implement this requirement, the permittee must submit a letter to MassDEP when the Functional Equivalence Plan is drafted stating that they must apply to DPU and outlining a timetable for the rate change process. Correspondence and the final text of any decision by the DPA must be submitted to MassDEP.

Appendix B – Unaccounted for Water

I. Compliance Plan Requirement

If the permittee fails to achieve and document compliance with the 10% UAW performance standard in its Annual Statistical Report (ASR), then the permittee must file with that ASR an Unaccounted-for-Water Compliance Plan (UAW plan) which shall:

a. meet the requirements set forth below in Section II;
b. include measures to be implemented to meet the performance standard; and
c. include the schedule for implementing such measures.

The filing of a UAW plan shall not constitute a return to compliance, nor shall if affect MassDEP's authority to take action in response to the permittee's failure to meet the performance standard.

If a UAW plan is required, the permittee must:

a. submit information and supporting documentation sufficient to demonstrate compliance with its UAW plan annually at the time it files its ASR; and
b. continue to implement the UAW plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

II. Contents of an UAW Compliance Plan

A permittee that does not meet the 10% UAW performance standard within 2 years (for Colonial, December 31, 2011), has the choice to file a UAW Plan containing measures that the permittee believes will be sufficient to bring the system into compliance with the performance standard (Individual UAW Plan) or may adopt the MassDEP UAW Functional Equivalence Plan that includes mandated Best Management Practices (BMPs).

A permittee that has been unable to meet the 10% UAW performance standard within 5 years (for Colonial, December 31, 2014) must implement the MassDEP UAW Functional Equivalence Plan to be considered functionally equivalent with the performance standard.

At a minimum, all UAW plans must include a detailed:

a. description of the actions taken during the prior calendar year to meet the applicable performance standard;
b. analysis of the cause of the failure to meet the performance standard;
c. description and schedule of the actions that will be taken to meet the performance standard; and
d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

UAW plans may be amended to revise the actions that will be taken to meet the performance standard.

Individual UAW Compliance Plan

Individual UAW Plan will document a plan to adopt and implement measures tailored to the specific needs of the water supply system that the permittee believes will be sufficient to bring the system into compliance with the performance standard within three years. Individual UAW compliance plans may include any of the actions set forth in the MassDEP UAW Functional Equivalence Plan compliance plan below.

MassDEP UAW Functional Equivalence Plan**

In order to be considered functionally equivalent with the UAW performance standard, the permittee must adopt and implement the MassDEP UAW Functional Equivalence Plan that, at a minimum, requires all the following measures:

a. within one year of filing the MassDEP UAW Functional Equivalence Plan, complete a water audit and leak detection survey of the entire system and submit completed audit and survey to MassDEP; within one year of completing the audit and leak detection survey, conduct sufficient repairs to [illegible] all leaks detected in the survey;

APPENDIX D

GIS SCHEMA

Dover Water GIS Data Model

This data model is developed for ArcGIS technology, and it can be set-up either using shapefiles or a geodatabase (SDE, .gdb, .mdb). If shapefiles are used, domains will not be applicable.

Water Distribution System (WaterSystem Dataset)

Water Accounts

Description:	Water Accounts as in billing database.
MS feature name:	**wAccounts (point)**
Metadata:	This layer is to be updated on a regular basis. Dates of when last updates take place must be clearly indicated in the metadata.

Field	Type	Description	Domain
ACCOUNTNUM	TBD	Account number as in billing database	
SVCADDRESS	Text	Address of service	
STATUS	Text	Status of account	Status

Water Hydrants

Description:	Water Hydrants.
MS feature name:	**wHydrant (point)**

Field	Type	Description	Domain
ASSETID	Text	Unique identifier	
LABEL	Text	Label	
YRINST	Short Integer	Year installed	
SVCLIFE	Short Integer	Service life	
STREET	Text	Street	
OPSTATUS	Text	Operational status	Status
OWNER	Text	Owner	Owner
SIZE	Short Integer	Connected Pipe (in)	wHydrantSize
CLASS	Text	Hydrant Class	wHydrantClass
MANUFACT	Text	Hydrant Manufacturer	wHydrantManufacturer
LSTSVC	Date	Date Last Serviced (mm/dd/yyyy)	
LSTFLUSH	Date	Date Last Flushed (mm/dd/yyyy)	
FLUSHROUTE	Text	Flushing Route	
FLUSHORDER	Integer	Indicates the order position of this hydrant as part of the flushing route	
DISTDWEL	Long Integer	Distance of hydrant to dwelling in feet	
COMMENTS	Text	Comments	

SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Mains

Description:	Water Distribution Mains
MS feature name:	**wMains (line)**
Metadata:	Must contain description of how layer was created, and any geoprocessing steps conducted.

Field	Type	Description	Domain
ASSETID	Short Integer	Unique identifier	
LABEL	Text	Label	
DIAMETER	Double	Diameter (inches)	PipeDiameter
MATERIAL	Text	Material	PipeMaterial
YRINST	Short Integer	Year installed	
LENGTH	Double	Length of segment in feet	
STREET	Text	STREET	
SVCLIFE	Short Integer	Estimated Service Life	
HYDMODELID	Double	Hydraulic model ID	
C_VALUE	Double	Hazen Williams C value from hydraulic mode	
HYDMODYR	Integer	Year of last hydraulic model	
ABSQ	Double	Absolute Daily Average Demand Flow (gpm)	
OWNER	Text	Asset Owner	Owner
OPSTATUS	Text	Operational Status	Status
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Main Valves

Description:	Water Main Valves
MS feature name:	**wMainValve (point)**

Field	Type	Description	Domain
ASSETID	Short Integer	Unique identifier	
LABEL	Text	Label	
DIAMETER	Double	Diameter (in)	

TYPE	Text	Valve Type (butterfly, ..)	wValveType
FUNCTION	Text	Valve Function (gate, air release…)	wValveFuction
YRINST	Short Integer	Year Installed	
SVCLIFE	Short Integer	Service Life	
STREET	Text	Street	
OPSTATUS	Text	Operational Status	Status
DIROPEN	Short Integer	Direction to open the valve	Left/Right
TRNS2CLS	Short Integer	Turns to Close	
POSITION	Text	Current Valve Position	Opened/Closed
DEPTH	Double	Valve Depth (ft)	
HASVAULT	Text	Has Vault	Yes/No
OWNER	Text	Asset Owner	Owner
LSTEXER	Date	Date Last exercised	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Manholes

Description:	Water manholes
MS feature name:	**wManholes (point)**

Field	**Type**	**Description**	**Domain**
ASSETID	Short Integer	Unique identifier	
LABEL	Text	Label	
YRINST	Short Integer	Year Installed	
SVCLIFE	Short Integer	Service Life	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Meters

Description:	Water Meters
MS feature name:	**wMeters (point)**

Field	**Type**	**Description**	**Domain**

ASSETID/METERNO	Short Integer	Unique identifier OR meter number	
LABEL	Text	Label	
MAKE	Text	Meter brand or make	
MODEL	Text	Meter model	
YRINST	Short Integer	Year Installed	
SVCLIFE	Short Integer	Service Life	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Private Supply Wells

Description:	Private Water Supply Wells
MS feature name:	**wPrivateSupplyWell (point)**

Field	**Type**	**Description**	**Domain**
WELLID	Text	Identifier	
LABEL	Text	Label	
STREETNUM	Text	Street number	
STREET	Text	Street name	
TOWN	Text	Town	Town
PARCEL	Text	Parcel ID where well is installed	
DATEINST	Date	Date Installed or complete	
WELLUSE	Text	Main use of the well water	wWellUse
TOTDEPTH	Double	Total depth of well in feet	
BEDRKDEPTH	Double	Depth to bedrock in feet	
SCTOPDEPTH	Double	Top Screen Depth (ft)	
SCBOTDEPTH	Double	Bottom Screen Depth (ft)	
PROTECT	Text	Well Head Protected	Yes/No
PUMPTYPE	Text	Pump Type	wPumpType
PUMPHP	Double	Pump horse Power	
ESVCLIFE	Short Integer	Service Life	
OPSTATUS	Text	Operational Status	Status
LSTWORK	Text	Type of work last performed on the well	wWellWork
LSTWKDATE	Date	Date of last work	
COMMENTS	Text	Comments	

SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Public Supply Wells

Description:	Public Water Supply Wells
MS feature name:	**wPublicSupplyWell (point)**

Field	Type	Description	Domain
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
SOURCE_ID	Text	DWP ID	
ZII_NUM	Text	DEP DWP Zone II ID	
YRINST	Short Integer	Year Installed	
CLASS	Text	Class	wWellClass
TOPDEPTH	Double	Top Screen Depth (ft)	
BOTDEPTH	Double	Bottom Screen Depth (ft)	
PROTECT	Text	Well Head Protected	Yes/No
WELLTYPE	Text	Well Type	wWellType
OPSTATUS	Text	Operational Status	Status
OWNER	Text	Asset Owner	Owner
LSTSVC	Date	Date last serviced	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Pump Stations

Description:	Pump Station Facilities
MS feature name:	**wPumpStation (point)**

Field	Type	Description	Domain
ASSETID	Text	Asset Id	
LABEL	Text	Label	
YRINST	Short Integer	Year installed	
STREET	Text	Street	
OWNER	Text	Asset owner	Owner

DISRATE	Double	Discharge Rate (GPM)	
DISPRES	Short Integer	Discharge Pressure (psi)	
NUMPUMPS	Short Integer	Number of Pumps	
PUMPSIZE	Double	Pump Size (in)	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Service Lines

Description:	Water Service Lines
MS feature name:	**wServiceLine (line)**

Field	Type	Description	Domain
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
DIAMETER	Double	Diameter (inches)	PipeDiameter
YRINST	Short Integer	Year Installed	
STREET	Text	Street	
OWNER	Text	Asset Owner	Owner
LINEUSE	Text	Water Line Type	wServiceLineUse
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Service Valves

Description:	Water Service Valves
MS feature name:	**wServiceValve (point)**

Field	Type	Description	Domain
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
DIAMETER	Double	Diameter (in)	PipeDiameter
TYPE	Text	Valve Type	wValveType
FUNCTION	Text	Valve Use	wValveFunction

YRINST	Short Integer	Year Installed	
ESVCLIFE	Short Integer	Service Life	
STREET	Text	Street	
OWNER	Text	Asset Owner	Owner
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Tanks

Description:	Water Storage Tanks
MS feature name:	**wTank (point)**

Field	**Type**	**Description**	**Domain**
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
TYPE	Text	Type	wTankType
CAPACITY	Double	Capacity (MG)	
YRINST	Short Integer	Year Installed	
SVCLIFE	Short Integer	Expected Service Life	
OPSTATUS	Text	Operational Status	Status
OWNER	Text	Asset Owner	Owner
OVERFLOWEL	Double	Overflow Elev (ft)	
LSTSURV	Date	Date Last surveyed	
LSTCLEAN	Date	Date last cleaned	
LSTPAINT	Date	Date last painted	
LSTINSP	Date	Date last inspected	
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Water Treatment Facilities

Description:	Water Treatment Facilities
MS feature name:	**wTreatmentFacility (polygon)**

Field	**Type**	**Description**	**Domain**

ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
CAPACITY	Double	Capacity of facility MGD	
YRINST	Short Integer	Year Installed	
STREET	Text	Street	
OPSTATUS	Text	Operational Status	Status
OWNER	Text	Asset Owner	Owner
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Environmental Monitoring (EnvMonitoring Dataset)

Ground Water Monitoring Wells

Description:	Ground water monitoring wells
MS feature name:	**envGWMonitoringWell (point)**

Field	**Type**	**Description**	**Domain**
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
DIAMETER	double	Diameter of well	
DATEINST	Short Integer	Installation date	
TOPDEPTH	Double	Top Screen Depth (ft)	
BOTDEPTH	Double	Bottom Screen Depth (ft)	
LOGGERID	TBD	Id of associated data logger	
DATA	Text	Data collected	
OWNER	Text	Asset Owner	Owner
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Groundwater Piezometers

Description:	Ground water piezometers
MS feature name:	**envPiezometer (point)**

Field	Type	Description	Domain
ASSETID	Short Integer	Identifier	
LABEL	Text	Label	
DIAMETER	double	Diameter of well	
DATEINST	Short Integer	Installation date	
TOPDEPTH	Double	Top Screen Depth (ft)	
BOTDEPTH	Double	Bottom Screen Depth (ft)	
LOGGERID	TBD	Id of associated data logger	
DATA	Text	Data collected	
OWNER	Text	Asset Owner	Owner
COMMENTS	Text	Comments	
SOURCE	Text	How asset was located	Source
LSTEDITOR	Text	Last editor	
LSTEDITED	Date	Date when last edited	

Domains

Owner

ITEM	Description
MUNICIPAL	Municipal
PRIVATE	Private
STATE	State
OTHER	Other
MWRA	MWRA
DCR	DCR

PipeDiameter

ITEM	Description
.75	3/4"
1	1"
1.25	1 1/4"
1.5	1 1/2"
2	2"
2.5	2 1/2"

3	3"
4	4"
5	5″
6	6"
8	8"
10	10"
12	12"
14	14"
15	15"
16	16"
18	18"
20	20"
24	24"
27	27"
30	30"
36	36"
40	40"
42	42"
48	48"
54	54"
60	60"
66	66"
72	72"
75	75"
0	Unknown
-1	Other

PipeMaterial

ITEM	**Description**
AC	Asbestos Cement
CI	Cast Iron
CLCI	Concrete Lined Cast Iron
CLDI	Concrete Lined Ductile Iron
COP	Copper
DI	Ductile Iron

PVC	Polyvinyl Chloride
HDPE	High Density Polyethylene
STL	Steel
CT	Clay Tile
PE	Polyethylene
PP	Polypropylene
PL	Plastic
GP	Galvanized Pipe
VC	Vitrified Clay
RCP	Reinforced Concrete
FRP	Fiberglass Reinforced
OTHER	Other
UNK	Unknown
ABS	ABS Plastic
CMPA	Corrugated Metal Aluminum
CMPS	Corrugated Metal Steel
PC	Precast Concrete
PCRB	Precast Concrete Ribbed

Service Type

ITEM	**Description**
AGRICULTURAL	Agricultural
COMMERCIAL	Commercial
DOMESTIC	Domestic
FIRE	Fire
INDUSTRIAL	Industrial
MUNICIPAL	Municipal
OTHER	Other
UNK	Unknown

Source

ITEM	**Description**
SURVEY	Survey
DIGITIZED	Digitized Record Drawings
GPS	GPS
APPROXIMATE	Approximate Location

Status

ITEM	Description
ABANDONED	Abandoned
ACTIVE	Active
REMOVED	Removed
PROPOSED	Proposed
UNKNOWN	Unknown

WHydrantClass

ITEM	Description
STANDARD	Standard
DRY	Dry
HIGH	High Pressure
RED	Red
WHITE	White

wHydrantManufacturer

ITEM	Description
AMERICAN DARLING	American Darling
CLOW	Clow Corporation
COREY	Corey
DRESSER	Dresser
EDDY	Eddy
KENNEDY VALVE	Kennedy Valve
M&H VALVE	M&H Valve
M&H VALVE/DRESSER	M&H Valve/Dresser
MUELLER	Mueller Company
OTHER	Other
SURVEY	Survey
TRAVERSE CITY	Traverse City
US PIPE	US Pipe
WATEROUS	Waterous
WOOD-MATTHEWS	Wood-Matthews
UNK	Unknown

wHydrantSize

ITEM	Description
6	6″
8	8″
10	10″
12	12″
14	14″
16	16″
18	18″
20	20″
24	24″

wPumpType

ITEM	Description
BOOSTER	Booster
SUBMERSIBLE	Submersible
VERTICAL	Vertical Turbine

wServiceLineUse

ITEM	Description
AGRICULTURAL	Agricultural
COMMERCIAL	Commercial
DOMESTIC	Domestic
FIRE	Fire
HYDRANT	Hydrant
INDUSTRIAL	Industrial
IRRIGATION	Irrigation
MUNICIPAL	Municipal
UNKNOWN	Unknown

wTankType

ITEM	Description
ELEVATED	Elevated
GROUND	Ground
STANDPIPE	Standpipe

wValveType

ITEM	Description
BALL	Ball
BUTTERFLY	Butterfly
CLA	CLA
COMBINATION	Combination

wValveFunction

ITEM	Description
SPRINKLER	Sprinkler
HYDRANT	Hydrant
BYPASS	Bypass
AIR CONTROL	Air Control
AIR GAP	Air Gap
AIR RELEASE	Air Release
BACKFLOW	Backflow Control
BLOWOFF	Blow Off
DOUBLE CHECK	Double Check
GATE	Gate
DOUBLE CHECK	Double Check
PRESSURE REDUCER	Pressure Reducer
PIV	Post Indicator Valve
VACUUM BREAKER	Vacuum Breaker
UNK	Unknown

wWellClass

ITEM	Description
PRIMARY	Primary
BACKUP	Backup
EMERGENCY	Emergency

wWellType

ITEM	Description
GP	Gravel Packed
T	Tubular
BR	Bedrock
SP	Spring

unknown	Unknown

wWellUse

ITEM	Description
DOMESTIC	
GEOTHERMAL	
DUAL	Domestic and Geothermal
CLOSED LOOP	
INDUSTRIAL	
IRRIGATION	
MONITORING	
TEST WELL	
UNKNOWN	
GW	Community groundwater well
PW	proposed well
NTNC	Non-Transient Non-community
TNC	Transient Non-Community

wWellWork

ITEM	Description
DECOMMISSION	
DEEPEN	
HYDROFRACTURE	
NEW INSTALLATION	
REPAIR	
REPLACEMENT	

APPENDIX E

WATER SAMPLING FIELD DATA SHEETS

Monitoring & Purge Log
11/13/2019

by **A Bayliss**
for **Dover MA: Hydrology Study**

20192428.001A
Town of Dover
Cloudy 20°F

Well ID	MW1	MW15	MW16	MW3	MW4	MW5
Date / Time	11/13/2019	11/12/2019	11/13/2019	11/14/2019	11/14/2019	11/14/2019
Sampling Method	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
MW Casing Dia (inch)	2	2	2	2	2	2
VOC Top of Casing	NM	NM	NM	NM	NM	NM
Depth to Product (ft)	ND	ND	ND	ND	ND	ND
FP Thickness (ft)	ND	ND	ND	ND	ND	ND
Depth to Water (ft)	8.69	8.95	18.24	14.02	8.03	16.25
Depth to Bottom (ft)	25	16.33	0	19	15	23
Volume in MW (gal)	NM	NM	NM	NM	NM	NM
Sampling Data						
Table Comments						
Comments	See coc for sample time	See coc for sample time	See coc for sample time	See coc for sample time	See coc for sample time	See coc for sample time

Well ID	MW13	MW14	MW2	MW7B	MW9	MW9
Date / Time	11/12/2019	11/18/2019	11/13/2019	11/15/2019	11/15/2019	11/15/2019
Sampling Method	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
MW Casing Dia (inch)	2	2	2	2	2	2
VOC Top of Casing	NM	NM	NM	NM	NM	NM
Depth to Product (ft)	ND	ND	ND	ND	ND	ND
FP Thickness (ft)	ND	ND	ND	ND	ND	ND
Depth to Water (ft)	5.55	10.3	10.87	25.21	19.11	4.44
Depth to Bottom (ft)	15.5	18	12	62	25	25
Volume in MW (gal)	NM	NM	NM	NM	NM	NM
Sampling Data						
Table Comments						
Comments	See coc for sample time	Field filtered. See coc for sample time.	See coc for sample time	See coc for sample time.	See coc for sample time	See coc for sample time

Well ID	MW17
Date / Time	11/18/2019
Sampling Method	Low Flow
MW Casing Dia (inch)	2
VOC Top of Casing	NM
Depth to Product (ft)	ND
FP Thickness (ft)	ND
Depth to Water (ft)	7.07
Depth to Bottom (ft)	25
Volume in MW (gal)	NM
Sampling Data	
Table Comments	
Comments	See coc for sample time.

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW1 **Date:** 11/13/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	8.69	ND	25	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
9:00AM	110	8.68	5.3	616	6.7	2.18	1.9	226.3	Not Stable	
9:10AM	110	8.68	5.33	624	6.5	2.88	2.5	217.9	Not Stable	
9:20AM	110	8.68	5.38	643	6.5	3.52	3.4	226.5	Not Stable	
9:30AM	110	8.7	5.41	658	6.3	3.6	2.9	232.4	Not Stable	
9:35AM	110	8.69	5.41	660	6.3	3.64	2.6	233.3	Not Stable	
9:40AM	110	8.69	5.41	665	6.3	3.7	1.8	233.2	Not Stable	
9:45AM	110	8.69	5.41	665	6.2	3.69	1.5	234.3	Not Stable	
9:50AM	110	8.69	5.41	666	5.9	3.65	2.3	233.5	Not Stable	
9:55AM	110	8.69	5.41	667	5.7	3.63	1.4	234.6	Not Stable	
10:00AM	110	8.69	5.41	667	5.7	3.62	1.3	236.5	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Well Condition

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW13 **Date:** 11/12/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

Initial Measurements	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
	5.55	ND	15.5	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
12:45PM	140	6	6.01	399	11.9	7.07	41.5	200.8	Not Stable	
12:55PM	140	6.01	6	403.8	12	7.49	45.6	201.2	Not Stable	
1:10PM	120	6	6	415.4	12.3	7.43	37.6	201.3	Not Stable	
1:20PM	120	6.04	5.99	432.5	11.5	7.37	32.2	203.1	Not Stable	
1:30PM	120	6.05	5.98	450.7	11.7	7.39	30.6	203.9	Not Stable	
1:40PM	120	6.05	5.96	499.9	11.5	7.27	23.1	204	Not Stable	
1:45PM	120	6.05	5.96	507	11.5	7.24	22.5	203.9	Not Stable	
1:50PM	120	6.05	5.94	546	11.7	7.17	20.3	204.4	Not Stable	
1:55PM	120	6.05	5.94	552	11.6	7.15	19.6	204.4	Not Stable	
1:58PM	120	6.05	5.94	557	11.4	7.14	19.3	204.2	Not Stable	
2:01PM	120	6.05	5.93	581	11.3	7.08	17.9	204.4	Not Stable	
2:04PM	120	6.04	5.91	613	11.4	7.01	14.8	203.9	Not Stable	

Sample Data

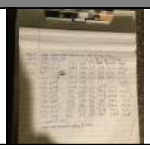
Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Well Condition



Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW14 **Date:** 11/18/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

Initial Measurements	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
	10.3	ND	18	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
10:25AM	100	12.06	6.53	508	8.7	1.79	208.6	42.4		
10:30AM	100	12.46	6.53	509	9	1.76	196.4	41.4		
10:35AM	100	12.53	6.53	509	9.2	1.75	212.6	40.8		
10:40AM	100	12.7	6.52	511	9.4	1.72	158.1	39.5	Stable	
10:45AM	100	12.78	6.52	513	9.4	1.7	163.8	38.6	Stable	
10:50AM	60	12.96	6.53	514	8.8	2.35	159.9	31.4	Stable	
10:55AM	60	13	6.58	538	7.7	3.52	144.3	28	Not Stable	
11:00AM	60	13.35	6.58	539	7.7	3.49	142.6	27.6	Not Stable	
11:05AM	60	13.64	6.58	539	7.7	3.48	141.5	27.5	Stable	
11:10AM	60	13.59	6.57	534	8.6	3.41	246.5	22.9	Stable	
11:15AM	60	13.87	6.53	554	9.1	0.63	175.8	4.7	Not Stable	
11:20AM	60	14.09	6.47	535	9	1.96	155.6	17.6	Not Stable	
11:25AM	60	14.12	6.48	541	9	1.6	162	14.7	Stable	
11:30AM	60	14.2	6.49	550	8.8	0.88	213.8	9.3	Stable	
11:45AM	75	14.52	6.67	518	7.8	2.69	1743	2.8	Not Stable	
11:50AM	75	14.67	6.65	412.5	8.7	0.72	352.1	-9.1	Not Stable	
11:55AM	75	14.32	6.61	402.3	8.6	0.48	336.2	-13.8	Not Stable	
12:00PM	75	14.39	6.6	391.2	8.4	0.42	330.7	-19.5	Not Stable	
12:05PM	75	14.42	6.6	392.6	8.1	0.4	344.5	-21.2	Not Stable	
12:10PM	75	14.53	6.61	391.4	8.3	0.41	332.9	-21.8	Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **Field filtered. See coc for sample time.**

Well Condition

Monitoring & Purge Log
11/13/2019

by **A Bayliss**
for **Dover MA: Hydrology Study**

20192428.001A
Town of Dover
Cloudy 20°F

Good Condition	

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW15 **Date:** 11/12/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	8.95	ND	16.33	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
8:30AM	120	8.95	5.23	1357	13.7	1.3	202.6	176	Not Stable	
9:43AM	120	11.56	5.23	1357	13.7	1.3	202.6	176	Not Stable	
9:48AM	120	11.46	5.2	1431	14.4	1.19	212.5	179.3	Not Stable	
9:53AM	120	11.46	5.2	1453	13.4	1.16	1325	181.3	Not Stable	
10:01AM	120	11.3	5.17	1512	13	1.06	442.6	185.3	Not Stable	
10:08AM	120	11.18	5.17	1528	12.9	1.05	324.5	186	Not Stable	
10:13AM	120	11.11	5.16	1530	13	1.03	175.3	186.4	Not Stable	
10:20AM	120	11.08	5.16	1527	13	1.01	100.2	187.1	Not Stable	
10:33AM	120	11.12	5.16	1529	13	0.99	73.5	190	Not Stable	
10:41AM	120	11.14	5.16	1527	13.1	0.98	78.8	192	Not Stable	
10:50AM	120	11.14	5.16	1526	13.1	0.99	102.6	194.6	Not Stable	
11:00AM	120	11.13	5.16	1522	13.1	0.97	76.5	193.1	Not Stable	
11:08AM	120	11.13	5.16	1523	13.2	0.96	63.4	197.2	Not Stable	
11:15AM	120	11.13	5.16	1518	13.2	0.96	59.1	200.9	Not Stable	
11:20AM	120	11.12	5.16	1523	13.1	0.96	65.6	201.2	Not Stable	
11:25AM	120	11.12	5.15	1525	13.1	0.96	36.6	202.7	Not Stable	
11:30AM	120	11.12	5.15	1525	13.1	0.95	35.1	202.4	Not Stable	

Sample Data

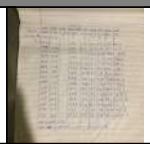
Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Well Condition



Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW16 **Date:** 11/13/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	18.24	ND	0	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
11:45AM	60	18.24	6.78	188.3	7.8	3.95	1266.8	101.7		
12:00PM	60	18.3	6.76	170	7.8	3.95	1345.1	119.1		
12:15PM	60	18.9	6.79	166.6	7.8	4.21	1830.2	117.3		
12:30PM	60	20.06	6.83	182.5	7.7	4.96	2331.9	108.6	Not Stable	
12:40PM	60	20.53	6.85	184.8	7.6	5.85	1942.4	106.8	Not Stable	
12:50AM	60	20.9	6.85	185.2	7.6	5.77	2245	104.9	Not Stable	
12:55PM	60	21.12	6.85	185.3	7.7	5.42	2136.5	104.6	Not Stable	
1:00PM	60	21.27	6.85	185.4	7.5	5.39	1755.9	103.9	Not Stable	
1:05PM	60	21.5	6.85	185.4	7.5	5.16	1431.7	104.7	Not Stable	
1:10PM	60	21.53	6.85	185.2	7.3	5.14	1771.9	104.5	Not Stable	
1:15PM	60	21.55	6.85	185.2	7.3	5.08	1926.8	103.3	Not Stable	
1:20PM	60	21.58	6.85	185.2	7.3	5.11	1836.1	105.8	Not Stable	
1:25PM	60	21.58	6.85	185.2	7.3	5.02	1750.4	105.3	Not Stable	
1:30PM	60	21.53	6.85	185.3	7.3	5.07	1862	104.6	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Well Condition

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW17 **Date:** 11/18/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	7.07	ND	25	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
1:50PM	140	7.65	6.33	417.4	10.2	6.43	1.9	152.4		
2:00PM	140	7.72	6.33	418.3	10.1	6.33	2.7	153.8		
2:10PM	140	7.94	6.33	419.5	9.9	6.34	2.9	154.9		
2:15PM	120	7.84	6.33	418.7	9.8	6.34	2.7	156	Stable	
2:20PM	120	7.72	6.33	419.5	9.6	6.32	2.8	157.3	Stable	
2:25PM	120	7.68	6.33	418	9.6	6.3	3.3	158.3	Stable	
2:30PM	120	7.65	6.14	413.9	9.4	5.02	1.3	171.7	Not Stable	
2:35PM	120	7.65	6.14	413.6	9.3	4.98	1.5	172.7	Not Stable	
2:40PM	120	7.65	6.13	413.4	9.3	4.92	1.3	173.6	Not Stable	
2:45PM	120	7.65	6.13	413.3	9.3	4.87	1.4	174.8	Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **See coc for sample time.**

Well Condition

Good Condition	

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW2 **Date:** 11/13/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	10.87	ND	12	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
3:30PM	90	11.23	5.76	364.8	8	3.08	33.1	148.4	Not Stable	
3:35PM	90	11.31	5.74	370.6	8.3	2.44	35	147.1	Not Stable	
3:40PM	90	11.5	5.75	372.9	9.6	1.42	29.4	136.7	Not Stable	
3:45PM	90	11.8	5.76	376.2	10.3	1.04	30.9	121.6	Not Stable	
3:50PM	90	11.9	5.76	388.4	10.7	0.9	31.4	116.8	Not Stable	
3:55PM	90	12.06	5.75	398.1	10.7	0.83	30.8	116.2	Not Stable	
4:00PM	90	12.12	5.76	413.2	10.6	0.82	36	115.1	Not Stable	
4:05PM	75	12.15	5.76	414.6	10.7	0.83	42	115.3	Not Stable	
4:10PM	75	12.16	5.76	415.4	10.7	0.87	42.8	116.7	Not Stable	
4:15PM	75	12.19	5.74	419.8	10.8	0.95	19.1	123.2	Not Stable	
4:20PM	75	12.23	5.74	424.6	10.8	0.99	20.5	135.6	Not Stable	
4:25PM	75	12.23	5.74	425.1	10.7	1.02	16.8	141.1	Not Stable	
4:30PM	75	21.21	5.73	428.6	10.5	1.08	10.6	145.8	Not Stable	
4:35PM	75	12.21	5.73	429.1	10.5	1.09	8.5	148.2	Not Stable	
4:40PM	75	12.21	5.73	430.5	10.5	1.1	8.8	150.4	Not Stable	
4:45PM	75	12.21	5.73	432.6	10.5	1.09	8.6	152.1	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **See coc for sample time**

Well Condition

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW3 **Date:** 11/14/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	14.02	ND	19	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
9:15AM	110	14.02	5.75	317.7	7.5	6.77	8.6	193.7		
9:20AM	110	14.05	5.75	316.9	7.4	7.24	5	194.9		
9:25AM	110	14.05	5.75	311.8	7.6	6.71	3.1	195.1		
9:30AM	110	14.05	5.75	313.6	7.5	6.68	2.5	195.6	Stable	
9:35AM	110	14.05	5.75	311.3	7.8	6.6	2.2	196.3	Stable	
9:40AM	110	14.05	5.75	312.9	7.9	6.61	2.1	196.7	Stable	
9:45AM	110	14.05	5.74	324	8.1	5.91	1.9	202.8	Stable	
9:50AM	110	14.05	5.74	324.1	8.3	5.9	1.5	203	Stable	
9:55AM	110	14.05	5.74	324.3	8.6	5.88	1.2	203.3	Stable	
10:00AM	110	14.05	5.74	324.7	8.9	5.89	1	203.4	Stable	
10:05AM	110	14.05	5.74	325.8	8.8	5.91	1	203.6	Stable	
10:10AM	110	14.05	5.74	327	8.5	5.94	1	204	Stable	
10:15AM	110	14.05	5.74	328.4	8	5.94	1	204.4	Stable	
10:20AM	110	14.05	5.74	325.9	8.1	5.93	1	204.7	Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Well Condition

Good Condition	

Monitoring & Purge Log
11/13/2019

by **A Bayliss**
for **Dover MA: Hydrology Study**

20192428.001A
Town of Dover
Cloudy 20°F

Low Flow Groundwater Sampling

Well No.: MW4 **Date:** 11/14/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

Initial Measurements	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
	8.03	ND	15	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
12:20PM	120	8.05	6.08	562	10	2.71	19.7	206.6		
12:25PM	120	8.05	5.91	564	10	2.58	19.2	205.9		
12:30PM	120	8.05	5.9	564	10.1	2.52	17.5	206.1		
12:35PM	120	8.09	5.86	563	10.2	2.58	16.7	205.8	Stable	
12:40PM	110	8.13	5.87	565	10.2	2.49	13.8	205.8	Stable	
12:45PM	100	8.26	5.88	570	10	2.19	14.5	205.6	Stable	
12:50PM	100	8.36	5.89	570	10	2.1	15.2	205.6	Stable	
12:55PM	100	8.47	5.89	571	9.7	1.93	14.7	205.8	Stable	
1:00PM	100	10.25	5.89	571	9.6	1.81	15.1	205.9	Stable	
1:05PM	70	14.04	5.88	578	9.7	1.74	13.3	206.5	Stable	
1:10PM	70	14.31	5.87	584	9	1.59	12.2	207.1	Stable	
1:15PM	60	14.26	5.86	591	8.6	1.25	8.5	207.8	Stable	
1:20PM	60	14.31	5.86	598	9.1	1.03	7.5	207.7	Not Stable	
1:25PM	60	14.34	5.86	599	9.5	0.92	6.5	207.7	Not Stable	
1:30PM	60	14.39	5.86	597	9.6	0.91	6.6	207.8	Not Stable	
1:35PM	60	14.4	5.86	598	9.7	0.94	6.6	207.7	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **See coc for sample time**

Well Condition

Good Condition	

Monitoring & Purge Log
11/13/2019

by **A Bayliss**
for **Dover MA: Hydrology Study**

20192428.001A
Town of Dover
Cloudy 20°F

Low Flow Groundwater Sampling

Well No.: MW5 **Date:** 11/14/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

Initial Measurements	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
	16.25	ND	23	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
2:30PM	120	16.25	6.1	559	9.6	4.04	82.7	211.6		
2:35PM	120	16.43	6.11	559	9.7	4.01	65.3	211.6		
2:40PM	120	16.49	6.11	558	9.7	3.99	68.9	211.5		
2:45PM	120	16.52	6.11	559	9.8	3.96	72.5	211.5	Not Stable	
2:50PM	120	16.54	6.1	560	9.7	3.96	61.9	211.5	Not Stable	
2:55PM	120	16.63	6.1	559	9.7	3.93	55.1	211.3	Not Stable	
3:00PM	120	16.64	6.11	561	9.6	4.04	41.6	211.1	Not Stable	
3:05PM	120	16.64	6.11	564	9.6	4.12	57.3	211.3	Not Stable	
3:10PM	100	16.66	6.17	564	9.1	5.8	27.9	214.2	Not Stable	
3:15PM	100	16.66	6.13	563	9.2	4.86	29	213.8	Not Stable	
3:20PM	100	16.66	6.13	563	9.2	4.83	27.5	213.9	Not Stable	
3:25PM	100	16.66	6.13	562	9.1	4.87	28.6	213.8	Not Stable	
3:30PM	100	16.66	6.13	564	9.2	4.91	26.1	213.9	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **See coc for sample time**

Well Condition

Good Condition	

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW7B **Date:** 11/15/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	25.21	ND	62	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
10:45AM	120	33.06	5.8	402.1	10.4	8.65	2	225		
10:50AM	120	34.24	5.8	402.7	10.2	8.6	19.9	227.6		
10:55AM	120	34.35	5.8	403.8	10.3	8.38	6.5	227.8		
11:00AM	120	34.48	5.8	402.9	10.4	8.39	6.7	228.8	Not Stable	
11:05AM	120	35.24	5.81	403.7	10.3	8.17	24.4	228.6	Not Stable	
11:10AM	120	35.5	5.81	403.3	10.3	8.2	24.9	230.4	Not Stable	
11:15AM	120	35.53	5.81	403.6	10.3	8.22	7.7	230.6	Not Stable	
11:20AM	120	35.55	5.81	403.2	10.3	8.24	7.4	230.8	Not Stable	
11:25AM	120	35.57	5.81	403.7	10.2	8.3	7.5	230.9	Not Stable	
11:30AM	120	35.6	5.81	403.4	10.2	8.22	7.6	231.1	Not Stable	
11:35AM	120	35.6	5.81	403.1	10.3	8.68	7.4	232.6	Not Stable	
11:40AM	120	35.6	5.81	403.4	10.3	8.7	7.3	232.6	Not Stable	
11:45AM	120	35.6	5.81	403.1	10.3	8.68	7.8	232.8	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: **See coc for sample time.**

Well Condition

Good Condition	

Monitoring & Purge Log
11/13/2019

20192428.001A
Town of Dover
Cloudy 20°F

by **A Bayliss**
for **Dover MA: Hydrology Study**

Low Flow Groundwater Sampling

Well No.: MW9 **Date:** 11/15/2019 **Casing Diam (in):** 2

TOC PID (ppmv): NM **Bkgnd PID (ppmv):** NM

	DTW (ft):	DTP (ft):	DTB (ft):	Prod Thickness (ft):
Initial Measurements	19.11	ND	25	ND

Time	Flow Rate (mL/min)	Depth to Water (ft)	pH	Specific Conductivity (mS/cm)	Temp (deg C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	ORP (mV)	TDS (mg/L)
9:06AM	100	19.31	6.88	57.5	8.5	9.92	8.9	185.5		
9:10AM	100	19.35	6.04	54.3	8.8	9.68	10.4	193.5		
9:15AM	100	19.38	5.9	53.6	8.9	9.63	9.9	196.6		
9:20AM	100	19.39	5.81	53.4	8.9	9.61	8.8	199.4	Not Stable	
9:25AM	100	19.38	5.79	53.1	9	9.62	8.7	201.4	Stable	
9:30AM	100	19.38	5.76	53	9	9.64	8	202.1	Stable	
9:35AM	100	19.38	5.75	53.1	9.1	9.61	6.9	203	Stable	
9:40AM	100	19.38	5.75	53	9.1	9.61	6.6	204	Stable	
9:45AM	100	19.38	5.76	53.1	9.1	9.59	5.9	204.6	Stable	
9:50AM	100	19.38	5.74	53	9.1	9.55	5.2	205.7	Stable	
9:55AM	100	19.38	5.72	53	9	9.47	4.8	206.2	Stable	
10:00AM	100	19.38	5.7	52.7	9	9.36	3.8	207.1	Stable	
1:15PM	150	4.44	6.81	334.8	11.5	7.85	16	216.2		
1:20PM	150	4.67	6.81	329.1	11.8	7.88	12.7	217.8		
1:25PM	150	4.8	6.82	328.1	11.2	7.82	12.3	218		
1:30PM	150	5.32	6.82	314.8	11.2	7.79	6.9	217.2	Not Stable	
1:35PM	125	5.76	6.82	302.7	11.2	7.76	4.7	217.5	Not Stable	
1:40PM	125	5.66	6.82	302.9	11.2	7.72	4.1	215.3	Not Stable	
1:45PM	125	5.66	6.82	302.9	11.2	7.81	4.6	214.6	Not Stable	
1:50PM	125	5.69	6.83	302.8	11.3	7.81	3.5	213.6	Not Stable	
1:55PM	125	5.74	6.83	302.8	11.3	7.79	4.1	213.7	Not Stable	

Sample Data

Sample ID: **Sample Time:** **Sample End Time:** N/A

Sampler: **Pre-Sample DTW:** NM **Post-Sample DTW:** NM

Duplicate ID: N/A **Duplicate Sample Time:** N/A **MS/MSD:** N/A

Remarks: See coc for sample time

Monitoring & Purge Log
11/13/2019

by **A Bayliss**
for **Dover MA: Hydrology Study**

20192428.001A
Town of Dover
Cloudy 20°F

Well Condition	
Good Condition	
Good Condition	

APPENDIX F

LABORATORY ANALYTICAL REPORTS

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0918

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. 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® ANALYTICAL LABORATORY

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0918

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-1	19K0918-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 4500 H B	

con-test® 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.

EPA 524.2

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:

Chloromethane
B246771-BS1

SM 21-22 4500 NO2 B

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BSD1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0918-01[MW-1], B246227-DUP1

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0918

Date Received: 11/15/2019

Field Sample #: MW-1
Sampled: 11/13/2019 10:00

Sample ID: 19K0918-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.30	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:54	TBC
Sodium	97	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:54	TBC

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0918

Date Received: 11/15/2019

Field Sample #: MW-1
Sampled: 11/13/2019 10:00

Sample ID: 19K0918-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	170	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 18:48	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @22.2°C	5.7		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:16	AIA

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0918

Date Received: 11/15/2019

Field Sample #: MW-1 | Sampled: 11/13/2019 10:00

Sample ID: 19K0918-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0918

Date Received: 11/15/2019

Field Sample #: MW-1 | Sampled: 11/13/2019 10:00

Sample ID: 19K0918-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:57	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	96.6	80-120		11/22/19 23:57
1,2-Dichlorobenzene-d4	89.5	80-120		11/22/19 23:57

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0918

Date Received: 11/15/2019

Field Sample #: MW-1
Sampled: 11/13/2019 10:00

Sample ID: 19K0918-01

Sample Matrix: Ground Water

E353.2

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate-Nitrite (N)	2.06	0.04	mg/L	2		E353.2		11/19/19 17:04	PEL

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Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0918-01 [MW-1]	B246593	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0918-01 [MW-1]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0918-01 [MW-1]	B246771	5	5.00	11/22/19

SM 21-22 4500 NO2 B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0918-01 [MW-1]	B246244	50.0	50.0	11/15/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0918-01 [MW-1]	B246227	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246593 - EPA 200.7										
Blank (B246593-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246593-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.469	0.010	mg/L	0.500		93.7	85-115			
Sodium	3.86	2.0	mg/L	4.00		96.5	85-115			
LCS Dup (B246593-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.473	0.010	mg/L	0.500		94.6	85-115	0.954	20	
Sodium	3.90	2.0	mg/L	4.00		97.5	85-115	1.05	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246227 - SM21-22 4500 H B												
LCS (B246227-BS1)				Prepared & Analyzed: 11/15/19								
pH	6.05		pH Units	6.00		101		90-110				
Duplicate (B246227-DUP1)	**Source: 19K0918-01**			Prepared & Analyzed: 11/15/19								
pH	5.7		pH Units		5.7				0.106		5	H-05
Batch B246244 - SM 21-22 4500 NO2 B												
Blank (B246244-BLK1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L									
LCS (B246244-BS1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.077	0.010	mg/L	0.100		**77.2**	*	86.8-110				L-07
LCS Dup (B246244-BSD1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.088	0.010	mg/L	0.100		87.9		86.8-110	**13.0**	*	8.34	R-05
Batch B246842 - EPA 300.0												
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19								
Chloride	ND	1.0	mg/L									
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110				
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138		20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM 21-22 4500 NO2 B in Water	
Nitrite as N	CT,NH,NY,ME,NC,VA,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

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KAF

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http://www.contestlabs.com

19/10918

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: ~~hydrology Study~~
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: bohc@dovorma.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Time	Date	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	Fe					
1	MW-1	1000	11/13/19	GRAB	GW	U	3		5			X	X	X	X	X	X	X					
2	~~Trip Blank~~		11/13/19				3	(AB)						X									

Relinquished by: (signature) — Date/Time: 1800 11/13/19
Received by: (signature) KLF Fridge — Date/Time: 1800 11/13/19
Relinquished by: (signature) — Date/Time: 0945 11/15
Received by: (signature) — Date/Time: 11/15 945
Relinquished by: (signature) — Date/Time:
Received by: (signature) — Date/Time:
Relinquished by: (signature) — Date/Time:
Received by: (signature) — Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GT
Other

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 [X] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other
[ ] Chromatogram
[ ] AIHA-LAP,LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

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
*Contest 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)
NONE

[2] Preservation Code

Comments: only run TB ~~VOCs~~ if VOC detects

Disclaimer: Con-Test Labs 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. Cor Test values your partnership on each project and will try to assist with missing information, but will not l held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By ZDA Date 11/15/19 Time 9:45

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

Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C ZDA 11-15-19 ST By Gun # 5 Actual Temp - 4.6

By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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? N/A Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? ZDA 11/15/19 ST Who was notified? IRMG

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid pH<2 Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0914

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0914

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-2	19K0914-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 4500 H B	

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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 524.2

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:

Chloromethane
B246771-BS1

SM 21-22 4500 NO2 B

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BSD1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0914-01[MW-2]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0914

Date Received: 11/15/2019

Field Sample #: MW-2
Sampled: 11/13/2019 16:45

Sample ID: 19K0914-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.10	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:49	TBC
Sodium	70	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:49	TBC

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0914

Date Received: 11/15/2019

Field Sample #: MW-2
Sampled: 11/13/2019 16:45

Sample ID: 19K0914-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	100	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 16:55	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @19.8°C	5.6		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 20:23	AIA

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0914

Date Received: 11/15/2019

Field Sample #: MW-2 | Sampled: 11/13/2019 16:45

Sample ID: 19K0914-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0914

Date Received: 11/15/2019

Field Sample #: MW-2 | Sampled: 11/13/2019 16:45

Sample ID: 19K0914-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:04	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.3	80-120		11/22/19 23:04
1,2-Dichlorobenzene-d4	86.6	80-120		11/22/19 23:04

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0914

Date Received: 11/15/2019

Field Sample #: MW-2
Sampled: 11/13/2019 16:45

Sample ID: 19K0914-01

Sample Matrix: Ground Water

E353.2

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate-Nitrite (N)	0.26	0.02	mg/L	1		E353.2		11/19/19 17:11	PEL

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

Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0914-01 [MW-2]	B246593	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0914-01 [MW-2]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0914-01 [MW-2]	B246771	5	5.00	11/22/19

SM 21-22 4500 NO2 B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0914-01 [MW-2]	B246244	50.0	50.0	11/15/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0914-01 [MW-2]	B246209	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246593 - EPA 200.7										
Blank (B246593-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246593-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.469	0.010	mg/L	0.500		93.7	85-115			
Sodium	3.86	2.0	mg/L	4.00		96.5	85-115			
LCS Dup (B246593-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.473	0.010	mg/L	0.500		94.6	85-115	0.954	20	
Sodium	3.90	2.0	mg/L	4.00		97.5	85-115	1.05	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246209 - SM21-22 4500 H B												
LCS (B246209-BS1)				Prepared & Analyzed: 11/15/19								
pH	6.05		pH Units	6.00		101		90-110				
Batch B246244 - SM 21-22 4500 NO2 B												
Blank (B246244-BLK1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L									
LCS (B246244-BS1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.077	0.010	mg/L	0.100		**77.2**	*	86.8-110				L-07
LCS Dup (B246244-BSD1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.088	0.010	mg/L	0.100		87.9		86.8-110	**13.0**	*	8.34	R-05
Batch B246842 - EPA 300.0												
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19								
Chloride	ND	1.0	mg/L									
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110				
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138		20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM 21-22 4500 NO2 B in Water	
Nitrite as N	CT,NH,NY,ME,NC,VA,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

HAF

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Email: info@contestlabs.com

http://www.contestlabs.com

1940914

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: ~~hydrology~~ Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovermo.org
Sampled By: Andy Bayliss

Requested Turnaround Time
7-Day [X] 10-Day [ ]
PFAS 10-Day (std) [ ] Due Date:

Rush-Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Data Delivery
Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	O Nitrate	O Nitrite	H VOC by 542.2	N Manganese	N Sodium	O Chloride	O pH
	MW-2	11/13/19	1615	GRAB	GW	U	3		5			X	X	X	X	X	X	X
	~~Trip Blank~~	11/13/19		ONLY	RUN		1	if		VOC's				X				
										detected								
										in Sample								

[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
*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
BL	11/13/19 1800
Received by: (signature) KLF Fridge	11/13/19 1800
Relinquished by: (signature)	11/15 0945
Received by: (signature)	11/15/19 945
Relinquished by: (signature)	
Received by: (signature)	
Relinquished by: (signature)	
Received by: (signature)	

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
CT
Other

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 [X] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other
[ ] Chromatogram
[ ] AIHA-LAP,LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con Test values your partnership on each project and will try to assist with missing information, but will not b held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Weinfelder **Received By** ADA **Date** 11/15/19 **Time** _____

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

By Gun # 5 Actual Temp - 4.6

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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? N/A Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? ATDA 11/15/19 Who was notified? IRMA

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid pH<2 Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
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December 2, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0916

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 12/2/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0916

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-3	19K0916-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 4500 H B	
Trip Blank	19K0916-02	Trip Blank Water		-	
Field Blank	19K0916-03	Ground Water		EPA 180.1	
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 2540C	
				SM21-22 4500 H B	

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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 524.2

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:

Chloromethane
B246771-BS1

SM 21-22 4500 NO2 B

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BSD1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0916-01[MW-3], 19K0916-03[Field Blank]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: MW-3
Sampled: 11/14/2019 10:30

Sample ID: 19K0916-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:07	TBC
Sodium	26	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:07	TBC

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: MW-3
Sampled: 11/14/2019 10:30

Sample ID: 19K0916-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	58	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 17:40	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @18.7°C	5.7		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:16	AIA

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: MW-3 | Sampled: 11/14/2019 10:30

Sample ID: 19K0916-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: MW-3 | Sampled: 11/14/2019 10:30

Sample ID: 19K0916-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 23:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	94.6	80-120		11/22/19 23:30
1,2-Dichlorobenzene-d4	87.1	80-120		11/22/19 23:30

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

Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: MW-3
Sampled: 11/14/2019 10:30

Sample ID: 19K0916-01

Sample Matrix: Ground Water

E300.0

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as Nitrogen	6.69	0.50	mg/L	10		E300.0		11/27/19 1:26	PEL

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:14	TBC
Sodium	ND	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:14	TBC

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	1.0	mg/L	1		EPA 300.0	11/24/19	11/24/19 18:03	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @21.2°C	5.9		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:16	AIA
Turbidity	ND	0.50	NTU	1		EPA 180.1	11/15/19	11/15/19 21:45	KMV

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Dissolved Solids	ND	10	mg/L	1		SM21-22 2540C	11/18/19	11/18/19 13:15	LL

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:27	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.9	80-120		11/22/19 16:27
1,2-Dichlorobenzene-d4	84.6	80-120		11/22/19 16:27

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

Project Location: Dover, MA
Sample Description:
Work Order: 19K0916

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/14/2019 10:00

Sample ID: 19K0916-03

Sample Matrix: Ground Water

E300.0

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as Nitrogen	1.64	0.50	mg/L	10		E300.0		11/27/19 1:34	PEL

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Sample Extraction Data

EPA 180.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0916-03 [Field Blank]	B246212	25.0	25.0	11/15/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0916-01 [MW-3]	B246597	50.0	50.0	11/20/19
19K0916-03 [Field Blank]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0916-01 [MW-3]	B246842	10.0	10.0	11/24/19
19K0916-03 [Field Blank]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0916-01 [MW-3]	B246771	5	5.00	11/22/19
19K0916-03 [Field Blank]	B246771	5	5.00	11/22/19

SM 21-22 4500 NO2 B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0916-01 [MW-3]	B246244	50.0	50.0	11/15/19
19K0916-03 [Field Blank]	B246244	50.0	50.0	11/15/19

SM21-22 2540C

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0916-03 [Field Blank]	B246284	50.0	11/18/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0916-01 [MW-3]	B246227	50.0	11/15/19
19K0916-03 [Field Blank]	B246227	50.0	11/15/19

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

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246212 - EPA 180.1												
Blank (B246212-BLK1)				Prepared & Analyzed: 11/15/19								
Turbidity	ND	0.50	NTU									
LCS (B246212-BS1)				Prepared & Analyzed: 11/15/19								
Turbidity	3.9		NTU	4.00		97.2		90-110				
LCS Dup (B246212-BSD1)				Prepared & Analyzed: 11/15/19								
Turbidity	3.9		NTU	4.00		98.2		90-110	1.02		5	
Batch B246227 - SM21-22 4500 H B												
LCS (B246227-BS1)				Prepared & Analyzed: 11/15/19								
pH	6.05		pH Units	6.00		101		90-110				
Batch B246244 - SM 21-22 4500 NO2 B												
Blank (B246244-BLK1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L									
LCS (B246244-BS1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.077	0.010	mg/L	0.100		**77.2**	*	86.8-110				L-07
LCS Dup (B246244-BSD1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.088	0.010	mg/L	0.100		87.9		86.8-110	**13.0**	*	8.34	R-05
Duplicate (B246244-DUP1)	**Source: 19K0916-01**			Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L		ND				NC		39.6	
Matrix Spike (B246244-MS1)	**Source: 19K0916-01**			Prepared & Analyzed: 11/15/19								
Nitrite as N	0.082	0.010	mg/L	0.100	ND	82.4		53.7-130				
Batch B246842 - EPA 300.0												
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19								
Chloride	ND	1.0	mg/L									
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110				
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138		20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246284 - SM21-22 2540C										
Blank (B246284-BLK1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	ND	10	mg/L							
LCS (B246284-BS1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	270	10	mg/L	293		91.5	59.4-118			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 180.1 in Water	
Turbidity	NC
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM 21-22 4500 NO2 B in Water	
Nitrite as N	CT,NH,NY,ME,NC,VA,RI
SM21-22 2540C in Water	
Total Dissolved Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

HAF

Phone: 413-525-2332 19H0916
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology study
Project Location: Dover MA: ~~hydrology~~ study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@doverma.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	TDS	TSS	Turbidity		
1	MW-3	11/14/19		GRAB	GW	U	3		5			X	X	X	X	X	X	X				
2	~~Trip Blank~~	11/14/19												X								
3	Field Blank	11/14/19		GRAB	GW	U	3		7			X	X	X	X	X	X	X	X	X		

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

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

[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) NONE

	Date/Time:
Relinquished by: (signature)	11/14/19 1800
Received by: (signature) KLF Fridge	11/14/19 1800
Relinquished by: (signature)	11/15/945
Received by: (signature)	11/15/19 945
Relinquished by: (signature)	
Received by: (signature)	
Relinquished by: (signature)	
Received by: (signature)	

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GW
Other:

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments: only run TB if VOCs detected

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By LDA Date 11/15/19 Time 9:45

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 4.6 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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 Project T Analysis T ID's T Sampler Name T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? N/A Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F T LDA 11/15/19 Who was notified? IRM

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid pH<2 Base _____

Vials	#	Containers:	#		#		#
Unp-	LDA 11.15.19	1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic	LDA 11.15.19	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

*Times taken from sample labels.

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January 6, 2020

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0907

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 1/6/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0907

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-5	19K0907-01	Ground Water		E353.2	MA M-CT007/CT PH-0618/NY11301
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 4500 H B	
Trip Blank	19K0907-02	Trip Blank Water		-	

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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 524.2

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:

Chloromethane
B246462-BS1

SM 21-22 4500 NO2 B

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BSD1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0907-01[MW-5]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA
Sample Description:
Work Order: 19K0907

Date Received: 11/15/2019

Field Sample #: MW-5
Sampled: 11/14/2019 15:30

Sample ID: 19K0907-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.24	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:39	TBC
Sodium	58	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:39	TBC

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA
Sample Description:
Work Order: 19K0907

Date Received: 11/15/2019

Field Sample #: MW-5
Sampled: 11/14/2019 15:30

Sample ID: 19K0907-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	160	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 12:03	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @20.9°C	5.8		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 20:23	AIA

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0907

Date Received: 11/15/2019

Field Sample #: MW-5 | Sampled: 11/14/2019 15:30

Sample ID: 19K0907-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0907

Date Received: 11/15/2019

Field Sample #: MW-5 | Sampled: 11/14/2019 15:30

Sample ID: 19K0907-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:45	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	95.2	80-120		11/20/19 19:45
1,2-Dichlorobenzene-d4	85.4	80-120		11/20/19 19:45

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

Project Location: Dover, MA
Sample Description:
Work Order: 19K0907

Date Received: 11/15/2019

Field Sample #: MW-5
Sampled: 11/14/2019 15:30

Sample ID: 19K0907-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	<0.02	0.02	mg/L	1		E353.2		11/18/19 0:00	PEL

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Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0907-01 [MW-5]	B246593	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0907-01 [MW-5]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0907-01 [MW-5]	B246462	5	5.00	11/19/19

SM 21-22 4500 NO2 B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0907-01 [MW-5]	B246244	50.0	50.0	11/15/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0907-01 [MW-5]	B246209	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246593 - EPA 200.7										
Blank (B246593-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246593-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.469	0.010	mg/L	0.500		93.7	85-115			
Sodium	3.86	2.0	mg/L	4.00		96.5	85-115			
LCS Dup (B246593-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.473	0.010	mg/L	0.500		94.6	85-115	0.954	20	
Sodium	3.90	2.0	mg/L	4.00		97.5	85-115	1.05	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246209 - SM21-22 4500 H B												
LCS (B246209-BS1)				Prepared & Analyzed: 11/15/19								
pH	6.05		pH Units	6.00		101		90-110				
Batch B246244 - SM 21-22 4500 NO2 B												
Blank (B246244-BLK1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L									
LCS (B246244-BS1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.077	0.010	mg/L	0.100		**77.2**	*	86.8-110				L-07
LCS Dup (B246244-BSD1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.088	0.010	mg/L	0.100		87.9		86.8-110	**13.0**	*	8.34	R-05
Batch B246842 - EPA 300.0												
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19								
Chloride	ND	1.0	mg/L									
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110				
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138		20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2											
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*24.0*		µg/L	25.0		96.0		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.0*		µg/L	25.0		84.0		80-120			
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19							
Acetone	81	10	µg/L	100		81.0		70-130			
tert-Amyl Methyl Ether (TAME)	11	0.50	µg/L	10.0		106		70-130			
Benzene	10	0.50	µg/L	10.0		102		70-130			
Bromobenzene	9.5	0.50	µg/L	10.0		95.0		70-130			
Bromochloromethane	10	0.50	µg/L	10.0		105		70-130			
Bromodichloromethane	10	0.50	µg/L	10.0		102		70-130			
Bromoform	11	0.50	µg/L	10.0		112		70-130			
Bromomethane	9.2	2.0	µg/L	10.0		92.0		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		104		70-130			
tert-Butyl Alcohol (TBA)	96	5.0	µg/L	100		95.6		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		93.8		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		108		70-130			
tert-Butylbenzene	11	0.50	µg/L	10.0		107		70-130			
tert-Butyl Ethyl Ether (TBEE)	11	0.50	µg/L	10.0		111		70-130			
Carbon Disulfide	98	5.0	µg/L	100		97.5		70-130			
Carbon Tetrachloride	10	0.50	µg/L	10.0		101		70-130			
Chlorobenzene	10	0.50	µg/L	10.0		102		70-130			
Chloroethane	10	0.50	µg/L	10.0		103		70-130			
Chloroform	9.7	0.50	µg/L	10.0		97.3		70-130			
Chloromethane	15	2.0	µg/L	10.0		**154**	*	70-130			L-01
2-Chlorotoluene	9.6	0.50	µg/L	10.0		95.5		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		101		70-130			
Dibromochloromethane	10	0.50	µg/L	10.0		104		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	11	2.0	µg/L	10.0		109		70-130			
1,2-Dibromoethane (EDB)	10	0.50	µg/L	10.0		99.7		70-130			
Dibromomethane	10	0.50	µg/L	10.0		100		70-130			
1,2-Dichlorobenzene	9.5	0.50	µg/L	10.0		95.2		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
1,3-Dichlorobenzene	9.8	0.50	µg/L	10.0		97.6	70-130			
1,4-Dichlorobenzene	9.8	0.50	µg/L	10.0		98.0	70-130			
Dichlorodifluoromethane (Freon 12)	12	0.50	µg/L	10.0		125	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		107	70-130			
1,2-Dichloroethane	8.9	0.50	µg/L	10.0		89.2	70-130			
1,1-Dichloroethylene	9.1	0.50	µg/L	10.0		91.0	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		101	70-130			
trans-1,2-Dichloroethylene	9.4	0.50	µg/L	10.0		93.7	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		112	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		103	70-130			
2,2-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
1,1-Dichloropropene	11	0.50	µg/L	10.0		105	70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		109	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		115	70-130			
Diethyl Ether	9.4	0.50	µg/L	10.0		94.5	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		104	70-130			
Ethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Hexachlorobutadiene	11	0.50	µg/L	10.0		105	70-130			
2-Hexanone (MBK)	100	5.0	µg/L	100		102	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		103	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.8	0.50	µg/L	10.0		98.1	70-130			
Methylene Chloride	8.7	0.50	µg/L	10.0		87.4	70-130			
4-Methyl-2-pentanone (MIBK)	100	5.0	µg/L	100		101	70-130			
Naphthalene	8.5	1.0	µg/L	10.0		85.0	70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		104	70-130			
Styrene	11	0.50	µg/L	10.0		106	70-130			
1,1,1,2-Tetrachloroethane	11	0.50	µg/L	10.0		108	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		100	70-130			
Tetrachloroethylene	9.8	0.50	µg/L	10.0		98.2	70-130			
Tetrahydrofuran	12	2.0	µg/L	10.0		118	70-130			
Toluene	9.9	0.50	µg/L	10.0		98.7	70-130			
1,2,3-Trichlorobenzene	8.8	0.50	µg/L	10.0		87.6	70-130			
1,2,4-Trichlorobenzene	9.0	0.50	µg/L	10.0		90.2	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		97.1	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		102	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		100	70-130			
Trichlorofluoromethane (Freon 11)	9.0	0.50	µg/L	10.0		89.9	70-130			
1,2,3-Trichloropropane	9.6	0.50	µg/L	10.0		95.7	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		88.8	70-130			
1,2,4-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		108	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		118	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		98.3	70-130			
o-Xylene	10	0.50	µg/L	10.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.9*		µg/L	25.0		104	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.3*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM 21-22 4500 NO2 B in Water	
Nitrite as N	CT,NH,NY,ME,NC,VA,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test® ANALYTICAL LABORATORY

http://www.contestlabs.com

Doc # 381 Rev 2_06262019

Phone: 413-525-2332 19H0907

Fax: 413-525-6405

Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

N/A F

Company Name: Kleinfelder

Address: Suite 110 - 4 Technology Dr, Westborough, MA

Phone: 508-370-8256

Project Name: Dover MA: hydrology Study

Project Location: Dover MA: ~~hydrology Study~~

Project Number: 20192428.001A

Project Manager: Kirsten Ryan

Con-Test Quote Name/Number:

Invoice Recipient: boh@doverma.org

Sampled By: Andy Bayliss

Requested Turnaround Time

7-Day [X] 10-Day [ ]

PFAS 10-Day (std) [ ] Due Date:

Rush-Approval Required

1-Day [ ] 3-Day [ ]

2-Day [ ] 4-Day [ ]

Dissolved Metals Samples

○ Field Filtered

○ Lab to Filter

Orthophosphate Samples

○ Field Filtered

○ Lab to Filter

Data Delivery

Format: PDF [X] EXCEL [X]

Other:

CLP Like Data Pkg Required: [ ]

Email To: KRyan@Kleinfelder.com

Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	~~Ending~~ Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	[2]H
1	MW-5	11/14/19	1530	GRAB	GW	U	3		5			X	X	X	X	X	X	X
2	~~Trip~~ Blank	11/14/19					1							X				

only ran if sample detection

Relinquished by: (signature) — Date/Time: 11/14/19 1800

Received by: (signature) KLF Fridge — Date/Time: 11/14/19 1800

Relinquished by: (signature) — Date/Time: 11/15 0945

Received by: (signature) — Date/Time: 11/15/19 945

Relinquished by: (signature) — Date/Time:

Received by: (signature) — Date/Time:

Relinquished by: (signature) — Date/Time:

Received by: (signature) — Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements

MA

CT

Other:

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 [X] MWRA [ ] WRTA [ ]

Federal [ ] 21 J [ ] School [ ]

City [ ] Brownfield [ ] MBTA [ ]

Other

[ ] Chromatogram

[ ] *AIHA-LAP,LLC*

PCB ONLY

[ ] Soxhlet

[ ] Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

[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

*Contest 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) NONE

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By ZDA Date 11/15/19 Time 9:45

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 4.6 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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? _____

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid T~~L~~ ZDA 111519 Base ~~F~~ ZDA 11.15.19

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic	1	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:

con-test® ANALYTICAL LABORATORY
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November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0933

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. 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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0933

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-7b	19K0933-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Field Blank	19K0933-02	Trip Blank Water		EPA 524.2	

con-test® ANALYTICAL LABORATORY

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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 524.2

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:

Chloromethane
B246771-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0933-01[MW-7b]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: MW-7b
Sampled: 11/15/2019 12:00

Sample ID: 19K0933-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.11	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:20	TBC
Sodium	65	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:20	TBC

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: MW-7b | Sampled: 11/15/2019 12:00

Sample ID: 19K0933-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	110	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 19:33	IS
Nitrate as N	0.66	0.10	mg/L	1		EPA 300.0	11/17/19	11/17/19 8:40	KMV
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/17/19	11/17/19 8:40	KMV
pH @18.2°C	5.5		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:40	AIA

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: MW-7b | Sampled: 11/15/2019 12:00

Sample ID: 19K0933-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: MW-7b | Sampled: 11/15/2019 12:00

Sample ID: 19K0933-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:23	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.7	80-120		11/23/19 0:23
1,2-Dichlorobenzene-d4	86.3	80-120		11/23/19 0:23

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/15/2019 00:00

Sample ID: 19K0933-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0933

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/15/2019 00:00

Sample ID: 19K0933-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:20	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.5	80-120		11/22/19 17:20
1,2-Dichlorobenzene-d4	84.0	80-120		11/22/19 17:20

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

Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0933-01 [MW-7b]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0933-01 [MW-7b]	B246203	10.0	10.0	11/17/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0933-01 [MW-7b]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0933-01 [MW-7b]	B246771	5	5.00	11/22/19
19K0933-02 [Field Blank]	B246771	5	5.00	11/22/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0933-01 [MW-7b]	B246229	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246203 - EPA 300.0										
Blank (B246203-BLK1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B246203-BS1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		95.4	90-110			
Nitrite as N	0.467	0.100	mg/L	0.500		93.3	90-110			
LCS Dup (B246203-BSD1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		96.2	90-110	0.752	20	
Nitrite as N	0.468	0.100	mg/L	0.500		93.5	90-110	0.214	20	
Batch B246229 - SM21-22 4500 H B										
LCS (B246229-BS1)				Prepared & Analyzed: 11/15/19						
pH	6.04		pH Units	6.00		101	90-110			
Batch B246842 - EPA 300.0										
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19						
Chloride	ND	1.0	mg/L							
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110			
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110	0.0138	20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

19K0933

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: hydrology Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovermo.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	pH					
01	MW-76	11/15/19	12:00	GRAB	GW	U	3		5			X	X	X	X	X	X	X					
08	Field Blank	11/15/19					1							X									

[2] Preservation Code
O O H N N O

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
*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
	11/15/19 1500
Received by: (signature)	Date/Time:
	11/15 15:00
Relinquished by: (signature)	Date/Time:
	11/15 6:45
Received by: (signature) 3.9	Date/Time:
	11/15/19 1845
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
CT
Other:

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By BLF Date 11/15/19 Time 1845

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

Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.9°C

By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

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? T Who was notified? Katie

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid IpHz Base NA

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
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November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0936

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0936

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-9	19K0936-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K0936-02	Trip Blank Water		EPA 524.2	
Field Blank	19K0936-03	Field Blank		EPA 180.1	
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 2540C	
				SM21-22 4500 H B	

con-test® ANALYTICAL LABORATORY

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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 524.2

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:

Chloromethane
B246771-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0936-01[MW-9], 19K0936-03[Field Blank], B246229-DUP1

R-02

Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

Analyte & Samples(s) Qualified:

pH
B246229-DUP1

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: MW-9
Sampled: 11/15/2019 10:30

Sample ID: 19K0936-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:49	TBC
Sodium	5.0	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:49	TBC

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: MW-9 | Sampled: 11/15/2019 10:30

Sample ID: 19K0936-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	10	mg/L	10		EPA 300.0	11/26/19	11/26/19 10:00	IS
Nitrate as N	ND	0.10	mg/L	1		EPA 300.0	11/17/19	11/17/19 7:32	KMV
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/17/19	11/17/19 7:32	KMV
pH @17.4°C	5.6		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:40	AIA

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: MW-9 | Sampled: 11/15/2019 10:30

Sample ID: 19K0936-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: MW-9 | Sampled: 11/15/2019 10:30

Sample ID: 19K0936-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/23/19 1:16	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	96.6	80-120			11/23/19 1:16

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Trip Blank | Sampled: 11/15/2019 11:00

Sample ID: 19K0936-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Trip Blank | Sampled: 11/15/2019 11:00

Sample ID: 19K0936-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:13	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	89.8	80-120		11/22/19 18:13
1,2-Dichlorobenzene-d4	85.0	80-120		11/22/19 18:13

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/15/2019 14:30

Sample ID: 19K0936-03

Sample Matrix: Field Blank

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:56	TBC
Sodium	ND	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:56	TBC

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/15/2019 14:30

Sample ID: 19K0936-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	1.0	mg/L	1		EPA 300.0	11/26/19	11/26/19 11:08	IS
Nitrate as N	ND	0.10	mg/L	1		EPA 300.0	11/17/19	11/17/19 8:17	KMV
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/17/19	11/17/19 8:17	KMV
pH @20.5°C	5.6		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:40	AIA
Turbidity	ND	0.50	NTU	1		EPA 180.1	11/15/19	11/15/19 21:45	KMV

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/15/2019 14:30

Sample ID: 19K0936-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Dissolved Solids	ND	10	mg/L	1		SM21-22 2540C	11/19/19	11/19/19 13:25	LL

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/15/2019 14:30

Sample ID: 19K0936-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0936

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/15/2019 14:30

Sample ID: 19K0936-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 18:39	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.7	80-120		11/22/19 18:39
1,2-Dichlorobenzene-d4	88.4	80-120		11/22/19 18:39

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Sample Extraction Data

EPA 180.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0936-03 [Field Blank]	B246212	25.0	25.0	11/15/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0936-01 [MW-9]	B246597	50.0	50.0	11/20/19
19K0936-03 [Field Blank]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0936-01 [MW-9]	B246203	10.0	10.0	11/17/19
19K0936-03 [Field Blank]	B246203	10.0	10.0	11/17/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0936-01 [MW-9]	B246906	10.0	10.0	11/26/19
19K0936-03 [Field Blank]	B246906	10.0	10.0	11/26/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0936-01 [MW-9]	B246771	5	5.00	11/22/19
19K0936-02 [Trip Blank]	B246771	5	5.00	11/22/19
19K0936-03 [Field Blank]	B246771	5	5.00	11/22/19

SM21-22 2540C

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0936-03 [Field Blank]	B246404	50.0	11/19/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0936-01 [MW-9]	B246229	50.0	11/15/19
19K0936-03 [Field Blank]	B246229	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes
Batch B246203 - EPA 300.0											
Blank (B246203-BLK1)				Prepared & Analyzed: 11/16/19							
Nitrate as N	ND	0.10	mg/L								
Nitrite as N	ND	0.100	mg/L								
LCS (B246203-BS1)				Prepared & Analyzed: 11/16/19							
Nitrate as N	0.48	0.10	mg/L	0.500		95.4	90-110				
Nitrite as N	0.467	0.100	mg/L	0.500		93.3	90-110				
LCS Dup (B246203-BSD1)				Prepared & Analyzed: 11/16/19							
Nitrate as N	0.48	0.10	mg/L	0.500		96.2	90-110	0.752		20	
Nitrite as N	0.468	0.100	mg/L	0.500		93.5	90-110	0.214		20	
Batch B246212 - EPA 180.1											
Blank (B246212-BLK1)				Prepared & Analyzed: 11/15/19							
Turbidity	ND	0.50	NTU								
LCS (B246212-BS1)				Prepared & Analyzed: 11/15/19							
Turbidity	3.9		NTU	4.00		97.2	90-110				
LCS Dup (B246212-BSD1)				Prepared & Analyzed: 11/15/19							
Turbidity	3.9		NTU	4.00		98.2	90-110	1.02		5	
Batch B246229 - SM21-22 4500 H B											
LCS (B246229-BS1)				Prepared & Analyzed: 11/15/19							
pH	6.04		pH Units	6.00		101	90-110				
Duplicate (B246229-DUP1)	**Source: 19K0936-03**			Prepared & Analyzed: 11/15/19							
pH	6.9		pH Units		5.6			**21.6**	*	5	H-05, R-02
Batch B246906 - EPA 300.0											
Blank (B246906-BLK1)				Prepared & Analyzed: 11/25/19							
Chloride	ND	1.0	mg/L								
LCS (B246906-BS1)				Prepared & Analyzed: 11/25/19							
Chloride	11	1.0	mg/L	10.0		108	90-110				
LCS Dup (B246906-BSD1)				Prepared & Analyzed: 11/25/19							
Chloride	11	1.0	mg/L	10.0		109	90-110	0.961		20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246404 - SM21-22 2540C										
Blank (B246404-BLK1)				Prepared & Analyzed: 11/19/19						
Total Dissolved Solids	ND	10	mg/L							
LCS (B246404-BS1)				Prepared & Analyzed: 11/19/19						
Total Dissolved Solids	270	10	mg/L	293		92.8	59.4-118			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
R-02	Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 180.1 in Water	
Turbidity	NC
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 2540C in Water	
Total Dissolved Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

19K0936

con-test ANALYTICAL LABORATORY KAF

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: hydrology Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: bon@dovema.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	pH	TDS	Turbidity
01	MW-9	11/15/19	1030	GRAB	GW	U	3		5			X	X	X	X	X	X	X		
02	Trip Blank	11/15/19					1							X						
03	Field Blank	11/15/19	1100	GRAB	GW	U	3		7			X	X	X	X	X	X	X	X	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
*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
	11/15/19 1500
Received by: (signature)	Date/Time:
	11/15 15:00
Relinquished by: (signature)	Date/Time:
	11/15 6:45
Received by: (signature)	Date/Time:
	11/15/19 1845
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
CT
Other:

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By RLF Date 11/15/19 Time 1845

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.9°C By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

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? T Who was notified? Katie

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid IPHC2 Base NA

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	7	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	12	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0935

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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con-test® ANALYTICAL LABORATORY
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Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0935

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-11	19K0935-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K0935-02	Trip Blank Water		EPA 524.2	

con-test® ANALYTICAL LABORATORY

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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 300.0

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Nitrate as N

19K0935-01[MW-11], B246241-MS1

EPA 524.2

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:

Chloromethane

B246771-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH

19K0935-01[MW-11]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: MW-11
Sampled: 11/15/2019 14:30

Sample ID: 19K0935-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.12	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:28	TBC
Sodium	17	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 18:28	TBC

con-test® ANALYTICAL LABORATORY
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Project Location: Dover, MA
Sample Description:
Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: MW-11
Sampled: 11/15/2019 14:30

Sample ID: 19K0935-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	52	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 21:03	IS
Nitrate as N	1.5	0.10	mg/L	1	MS-07	EPA 300.0	11/17/19	11/17/19 12:43	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/17/19	11/17/19 12:43	IS
pH @18.3°C	6.6		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 22:40	AIA

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: MW-11 | Sampled: 11/15/2019 14:30

Sample ID: 19K0935-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: MW-11 | Sampled: 11/15/2019 14:30

Sample ID: 19K0935-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/23/19 0:50	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	90.0	80-120		11/23/19 0:50
1,2-Dichlorobenzene-d4	82.9	80-120		11/23/19 0:50

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: Trip Blank | Sampled: 11/15/2019 00:00

Sample ID: 19K0935-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0935

Date Received: 11/15/2019

Field Sample #: Trip Blank | Sampled: 11/15/2019 00:00

Sample ID: 19K0935-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 17:46	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	95.9	80-120			11/22/19 17:46
1,2-Dichlorobenzene-d4	86.8	80-120			11/22/19 17:46

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

Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0935-01 [MW-11]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0935-01 [MW-11]	B246241	10.0	10.0	11/17/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0935-01 [MW-11]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0935-01 [MW-11]	B246771	5	5.00	11/22/19
19K0935-02 [Trip Blank]	B246771	5	5.00	11/22/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0935-01 [MW-11]	B246229	50.0	11/15/19

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

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246229 - SM21-22 4500 H B											
LCS (B246229-BS1)				Prepared & Analyzed: 11/15/19							
pH	6.04		pH Units	6.00		101		90-110			
Batch B246241 - EPA 300.0											
Blank (B246241-BLK1)				Prepared & Analyzed: 11/17/19							
Nitrate as N	ND	0.10	mg/L								
Nitrite as N	ND	0.100	mg/L								
LCS (B246241-BS1)				Prepared & Analyzed: 11/17/19							
Nitrate as N	0.49	0.10	mg/L	0.500		97.8		90-110			
Nitrite as N	0.484	0.100	mg/L	0.500		96.8		90-110			
LCS Dup (B246241-BSD1)				Prepared & Analyzed: 11/17/19							
Nitrate as N	0.49	0.10	mg/L	0.500		98.0		90-110	0.204	20	
Nitrite as N	0.484	0.100	mg/L	0.500		96.9		90-110	0.0826	20	
Duplicate (B246241-DUP1)	**Source: 19K0935-01**			Prepared & Analyzed: 11/17/19							
Nitrate as N	1.5	0.10	mg/L		1.5				0.142	20	
Nitrite as N	ND	0.100	mg/L		ND				NC	20	
Matrix Spike (B246241-MS1)	**Source: 19K0935-01**			Prepared & Analyzed: 11/17/19							
Nitrate as N	1.9	0.10	mg/L	0.500	1.5	**79.5**	*	80-120			MS-07
Nitrite as N	0.469	0.100	mg/L	0.500	ND	93.8		80-120			
Batch B246842 - EPA 300.0											
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19							
Chloride	ND	1.0	mg/L								
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19							
Chloride	11	1.0	mg/L	10.0		108		90-110			
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19							
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138	20	

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

QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

19K0935

con-test® ANALYTICAL LABORATORY

KFF

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: Hydrology Study
Project Location: Dover MA: ~~Hydrology~~ Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovertma.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	~~Beginning~~ Date/~~Time~~	~~Ending~~ Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	O Nitrate	O Nitrite	H VOC by 542.2	N Manganese	N Sodium	O Chloride	O pH					[2] Preservation Code
01	MW-11	11/15/19	1430	GRAB	GW	U	3		5			X	X	X	X	X	X	X					
02	Trip Blank	11/15/19												X									

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

*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
	11/15/19 1500
Received by: (signature)	Date/Time:
	11/15 1500
Relinquished by: (signature)	Date/Time:
	11/15 6:45
Received by: (signature)	Date/Time:
3C	11/15/19 1845
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
CT
Other:

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

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Doc# 277 Rev 5 2017

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 Kleinfelder

Received By BLF Date 11/15/19 Time 1845

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.9°C By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

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? T Who was notified? Katie

Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid IpHC2 Base NA

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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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November 25, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0856

Enclosed are results of analyses for samples received by the laboratory on November 14, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/25/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0856

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-13	19K0856-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K0856-02	Trip Blank Water		EPA 524.2	

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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 300.0

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

Nitrate as N
19K0856-01[MW-13]

Nitrite as N
19K0856-01[MW-13]

EPA 524.2

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:

Chloromethane
B246462-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0856-01[MW-13]

The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: MW-13
Sampled: 11/12/2019 14:20

Sample ID: 19K0856-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.030	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:01	TBC
Sodium	76	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:01	TBC

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

Project Location: Dover, MA
Sample Description:
Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: MW-13
Sampled: 11/12/2019 14:20

Sample ID: 19K0856-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	190	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 9:48	IS
Nitrate as N	4.2	0.10	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 9:27	KMV
Nitrite as N	ND	0.100	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 9:27	KMV
pH @18.1°C	6.3		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 15:40	KMV

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: MW-13 | Sampled: 11/12/2019 14:20

Sample ID: 19K0856-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: MW-13 | Sampled: 11/12/2019 14:20

Sample ID: 19K0856-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:07	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.7	80-120		11/20/19 17:07
1,2-Dichlorobenzene-d4	86.8	80-120		11/20/19 17:07

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: Trip Blank | Sampled: 11/12/2019 00:00

Sample ID: 19K0856-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0856

Date Received: 11/14/2019

Field Sample #: Trip Blank | Sampled: 11/12/2019 00:00

Sample ID: 19K0856-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 16:40	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	90.5	80-120		11/20/19 16:40
1,2-Dichlorobenzene-d4	82.0	80-120		11/20/19 16:40

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Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0856-01 [MW-13]	B246593	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0856-01 [MW-13]	B246073	10.0	10.0	11/16/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0856-01 [MW-13]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0856-01 [MW-13]	B246462	5	5.00	11/19/19
19K0856-02 [Trip Blank]	B246462	5	5.00	11/19/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0856-01 [MW-13]	B246202	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246593 - EPA 200.7										
Blank (B246593-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246593-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.469	0.010	mg/L	0.500		93.7	85-115			
Sodium	3.86	2.0	mg/L	4.00		96.5	85-115			
LCS Dup (B246593-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.473	0.010	mg/L	0.500		94.6	85-115	0.954	20	
Sodium	3.90	2.0	mg/L	4.00		97.5	85-115	1.05	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246073 - EPA 300.0										
Blank (B246073-BLK1)				Prepared & Analyzed: 11/15/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B246073-BS1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		96.4	90-110			
Nitrite as N	0.472	0.100	mg/L	0.500		94.3	90-110			
LCS Dup (B246073-BSD1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		96.8	90-110	0.373	20	
Nitrite as N	0.471	0.100	mg/L	0.500		94.2	90-110	0.106	20	
Batch B246202 - SM21-22 4500 H B										
LCS (B246202-BS1)				Prepared & Analyzed: 11/15/19						
pH	6.02		pH Units	6.00		100	90-110			
LCS (B246202-BS2)				Prepared & Analyzed: 11/15/19						
pH	6.04		pH Units	6.00		101	90-110			
Batch B246842 - EPA 300.0										
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19						
Chloride	ND	1.0	mg/L							
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110			
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110	0.0138	20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2											
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*24.0*		µg/L	25.0		96.0		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.0*		µg/L	25.0		84.0		80-120			
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19							
Acetone	81	10	µg/L	100		81.0		70-130			
tert-Amyl Methyl Ether (TAME)	11	0.50	µg/L	10.0		106		70-130			
Benzene	10	0.50	µg/L	10.0		102		70-130			
Bromobenzene	9.5	0.50	µg/L	10.0		95.0		70-130			
Bromochloromethane	10	0.50	µg/L	10.0		105		70-130			
Bromodichloromethane	10	0.50	µg/L	10.0		102		70-130			
Bromoform	11	0.50	µg/L	10.0		112		70-130			
Bromomethane	9.2	2.0	µg/L	10.0		92.0		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		104		70-130			
tert-Butyl Alcohol (TBA)	96	5.0	µg/L	100		95.6		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		93.8		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		108		70-130			
tert-Butylbenzene	11	0.50	µg/L	10.0		107		70-130			
tert-Butyl Ethyl Ether (TBEE)	11	0.50	µg/L	10.0		111		70-130			
Carbon Disulfide	98	5.0	µg/L	100		97.5		70-130			
Carbon Tetrachloride	10	0.50	µg/L	10.0		101		70-130			
Chlorobenzene	10	0.50	µg/L	10.0		102		70-130			
Chloroethane	10	0.50	µg/L	10.0		103		70-130			
Chloroform	9.7	0.50	µg/L	10.0		97.3		70-130			
Chloromethane	15	2.0	µg/L	10.0		**154**	*	70-130			L-01
2-Chlorotoluene	9.6	0.50	µg/L	10.0		95.5		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		101		70-130			
Dibromochloromethane	10	0.50	µg/L	10.0		104		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	11	2.0	µg/L	10.0		109		70-130			
1,2-Dibromoethane (EDB)	10	0.50	µg/L	10.0		99.7		70-130			
Dibromomethane	10	0.50	µg/L	10.0		100		70-130			
1,2-Dichlorobenzene	9.5	0.50	µg/L	10.0		95.2		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
1,3-Dichlorobenzene	9.8	0.50	µg/L	10.0		97.6	70-130			
1,4-Dichlorobenzene	9.8	0.50	µg/L	10.0		98.0	70-130			
Dichlorodifluoromethane (Freon 12)	12	0.50	µg/L	10.0		125	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		107	70-130			
1,2-Dichloroethane	8.9	0.50	µg/L	10.0		89.2	70-130			
1,1-Dichloroethylene	9.1	0.50	µg/L	10.0		91.0	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		101	70-130			
trans-1,2-Dichloroethylene	9.4	0.50	µg/L	10.0		93.7	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		112	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		103	70-130			
2,2-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
1,1-Dichloropropene	11	0.50	µg/L	10.0		105	70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		109	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		115	70-130			
Diethyl Ether	9.4	0.50	µg/L	10.0		94.5	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		104	70-130			
Ethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Hexachlorobutadiene	11	0.50	µg/L	10.0		105	70-130			
2-Hexanone (MBK)	100	5.0	µg/L	100		102	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		103	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.8	0.50	µg/L	10.0		98.1	70-130			
Methylene Chloride	8.7	0.50	µg/L	10.0		87.4	70-130			
4-Methyl-2-pentanone (MIBK)	100	5.0	µg/L	100		101	70-130			
Naphthalene	8.5	1.0	µg/L	10.0		85.0	70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		104	70-130			
Styrene	11	0.50	µg/L	10.0		106	70-130			
1,1,1,2-Tetrachloroethane	11	0.50	µg/L	10.0		108	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		100	70-130			
Tetrachloroethylene	9.8	0.50	µg/L	10.0		98.2	70-130			
Tetrahydrofuran	12	2.0	µg/L	10.0		118	70-130			
Toluene	9.9	0.50	µg/L	10.0		98.7	70-130			
1,2,3-Trichlorobenzene	8.8	0.50	µg/L	10.0		87.6	70-130			
1,2,4-Trichlorobenzene	9.0	0.50	µg/L	10.0		90.2	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		97.1	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		102	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		100	70-130			
Trichlorofluoromethane (Freon 11)	9.0	0.50	µg/L	10.0		89.9	70-130			
1,2,3-Trichloropropane	9.6	0.50	µg/L	10.0		95.7	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		88.8	70-130			
1,2,4-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		108	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		118	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		98.3	70-130			
o-Xylene	10	0.50	µg/L	10.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.9*		µg/L	25.0		104	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.3*		µg/L	25.0		101	80-120			

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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.
H-03	Sample received after recommended holding time was exceeded.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

19K0852

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

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KAF

Company Name: Kleinfelder
Address: Suite 110-4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: ~~hydrology~~ Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: bohl@dovermo.org
Sampled By: Andy Bayliss, Gaddy Riguttо

Requested Turnaround Time
7-Day [X] 10-Day [ ]
PFAS 10-Day (std) [ ] Due Date:

Rush-Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Data Delivery
Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: KRyan@Kleinfelder.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	~~Ending Date/Time~~	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	O Nitrate	O Nitrite	H VOC by 542.2	N Manganese	N Sodium	O Chloride	O pH
01	MW-13	11/12/19	1420	GRAB	GW	U	3		4	(GMR)		X	X	X	X	X	X	X
02	TRIP BLANK	11/12/19					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

*Contest 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) NONE

Relinquished by: (signature)	Date/Time: 11/12/19	1645
Received by: (signature) KLF sample Fridge	Date/Time: 11/12/19	1645
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	
Relinquished by: (signature)	Date/Time: 11/14/19	1350
Received by: (signature)	Date/Time: 11/14/19	1350
Relinquished by: (signature)	Date/Time: 11/14/19	1630
Received by: (signature) 2.3C	Date/Time: 11/14/19	1630

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GT
Other:

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 [X] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other
[ ] Chromatogram
[ ] AIHA-LAP,LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Klenfelder

Received By RLF Date 11/19/19 Time 1630

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 23.5°C
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
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? T Who was notified? Miranda
Is there enough Volume? T
Is there Headspace where applicable? F MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? T On COC? T
Do all samples have the proper pH? Acid TpH<2 Base NA

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	5	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	4	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 27, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K1087

Enclosed are results of analyses for samples received by the laboratory on November 18, 2019. 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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/27/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K1087

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-14	19K1087-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K1087-02	Trip Blank Water		EPA 524.2	
Field Blank	19K1087-03	Field Blank		EPA 180.1	
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 2540C	
				SM21-22 4500 H B	

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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 180.1

Qualifications:

R-02

Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

Analyte & Samples(s) Qualified:

Turbidity
19K1087-03[Field Blank], B246382-DUP1

EPA 300.0

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Nitrate as N
19K1087-01[MW-14], B246388-MS1

EPA 524.2

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:

Chloromethane
B246895-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K1087-01[MW-14], 19K1087-03[Field Blank], B246387-DUP1

R-02

Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

Analyte & Samples(s) Qualified:

pH
B246387-DUP1

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The results of analyses reported only relate to samples submitted to the Con-Test 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.

Tod E. Kopyscinski
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: MW-14
Sampled: 11/18/2019 12:30

Sample ID: 19K1087-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	1.3	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:07	TBC
Sodium	27	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:07	TBC

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Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: MW-14 | Sampled: 11/18/2019 12:30

Sample ID: 19K1087-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	110	5.0	mg/L	5		EPA 300.0	11/25/19	11/25/19 18:57	MMH
Nitrate as N	0.18	0.10	mg/L	1	MS-07	EPA 300.0	11/19/19	11/19/19 22:20	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/19/19	11/19/19 22:20	IS
pH @21.5°C	6.2		pH Units	1	H-05	SM21-22 4500 H B	11/18/19	11/18/19 21:43	AIA

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: MW-14 | Sampled: 11/18/2019 12:30

Sample ID: 19K1087-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: MW-14 | Sampled: 11/18/2019 12:30

Sample ID: 19K1087-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	95.8	80-120		11/25/19 18:42
1,2-Dichlorobenzene-d4	87.0	80-120		11/25/19 18:42

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Trip Blank | Sampled: 11/18/2019 00:00

Sample ID: 19K1087-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Trip Blank | Sampled: 11/18/2019 00:00

Sample ID: 19K1087-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:39	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	94.3	80-120		11/25/19 11:39
1,2-Dichlorobenzene-d4	84.8	80-120		11/25/19 11:39

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Field Blank
Sampled: 11/18/2019 12:00

Sample ID: 19K1087-03

Sample Matrix: Field Blank

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:15	TBC
Sodium	ND	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:15	TBC

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Field Blank | Sampled: 11/18/2019 12:00

Sample ID: 19K1087-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	1.0	mg/L	1		EPA 300.0	11/25/19	11/25/19 19:10	MMH
Nitrate as N	ND	0.10	mg/L	1		EPA 300.0	11/19/19	11/19/19 23:27	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/19/19	11/19/19 23:27	IS
pH @19.8°C	5.6		pH Units	1	H-05	SM21-22 4500 H B	11/18/19	11/18/19 21:43	AIA
Turbidity	ND	0.50	NTU	1	R-02	EPA 180.1	11/18/19	11/18/19 21:05	KMV

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Field Blank
Sampled: 11/18/2019 12:00

Sample ID: 19K1087-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Dissolved Solids	ND	10	mg/L	1		SM21-22 2540C	11/19/19	11/19/19 13:25	LL

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Field Blank | Sampled: 11/18/2019 12:00

Sample ID: 19K1087-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1087

Date Received: 11/18/2019

Field Sample #: Field Blank | Sampled: 11/18/2019 12:00

Sample ID: 19K1087-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/25/19	11/25/19 12:32	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	92.0	80-120		11/25/19 12:32
1,2-Dichlorobenzene-d4	85.4	80-120		11/25/19 12:32

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

EPA 180.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1087-03 [Field Blank]	B246382	25.0	25.0	11/18/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1087-01 [MW-14]	B246597	50.0	50.0	11/20/19
19K1087-03 [Field Blank]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1087-01 [MW-14]	B246388	10.0	10.0	11/19/19
19K1087-03 [Field Blank]	B246388	10.0	10.0	11/19/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1087-01 [MW-14]	B246970	10.0	10.0	11/25/19
19K1087-03 [Field Blank]	B246970	10.0	10.0	11/25/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1087-01 [MW-14]	B246895	5	5.00	11/25/19
19K1087-02 [Trip Blank]	B246895	5	5.00	11/25/19
19K1087-03 [Field Blank]	B246895	5	5.00	11/25/19

SM21-22 2540C

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K1087-03 [Field Blank]	B246404	50.0	11/19/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K1087-01 [MW-14]	B246387	50.0	11/18/19
19K1087-03 [Field Blank]	B246387	50.0	11/18/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246382 - EPA 180.1												
Blank (B246382-BLK1)				Prepared & Analyzed: 11/18/19								
Turbidity	ND	0.50	NTU									
LCS (B246382-BS1)				Prepared & Analyzed: 11/18/19								
Turbidity	3.9		NTU	4.00		98.0		90-110				
LCS Dup (B246382-BSD1)				Prepared & Analyzed: 11/18/19								
Turbidity	3.9		NTU	4.00		97.5		90-110	0.512		5	
Duplicate (B246382-DUP1)	**Source: 19K1087-03**			Prepared & Analyzed: 11/18/19								
Turbidity	ND	0.50	NTU		ND				NC		11.4	R-02
Batch B246387 - SM21-22 4500 H B												
LCS (B246387-BS1)				Prepared & Analyzed: 11/18/19								
pH	5.98		pH Units	6.00		99.7		90-110				
Duplicate (B246387-DUP1)	**Source: 19K1087-03**			Prepared & Analyzed: 11/18/19								
pH	5.1		pH Units		5.6				**8.50**	*	5	H-05, R-02
Batch B246388 - EPA 300.0												
Blank (B246388-BLK1)				Prepared & Analyzed: 11/19/19								
Nitrate as N	ND	0.10	mg/L									
Nitrite as N	ND	0.100	mg/L									
LCS (B246388-BS1)				Prepared & Analyzed: 11/19/19								
Nitrate as N	0.49	0.10	mg/L	0.500		97.7		90-110				
Nitrite as N	0.480	0.100	mg/L	0.500		96.0		90-110				
LCS Dup (B246388-BSD1)				Prepared & Analyzed: 11/19/19								
Nitrate as N	0.49	0.10	mg/L	0.500		98.0		90-110	0.347		20	
Nitrite as N	0.480	0.100	mg/L	0.500		95.9		90-110	0.0834		20	
Duplicate (B246388-DUP1)	**Source: 19K1087-01**			Prepared & Analyzed: 11/19/19								
Nitrate as N	0.18	0.10	mg/L		0.18				0.108		20	
Nitrite as N	ND	0.100	mg/L		ND				NC		20	
Matrix Spike (B246388-MS1)	**Source: 19K1087-01**			Prepared & Analyzed: 11/19/19								
Nitrate as N	0.56	0.10	mg/L	0.500	0.18	**75.1**	*	80-120				MS-07
Nitrite as N	0.486	0.100	mg/L	0.500	ND	97.1		80-120				

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246970 - EPA 300.0										
Blank (B246970-BLK1)				Prepared & Analyzed: 11/25/19						
Chloride	ND	1.0	mg/L							
LCS (B246970-BS1)				Prepared & Analyzed: 11/25/19						
Chloride	5.2	1.0	mg/L	5.00		105	90-110			
LCS Dup (B246970-BSD1)				Prepared & Analyzed: 11/25/19						
Chloride	5.2	1.0	mg/L	5.00		105	90-110	0.0172	20	
Duplicate (B246970-DUP1)	**Source: 19K1087-03**			Prepared & Analyzed: 11/25/19						
Chloride	ND	1.0	mg/L		ND			NC	20	
Matrix Spike (B246970-MS1)	**Source: 19K1087-03**			Prepared & Analyzed: 11/25/19						
Chloride	5.2	1.0	mg/L	5.00	ND	104	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246404 - SM21-22 2540C										
Blank (B246404-BLK1)				Prepared & Analyzed: 11/19/19						
Total Dissolved Solids	ND	10	mg/L							
LCS (B246404-BS1)				Prepared & Analyzed: 11/19/19						
Total Dissolved Solids	270	10	mg/L	293		92.8	59.4-118			
Duplicate (B246404-DUP2)	**Source: 19K1087-03**			Prepared & Analyzed: 11/19/19						
Total Dissolved Solids	ND	10	mg/L		ND			NC	5	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2										
Blank (B246895-BLK1)				Prepared & Analyzed: 11/25/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2											
Blank (B246895-BLK1)				Prepared & Analyzed: 11/25/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.0*		µg/L	25.0		92.1		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.4*		µg/L	25.0		85.8		80-120			
LCS (B246895-BS1)				Prepared & Analyzed: 11/25/19							
Acetone	81	10	µg/L	100		81.0		70-130			
tert-Amyl Methyl Ether (TAME)	9.1	0.50	µg/L	10.0		91.4		70-130			
Benzene	10	0.50	µg/L	10.0		104		70-130			
Bromobenzene	9.8	0.50	µg/L	10.0		97.8		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		109		70-130			
Bromodichloromethane	10	0.50	µg/L	10.0		99.9		70-130			
Bromoform	10	0.50	µg/L	10.0		104		70-130			
Bromomethane	9.9	2.0	µg/L	10.0		98.8		70-130			
2-Butanone (MEK)	110	5.0	µg/L	100		106		70-130			
tert-Butyl Alcohol (TBA)	93	5.0	µg/L	100		93.5		70-130			
n-Butylbenzene	9.3	0.50	µg/L	10.0		93.3		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		105		70-130			
tert-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butyl Ethyl Ether (TBEE)	10	0.50	µg/L	10.0		104		70-130			
Carbon Disulfide	92	5.0	µg/L	100		92.4		70-130			
Carbon Tetrachloride	9.6	0.50	µg/L	10.0		95.8		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		106		70-130			
Chloroethane	10	0.50	µg/L	10.0		99.5		70-130			
Chloroform	9.6	0.50	µg/L	10.0		96.4		70-130			
Chloromethane	19	2.0	µg/L	10.0		**186**	*	70-130			L-01
2-Chlorotoluene	9.8	0.50	µg/L	10.0		98.3		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		102		70-130			
Dibromochloromethane	10	0.50	µg/L	10.0		102		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	10	2.0	µg/L	10.0		103		70-130			
1,2-Dibromoethane (EDB)	10	0.50	µg/L	10.0		103		70-130			
Dibromomethane	11	0.50	µg/L	10.0		106		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		99.9		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2										
LCS (B246895-BS1)				Prepared & Analyzed: 11/25/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		104	70-130			
1,4-Dichlorobenzene	9.9	0.50	µg/L	10.0		99.4	70-130			
Dichlorodifluoromethane (Freon 12)	13	0.50	µg/L	10.0		125	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	9.2	0.50	µg/L	10.0		92.2	70-130			
1,1-Dichloroethylene	8.8	0.50	µg/L	10.0		88.2	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		102	70-130			
trans-1,2-Dichloroethylene	10	0.50	µg/L	10.0		102	70-130			
1,2-Dichloropropane	12	0.50	µg/L	10.0		115	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.2	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		102	70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		110	70-130			
trans-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
Diethyl Ether	9.2	0.50	µg/L	10.0		92.0	70-130			
Diisopropyl Ether (DIPE)	11	0.50	µg/L	10.0		107	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		104	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		101	70-130			
2-Hexanone (MBK)	100	5.0	µg/L	100		103	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		103	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		108	70-130			
Methyl tert-Butyl Ether (MTBE)	9.6	0.50	µg/L	10.0		95.9	70-130			
Methylene Chloride	9.6	0.50	µg/L	10.0		96.2	70-130			
4-Methyl-2-pentanone (MIBK)	100	5.0	µg/L	100		103	70-130			
Naphthalene	8.6	1.0	µg/L	10.0		86.0	70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		105	70-130			
Styrene	11	0.50	µg/L	10.0		110	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		104	70-130			
1,1,2,2-Tetrachloroethane	11	0.50	µg/L	10.0		105	70-130			
Tetrachloroethylene	10	0.50	µg/L	10.0		99.7	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		113	70-130			
Toluene	10	0.50	µg/L	10.0		101	70-130			
1,2,3-Trichlorobenzene	8.7	0.50	µg/L	10.0		87.3	70-130			
1,2,4-Trichlorobenzene	9.0	0.50	µg/L	10.0		89.7	70-130			
1,1,1-Trichloroethane	9.4	0.50	µg/L	10.0		94.4	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		101	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		102	70-130			
Trichlorofluoromethane (Freon 11)	8.5	0.50	µg/L	10.0		85.3	70-130			
1,2,3-Trichloropropane	10	0.50	µg/L	10.0		103	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		88.6	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		104	70-130			
1,3,5-Trimethylbenzene	10	0.50	µg/L	10.0		104	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		98.6	70-130			
o-Xylene	10	0.50	µg/L	10.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*25.9*		µg/L	25.0		103	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.2*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
R-02	Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 180.1 in Water	
Turbidity	NC
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 2540C in Water	
Total Dissolved Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332 19A1087
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

KAF

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: hydrology Study
Project Location: Dover MA: hydrology Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovema.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery
Format: PDF X EXCEL X
Other:
CLP Like Data Pkg Required:
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Date/Time	Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	pH	TDS	Turbidity
1	MW-14	11/18/19	1230	GRAB	GW	U	3		5			X	X	X	X	X	X	X		
2	Trip Blank	11/18/19					1							X						
3	Field Blank	11/18/19	1200	GRAB	GW	U	3		7			X	X	X	X	X	X	X	X	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

*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
	11/18/19 1825
Received by: (signature)	Date/Time:
	11/18/19 1525
Relinquished by: (signature)	Date/Time:
	11/18/19 1905
Received by: (signature)	Date/Time:
	11/18/19 19:25
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
CT
Other

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Klein felder

Received By MP Date 11/18/19 Time 19:25

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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 Project T Analysis T ID's T Sampler Name 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? T Who was notified? katie

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid HCL Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	7	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	12	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 25, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0857

Enclosed are results of analyses for samples received by the laboratory on November 14, 2019. 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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/25/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0857

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-15	19K0857-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K0857-02	Trip Blank Water		EPA 524.2	
Field Blank	19K0857-03	Field Blank		EPA 180.1	
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 2540C	
				SM21-22 4500 H B	

con-test® ANALYTICAL LABORATORY

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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 180.1

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

Turbidity
19K0857-03[Field Blank]

EPA 300.0

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

Nitrate as N
19K0857-01[MW-15], 19K0857-03[Field Blank]

Nitrite as N
19K0857-01[MW-15], 19K0857-03[Field Blank]

EPA 524.2

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:

Chloromethane
B246462-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0857-01[MW-15], 19K0857-03[Field Blank]

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The results of analyses reported only relate to samples submitted to the Con-Test 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: MW-15
Sampled: 11/12/2019 11:40

Sample ID: 19K0857-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.083	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:06	TBC
Sodium	290	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:06	TBC

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: MW-15 | Sampled: 11/12/2019 11:40

Sample ID: 19K0857-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	480	10	mg/L	10		EPA 300.0	11/24/19	11/24/19 10:10	IS
Nitrate as N	1.1	0.10	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 10:12	KMV
Nitrite as N	ND	0.100	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 10:12	KMV
pH @18°C	5.4		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 15:40	KMV

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: MW-15 | Sampled: 11/12/2019 11:40

Sample ID: 19K0857-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: MW-15 | Sampled: 11/12/2019 11:40

Sample ID: 19K0857-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 19:19	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	94.5	80-120		11/20/19 19:19
1,2-Dichlorobenzene-d4	89.9	80-120		11/20/19 19:19

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Trip Blank | Sampled: 11/12/2019 00:00

Sample ID: 19K0857-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Trip Blank | Sampled: 11/12/2019 00:00

Sample ID: 19K0857-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:33	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	91.3	80-120		11/20/19 17:33
1,2-Dichlorobenzene-d4	83.2	80-120		11/20/19 17:33

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Field Blank
Sampled: 11/12/2019 11:00

Sample ID: 19K0857-03

Sample Matrix: Field Blank

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:11	TBC
Sodium	ND	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 20:11	TBC

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Field Blank | Sampled: 11/12/2019 11:00

Sample ID: 19K0857-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	1.0	mg/L	1		EPA 300.0	11/24/19	11/24/19 10:33	IS
Nitrate as N	ND	0.10	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 11:20	KMV
Nitrite as N	ND	0.100	mg/L	1	H-03	EPA 300.0	11/16/19	11/16/19 11:20	KMV
pH @17.2°C	5.5		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 15:40	KMV
Turbidity	ND	0.50	NTU	1	H-03	EPA 180.1	11/14/19	11/14/19 21:10	MG2

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Field Blank
Sampled: 11/12/2019 11:00

Sample ID: 19K0857-03

Sample Matrix: Field Blank

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Dissolved Solids	18	10	mg/L	1		SM21-22 2540C	11/15/19	11/15/19 12:00	LL

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Field Blank | Sampled: 11/12/2019 11:00

Sample ID: 19K0857-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0857

Date Received: 11/14/2019

Field Sample #: Field Blank | Sampled: 11/12/2019 11:00

Sample ID: 19K0857-03

Sample Matrix: Field Blank

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/19/19	11/20/19 17:59	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	92.8	80-120		11/20/19 17:59
1,2-Dichlorobenzene-d4	84.9	80-120		11/20/19 17:59

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Sample Extraction Data

EPA 180.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0857-03 [Field Blank]	B246085	25.0	25.0	11/14/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0857-01 [MW-15]	B246593	50.0	50.0	11/20/19
19K0857-03 [Field Blank]	B246593	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0857-01 [MW-15]	B246073	10.0	10.0	11/16/19
19K0857-03 [Field Blank]	B246073	10.0	10.0	11/16/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0857-01 [MW-15]	B246842	10.0	10.0	11/24/19
19K0857-03 [Field Blank]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0857-01 [MW-15]	B246462	5	5.00	11/19/19
19K0857-02 [Trip Blank]	B246462	5	5.00	11/19/19
19K0857-03 [Field Blank]	B246462	5	5.00	11/19/19

SM21-22 2540C

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0857-03 [Field Blank]	B246110	50.0	11/15/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0857-01 [MW-15]	B246202	50.0	11/15/19
19K0857-03 [Field Blank]	B246202	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246593 - EPA 200.7										
Blank (B246593-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246593-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.469	0.010	mg/L	0.500		93.7	85-115			
Sodium	3.86	2.0	mg/L	4.00		96.5	85-115			
LCS Dup (B246593-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.473	0.010	mg/L	0.500		94.6	85-115	0.954	20	
Sodium	3.90	2.0	mg/L	4.00		97.5	85-115	1.05	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246073 - EPA 300.0										
Blank (B246073-BLK1)				Prepared & Analyzed: 11/15/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B246073-BS1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		96.4	90-110			
Nitrite as N	0.472	0.100	mg/L	0.500		94.3	90-110			
LCS Dup (B246073-BSD1)				Prepared & Analyzed: 11/16/19						
Nitrate as N	0.48	0.10	mg/L	0.500		96.8	90-110	0.373	20	
Nitrite as N	0.471	0.100	mg/L	0.500		94.2	90-110	0.106	20	
Batch B246085 - EPA 180.1										
Blank (B246085-BLK1)				Prepared & Analyzed: 11/14/19						
Turbidity	ND	0.50	NTU							
LCS (B246085-BS1)				Prepared & Analyzed: 11/14/19						
Turbidity	3.8	0.50	NTU	4.00		95.5	90-110			
LCS Dup (B246085-BSD1)				Prepared & Analyzed: 11/14/19						
Turbidity	3.9	0.50	NTU	4.00		96.5	90-110	1.04	5	
Batch B246202 - SM21-22 4500 H B										
LCS (B246202-BS1)				Prepared & Analyzed: 11/15/19						
pH	6.02		pH Units	6.00		100	90-110			
LCS (B246202-BS2)				Prepared & Analyzed: 11/15/19						
pH	6.04		pH Units	6.00		101	90-110			
Batch B246842 - EPA 300.0										
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19						
Chloride	ND	1.0	mg/L							
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110			
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19						
Chloride	11	1.0	mg/L	10.0		108	90-110	0.0138	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246110 - SM21-22 2540C										
Blank (B246110-BLK1)				Prepared & Analyzed: 11/15/19						
Total Dissolved Solids	ND	10	mg/L							
LCS (B246110-BS1)				Prepared & Analyzed: 11/15/19						
Total Dissolved Solids	240	10	mg/L	293		81.6	59.4-118			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2											
Blank (B246462-BLK1)				Prepared: 11/19/19 Analyzed: 11/20/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*24.0*		µg/L	25.0		96.0		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.0*		µg/L	25.0		84.0		80-120			
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19							
Acetone	81	10	µg/L	100		81.0		70-130			
tert-Amyl Methyl Ether (TAME)	11	0.50	µg/L	10.0		106		70-130			
Benzene	10	0.50	µg/L	10.0		102		70-130			
Bromobenzene	9.5	0.50	µg/L	10.0		95.0		70-130			
Bromochloromethane	10	0.50	µg/L	10.0		105		70-130			
Bromodichloromethane	10	0.50	µg/L	10.0		102		70-130			
Bromoform	11	0.50	µg/L	10.0		112		70-130			
Bromomethane	9.2	2.0	µg/L	10.0		92.0		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		104		70-130			
tert-Butyl Alcohol (TBA)	96	5.0	µg/L	100		95.6		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		93.8		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		108		70-130			
tert-Butylbenzene	11	0.50	µg/L	10.0		107		70-130			
tert-Butyl Ethyl Ether (TBEE)	11	0.50	µg/L	10.0		111		70-130			
Carbon Disulfide	98	5.0	µg/L	100		97.5		70-130			
Carbon Tetrachloride	10	0.50	µg/L	10.0		101		70-130			
Chlorobenzene	10	0.50	µg/L	10.0		102		70-130			
Chloroethane	10	0.50	µg/L	10.0		103		70-130			
Chloroform	9.7	0.50	µg/L	10.0		97.3		70-130			
Chloromethane	15	2.0	µg/L	10.0		**154**	*	70-130			L-01
2-Chlorotoluene	9.6	0.50	µg/L	10.0		95.5		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		101		70-130			
Dibromochloromethane	10	0.50	µg/L	10.0		104		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	11	2.0	µg/L	10.0		109		70-130			
1,2-Dibromoethane (EDB)	10	0.50	µg/L	10.0		99.7		70-130			
Dibromomethane	10	0.50	µg/L	10.0		100		70-130			
1,2-Dichlorobenzene	9.5	0.50	µg/L	10.0		95.2		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246462 - EPA 524.2										
LCS (B246462-BS1)				Prepared: 11/19/19 Analyzed: 11/20/19						
1,3-Dichlorobenzene	9.8	0.50	µg/L	10.0		97.6	70-130			
1,4-Dichlorobenzene	9.8	0.50	µg/L	10.0		98.0	70-130			
Dichlorodifluoromethane (Freon 12)	12	0.50	µg/L	10.0		125	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		107	70-130			
1,2-Dichloroethane	8.9	0.50	µg/L	10.0		89.2	70-130			
1,1-Dichloroethylene	9.1	0.50	µg/L	10.0		91.0	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		101	70-130			
trans-1,2-Dichloroethylene	9.4	0.50	µg/L	10.0		93.7	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		112	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		103	70-130			
2,2-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
1,1-Dichloropropene	11	0.50	µg/L	10.0		105	70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		109	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		115	70-130			
Diethyl Ether	9.4	0.50	µg/L	10.0		94.5	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		104	70-130			
Ethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Hexachlorobutadiene	11	0.50	µg/L	10.0		105	70-130			
2-Hexanone (MBK)	100	5.0	µg/L	100		102	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		103	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.8	0.50	µg/L	10.0		98.1	70-130			
Methylene Chloride	8.7	0.50	µg/L	10.0		87.4	70-130			
4-Methyl-2-pentanone (MIBK)	100	5.0	µg/L	100		101	70-130			
Naphthalene	8.5	1.0	µg/L	10.0		85.0	70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		104	70-130			
Styrene	11	0.50	µg/L	10.0		106	70-130			
1,1,1,2-Tetrachloroethane	11	0.50	µg/L	10.0		108	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		100	70-130			
Tetrachloroethylene	9.8	0.50	µg/L	10.0		98.2	70-130			
Tetrahydrofuran	12	2.0	µg/L	10.0		118	70-130			
Toluene	9.9	0.50	µg/L	10.0		98.7	70-130			
1,2,3-Trichlorobenzene	8.8	0.50	µg/L	10.0		87.6	70-130			
1,2,4-Trichlorobenzene	9.0	0.50	µg/L	10.0		90.2	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		97.1	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		102	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		100	70-130			
Trichlorofluoromethane (Freon 11)	9.0	0.50	µg/L	10.0		89.9	70-130			
1,2,3-Trichloropropane	9.6	0.50	µg/L	10.0		95.7	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		88.8	70-130			
1,2,4-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		108	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		118	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		98.3	70-130			
o-Xylene	10	0.50	µg/L	10.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.9*		µg/L	25.0		104	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.3*		µg/L	25.0		101	80-120			

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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.
H-03	Sample received after recommended holding time was exceeded.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 180.1 in Water	
Turbidity	NC
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 2540C in Water	
Total Dissolved Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

19K0857

con-test ANALYTICAL LABORATORY

KAF

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Page 1 of 1

Company Name: Kleinfelder
Address: Suite 110-4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA - hydrology Study
Project Location: Dover MA ~~hydrology Study~~
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovermа.org
Sampled By: Andy Bayliss, Caddy Riguta

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery			
Format:	PDF	X	EXCEL X
Other:			
CLP Like Data Pkg Required:			
Email To:	KRyan@Kleinfelder.com		
Fax To #:			

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	~~Ending Date/Time~~	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOCs by 542.2	Mercury	Sodium	Chloride	TDS	Turbidity	pH
01	MW-15	11/12/19	1140	GRAB	GW	U	3		5			X	X	X	X	X	X			X
02	TRIP BLANK	11/12/19	~~0000~~	GMR			1							X						
03	FIELD BLANK	11/12/19	1100	GRAB	GW	U	3		~~5~~ 7 GMR			X	X	X	X	X	X	X	X	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

*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
Kirsten Ryan	11/12/19 1645
Received by: (signature)	Date/Time:
KAF Sample Fridge	11/12/19 1645
Relinquished by: (signature)	Date/Time:
[illegible]	11/13/19 1350
Received by: (signature)	Date/Time:
[illegible]	11/14/19 1350
Relinquished by: (signature)	Date/Time:
[illegible]	11/14/19 1630
Received by: (signature)	Date/Time:
[illegible] 23C	11/14/19 1630
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GT
Other:

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	X	MWRA		WRTA	
Federal		21 J		School			
City		Brownfield		MBTA			

Other
- Chromatogram
- AIHA-LAP,LLC

PCB ONLY
- Soxhlet
- Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Kleinfelder

Received By RLF Date 11/14/19 Time 1030

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 23.5

By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

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? F

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? T Who was notified? Miranda

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid TPHC2 Base NA

Vials		Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	7	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	12	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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:

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

November 26, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K0912

Enclosed are results of analyses for samples received by the laboratory on November 15, 2019. 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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K0912

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-16	19K0912-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 4500 H B	
Field Blank	19K0912-02	Ground Water		EPA 180.1	
				EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM 21-22 4500 NO2 B	
				SM 21-22 4500 NO3 F	MA M-CT007/CT PH-0618/NY11301
				SM21-22 2540C	
				SM21-22 4500 H B	
Trip Blank	19K0912-03	Trip Blank Water		-	

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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 180.1

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

Turbidity
19K0912-02[Field Blank]

R-01

Duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result.

Analyte & Samples(s) Qualified:

Turbidity
B246212-DUP1

EPA 524.2

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:

Chloromethane
B246771-BS1

SM 21-22 4500 NO2 B

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Nitrite as N
B246244-BSD1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K0912-01[MW-16], 19K0912-02[Field Blank]

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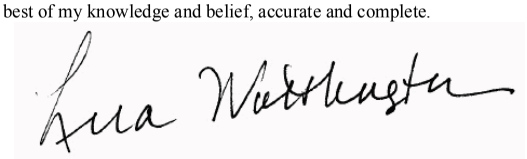
The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this 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

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: MW-16 | Sampled: 11/13/2019 13:30

Sample ID: 19K0912-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	3.2	0.010	mg/L	1		EPA 200.7	11/23/19	11/24/19 17:19	MJH
Sodium	7.9	2.0	mg/L	1		EPA 200.7	11/23/19	11/24/19 17:19	MJH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0912
Date Received: 11/15/2019
Field Sample #: MW-16
Sampled: 11/13/2019 13:30
Sample ID: 19K0912-01
Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	23	1.0	mg/L	1		EPA 300.0	11/24/19	11/24/19 12:25	IS
Nitrite as N	0.025	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @22.7°C	6.7		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 20:23	AIA

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: MW-16 | Sampled: 11/13/2019 13:30

Sample ID: 19K0912-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: MW-16 | Sampled: 11/13/2019 13:30

Sample ID: 19K0912-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 22:11	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	94.2	80-120		11/22/19 22:11
1,2-Dichlorobenzene-d4	86.9	80-120		11/22/19 22:11

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: MW-16
Sampled: 11/13/2019 13:30

Sample ID: 19K0912-01

Sample Matrix: Ground Water

E353.2

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate-Nitrite (N)	< 0.02	0.02	mg/L	1		E353.2		11/19/19 17:15	PEL

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/23/19	11/24/19 17:49	MJH
Sodium	ND	2.0	mg/L	1		EPA 200.7	11/23/19	11/24/19 17:49	MJH

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	ND	1.0	mg/L	1		EPA 300.0	11/24/19	11/24/19 13:10	IS
Nitrite as N	ND	0.010	mg/L	1		SM 21-22 4500 NO2 B	11/15/19	11/15/19 9:55	IS
pH @22.3°C	5.3		pH Units	1	H-05	SM21-22 4500 H B	11/15/19	11/15/19 20:23	AIA
Turbidity	ND	0.50	NTU	1	H-03	EPA 180.1	11/15/19	11/15/19 21:45	KMV

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Dissolved Solids	ND	10	mg/L	1		SM21-22 2540C	11/18/19	11/18/19 13:15	LL

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF

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Project Location: Dover, MA | Sample Description: | Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank | Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/22/19	11/22/19 16:01	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	92.6	80-120		11/22/19 16:01
1,2-Dichlorobenzene-d4	86.3	80-120		11/22/19 16:01

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Project Location: Dover, MA
Sample Description:
Work Order: 19K0912

Date Received: 11/15/2019

Field Sample #: Field Blank
Sampled: 11/13/2019 11:30

Sample ID: 19K0912-02

Sample Matrix: Ground Water

E353.2

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate-Nitrite (N)	< 0.02	0.02	mg/L	1		E353.2		11/19/19 17:16	PEL

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Sample Extraction Data

EPA 180.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-02 [Field Blank]	B246212	25.0	25.0	11/15/19

Prep Method: EPA 200.7 Dissolved-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-01 [MW-16]	B246846	5.00	5.00	11/23/19

Prep Method: EPA 200.7 Dissolved-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-02 [Field Blank]	B246847	5.00	5.00	11/23/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-01 [MW-16]	B246842	10.0	10.0	11/24/19
19K0912-02 [Field Blank]	B246842	10.0	10.0	11/24/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-01 [MW-16]	B246771	5	5.00	11/22/19
19K0912-02 [Field Blank]	B246771	5	5.00	11/22/19

SM 21-22 4500 NO2 B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K0912-01 [MW-16]	B246244	50.0	50.0	11/15/19
19K0912-02 [Field Blank]	B246244	50.0	50.0	11/15/19

SM21-22 2540C

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0912-02 [Field Blank]	B246284	50.0	11/18/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K0912-01 [MW-16]	B246209	50.0	11/15/19
19K0912-02 [Field Blank]	B246209	50.0	11/15/19

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246846 - EPA 200.7 Dissolved										
Blank (B246846-BLK1)				Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246846-BS1)				Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	3.95	0.010	mg/L	4.00		98.9	85-115			
Sodium	4.18	2.0	mg/L	4.00		104	85-115			
Duplicate (B246846-DUP1)	**Source: 19K0912-01**			Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	3.17	0.010	mg/L		3.15			0.637	20	
Sodium	7.90	2.0	mg/L		7.87			0.358	20	
Matrix Spike (B246846-MS1)	**Source: 19K0912-01**			Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	5.10	0.010	mg/L	2.04	3.15	95.7	70-130			
Sodium	24.5	2.0	mg/L	16.3	7.87	102	70-130			
Batch B246847 - EPA 200.7 Dissolved										
Blank (B246847-BLK1)				Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246847-BS1)				Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	3.95	0.010	mg/L	4.00		98.9	85-115			
Sodium	4.18	2.0	mg/L	4.00		104	85-115			
Duplicate (B246847-DUP1)	**Source: 19K0912-02**			Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	ND	0.010	mg/L		ND			NC	20	
Sodium	ND	2.0	mg/L		ND			NC	20	
Matrix Spike (B246847-MS1)	**Source: 19K0912-02**			Prepared: 11/23/19 Analyzed: 11/24/19						
Manganese	1.96	0.010	mg/L	2.04	ND	95.9	70-130			
Sodium	16.7	2.0	mg/L	16.3	ND	102	70-130			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B246209 - SM21-22 4500 H B												
LCS (B246209-BS1)				Prepared & Analyzed: 11/15/19								
pH	6.05		pH Units	6.00		101		90-110				
Batch B246212 - EPA 180.1												
Blank (B246212-BLK1)				Prepared & Analyzed: 11/15/19								
Turbidity	ND	0.50	NTU									
LCS (B246212-BS1)				Prepared & Analyzed: 11/15/19								
Turbidity	3.9		NTU	4.00		97.2		90-110				
LCS Dup (B246212-BSD1)				Prepared & Analyzed: 11/15/19								
Turbidity	3.9		NTU	4.00		98.2		90-110	1.02		5	
Duplicate (B246212-DUP1)	**Source: 19K0912-02**			Prepared & Analyzed: 11/15/19								
Turbidity	ND	0.50	NTU		ND				NC		11.4	R-01
Batch B246244 - SM 21-22 4500 NO2 B												
Blank (B246244-BLK1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	ND	0.010	mg/L									
LCS (B246244-BS1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.077	0.010	mg/L	0.100		**77.2**	*	86.8-110				L-07
LCS Dup (B246244-BSD1)				Prepared & Analyzed: 11/15/19								
Nitrite as N	0.088	0.010	mg/L	0.100		87.9		86.8-110	**13.0**	*	8.34	R-05
Batch B246842 - EPA 300.0												
Blank (B246842-BLK1)				Prepared & Analyzed: 11/24/19								
Chloride	ND	1.0	mg/L									
LCS (B246842-BS1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110				
LCS Dup (B246842-BSD1)				Prepared & Analyzed: 11/24/19								
Chloride	11	1.0	mg/L	10.0		108		90-110	0.0138		20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246284 - SM21-22 2540C										
Blank (B246284-BLK1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	ND	10	mg/L							
LCS (B246284-BS1)				Prepared & Analyzed: 11/18/19						
Total Dissolved Solids	270	10	mg/L	293		91.5	59.4-118			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2											
Blank (B246771-BLK1)				Prepared & Analyzed: 11/22/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.5		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.6*		µg/L	25.0		86.5		80-120			
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19							
Acetone	80	10	µg/L	100		79.9		70-130			
tert-Amyl Methyl Ether (TAME)	9.0	0.50	µg/L	10.0		89.5		70-130			
Benzene	10	0.50	µg/L	10.0		101		70-130			
Bromobenzene	9.7	0.50	µg/L	10.0		97.4		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		107		70-130			
Bromodichloromethane	9.8	0.50	µg/L	10.0		98.3		70-130			
Bromoform	9.8	0.50	µg/L	10.0		98.1		70-130			
Bromomethane	9.4	2.0	µg/L	10.0		93.9		70-130			
2-Butanone (MEK)	100	5.0	µg/L	100		102		70-130			
tert-Butyl Alcohol (TBA)	95	5.0	µg/L	100		94.9		70-130			
n-Butylbenzene	9.4	0.50	µg/L	10.0		94.0		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		103		70-130			
tert-Butyl Ethyl Ether (TBEE)	9.9	0.50	µg/L	10.0		99.4		70-130			
Carbon Disulfide	97	5.0	µg/L	100		96.7		70-130			
Carbon Tetrachloride	9.3	0.50	µg/L	10.0		93.1		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		105		70-130			
Chloroethane	9.9	0.50	µg/L	10.0		98.8		70-130			
Chloroform	9.8	0.50	µg/L	10.0		97.6		70-130			
Chloromethane	17	2.0	µg/L	10.0		**174**	*	70-130			L-01
2-Chlorotoluene	9.5	0.50	µg/L	10.0		94.8		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
Dibromochloromethane	9.8	0.50	µg/L	10.0		98.5		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	9.6	2.0	µg/L	10.0		95.8		70-130			
1,2-Dibromoethane (EDB)	9.8	0.50	µg/L	10.0		98.4		70-130			
Dibromomethane	10	0.50	µg/L	10.0		99.8		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		101		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246771 - EPA 524.2										
LCS (B246771-BS1)				Prepared & Analyzed: 11/22/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		102	70-130			
1,4-Dichlorobenzene	9.7	0.50	µg/L	10.0		97.1	70-130			
Dichlorodifluoromethane (Freon 12)	11	0.50	µg/L	10.0		114	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	8.7	0.50	µg/L	10.0		87.0	70-130			
1,1-Dichloroethylene	9.0	0.50	µg/L	10.0		89.7	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		100	70-130			
trans-1,2-Dichloroethylene	9.3	0.50	µg/L	10.0		93.3	70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.0	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		103	70-130			
cis-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
trans-1,3-Dichloropropene	11	0.50	µg/L	10.0		107	70-130			
Diethyl Ether	9.5	0.50	µg/L	10.0		94.6	70-130			
Diisopropyl Ether (DIPE)	10	0.50	µg/L	10.0		105	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		103	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	95	5.0	µg/L	100		95.4	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		102	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		110	70-130			
Methyl tert-Butyl Ether (MTBE)	9.2	0.50	µg/L	10.0		91.7	70-130			
Methylene Chloride	9.2	0.50	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	99	5.0	µg/L	100		98.7	70-130			
Naphthalene	8.2	1.0	µg/L	10.0		81.6	70-130			
n-Propylbenzene	11	0.50	µg/L	10.0		106	70-130			
Styrene	10	0.50	µg/L	10.0		104	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.9	70-130			
1,1,2,2-Tetrachloroethane	10	0.50	µg/L	10.0		99.6	70-130			
Tetrachloroethylene	9.7	0.50	µg/L	10.0		97.4	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		110	70-130			
Toluene	9.9	0.50	µg/L	10.0		99.1	70-130			
1,2,3-Trichlorobenzene	8.5	0.50	µg/L	10.0		85.0	70-130			
1,2,4-Trichlorobenzene	8.8	0.50	µg/L	10.0		88.0	70-130			
1,1,1-Trichloroethane	9.7	0.50	µg/L	10.0		96.9	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		100	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		101	70-130			
Trichlorofluoromethane (Freon 11)	8.4	0.50	µg/L	10.0		84.4	70-130			
1,2,3-Trichloropropane	9.3	0.50	µg/L	10.0		92.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		89.3	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		102	70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		97.8	70-130			
o-Xylene	10	0.50	µg/L	10.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.4*		µg/L	25.0		101	80-120			

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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.
H-03	Sample received after recommended holding time was exceeded.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-01	Duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 180.1 in Water	
Turbidity	NC
EPA 200.7 in Water	
Manganese	CT,MA,NH,RI,NY,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM 21-22 4500 NO2 B in Water	
Nitrite as N	CT,NH,NY,ME,NC,VA,RI
SM21-22 2540C in Water	
Total Dissolved Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test® ANALYTICAL LABORATORY
KAF
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

1940912

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover MA: Hydrology Study
Project Location: Dover MA: ~~Hydrology~~ Study
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovermo.org
Sampled By: Andy Bayliss

Requested Turnaround Time
7-Day [X] 10-Day [ ]
PFAS 10-Day (std) [ ] Due Date:

Rush Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Data Delivery
Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: KRyan@Kleinfelder.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	pH	TDS	Turbidity
	MW-16	11/13/19	1330	GRAB	GW	U	3		5			X	X	X	X	X	X	X		
	Field Blank	11/13/19	1130	GRAB	GW	U	3		~~7~~ (A3)			X	X	X	X	X	X	X	X	X
	~~Trip Blank~~	~~11/13/19~~	~~0800~~ (A3)				~~1~~ (A3)							X						
	only run if VOCs detected																			

[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
*Contest 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) NONE

Relinquished by: (signature)	Date/Time:
	11/13/19 1820
Received by: (signature) KLF Fridge	11/13/19 1800
Relinquished by: (signature)	11/15 0945
Received by: (signature)	11/15/19 945
Relinquished by: (signature)	
Received by: (signature)	
Relinquished by: (signature)	
Received by: (signature)	

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GW
Other

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 [X] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other
[ ] Chromatogram
[ ] AIHA-LAP,LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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 Klein felder **Received By** LDA Date 11/15/19 Time 9:45

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____ By Gun # 5 Actual Temp - 4.6

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? 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? STLDA 11.15.19 Who was notified? mary

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? IFMA

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid pH<2 Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	7	500 mL Amb.		500 mL Plastic	1	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	13	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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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November 27, 2019

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 2019428.001A
Laboratory Work Order Number: 19K1086

Enclosed are results of analyses for samples received by the laboratory on November 18, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 11/27/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2019428.001A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19K1086

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

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-17	19K1086-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-22 4500 H B	
Trip Blank	19K1086-02	Trip Blank Water		EPA 524.2	

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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 524.2

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:

Chloromethane
B246895-BS1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19K1086-01[MW-17]

The results of analyses reported only relate to samples submitted to the Con-Test 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.

Tod E. Kopyscinski
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: MW-17
Sampled: 11/18/2019 15:00

Sample ID: 19K1086-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:02	TBC
Sodium	59	2.0	mg/L	1		EPA 200.7	11/20/19	11/21/19 19:02	TBC

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

Project Location: Dover, MA | Sample Description: | Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: MW-17 | Sampled: 11/18/2019 15:00

Sample ID: 19K1086-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	85	5.0	mg/L	5		EPA 300.0	11/25/19	11/25/19 18:45	MMH
Nitrate as N	4.8	0.10	mg/L	1		EPA 300.0	11/19/19	11/19/19 21:57	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	11/19/19	11/19/19 21:57	IS
pH @19.4°C	6.0		pH Units	1	H-05	SM21-22 4500 H B	11/18/19	11/18/19 21:43	AIA

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: MW-17 | Sampled: 11/18/2019 15:00

Sample ID: 19K1086-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: MW-17 | Sampled: 11/18/2019 15:00

Sample ID: 19K1086-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/25/19	11/25/19 18:16	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	94.0	80-120		11/25/19 18:16
1,2-Dichlorobenzene-d4	84.7	80-120		11/25/19 18:16

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: Trip Blank | Sampled: 11/18/2019 00:00

Sample ID: 19K1086-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Benzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Bromoform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Bromomethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Chloroform	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Chloromethane	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 19K1086

Date Received: 11/18/2019

Field Sample #: Trip Blank | Sampled: 11/18/2019 00:00

Sample ID: 19K1086-02

Sample Matrix: Trip Blank Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Styrene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Toluene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	11/25/19	11/25/19 11:12	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
4-Bromofluorobenzene	93.1	80-120		11/25/19 11:12
1,2-Dichlorobenzene-d4	85.0	80-120		11/25/19 11:12

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Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1086-01 [MW-17]	B246597	50.0	50.0	11/20/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1086-01 [MW-17]	B246388	10.0	10.0	11/19/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1086-01 [MW-17]	B246970	10.0	10.0	11/25/19

Prep Method: EPA 524.2-EPA 524.2

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19K1086-01 [MW-17]	B246895	5	5.00	11/25/19
19K1086-02 [Trip Blank]	B246895	5	5.00	11/25/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19K1086-01 [MW-17]	B246387	50.0	11/18/19

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246597 - EPA 200.7										
Blank (B246597-BLK1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B246597-BS1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.513	0.010	mg/L	0.500		103	85-115			
Sodium	4.23	2.0	mg/L	4.00		106	85-115			
LCS Dup (B246597-BSD1)				Prepared: 11/20/19 Analyzed: 11/21/19						
Manganese	0.502	0.010	mg/L	0.500		100	85-115	2.10	20	
Sodium	4.12	2.0	mg/L	4.00		103	85-115	2.55	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246387 - SM21-22 4500 H B										
LCS (B246387-BS1)				Prepared & Analyzed: 11/18/19						
pH	5.98		pH Units	6.00		99.7	90-110			
Batch B246388 - EPA 300.0										
Blank (B246388-BLK1)				Prepared & Analyzed: 11/19/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B246388-BS1)				Prepared & Analyzed: 11/19/19						
Nitrate as N	0.49	0.10	mg/L	0.500		97.7	90-110			
Nitrite as N	0.480	0.100	mg/L	0.500		96.0	90-110			
LCS Dup (B246388-BSD1)				Prepared & Analyzed: 11/19/19						
Nitrate as N	0.49	0.10	mg/L	0.500		98.0	90-110	0.347	20	
Nitrite as N	0.480	0.100	mg/L	0.500		95.9	90-110	0.0834	20	
Batch B246970 - EPA 300.0										
Blank (B246970-BLK1)				Prepared & Analyzed: 11/25/19						
Chloride	ND	1.0	mg/L							
LCS (B246970-BS1)				Prepared & Analyzed: 11/25/19						
Chloride	5.2	1.0	mg/L	5.00		105	90-110			
LCS Dup (B246970-BSD1)				Prepared & Analyzed: 11/25/19						
Chloride	5.2	1.0	mg/L	5.00		105	90-110	0.0172	20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2										
Blank (B246895-BLK1)				Prepared & Analyzed: 11/25/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2											
Blank (B246895-BLK1)				Prepared & Analyzed: 11/25/19							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*23.0*		µg/L	25.0		92.1		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*21.4*		µg/L	25.0		85.8		80-120			
LCS (B246895-BS1)				Prepared & Analyzed: 11/25/19							
Acetone	81	10	µg/L	100		81.0		70-130			
tert-Amyl Methyl Ether (TAME)	9.1	0.50	µg/L	10.0		91.4		70-130			
Benzene	10	0.50	µg/L	10.0		104		70-130			
Bromobenzene	9.8	0.50	µg/L	10.0		97.8		70-130			
Bromochloromethane	11	0.50	µg/L	10.0		109		70-130			
Bromodichloromethane	10	0.50	µg/L	10.0		99.9		70-130			
Bromoform	10	0.50	µg/L	10.0		104		70-130			
Bromomethane	9.9	2.0	µg/L	10.0		98.8		70-130			
2-Butanone (MEK)	110	5.0	µg/L	100		106		70-130			
tert-Butyl Alcohol (TBA)	93	5.0	µg/L	100		93.5		70-130			
n-Butylbenzene	9.3	0.50	µg/L	10.0		93.3		70-130			
sec-Butylbenzene	11	0.50	µg/L	10.0		105		70-130			
tert-Butylbenzene	11	0.50	µg/L	10.0		106		70-130			
tert-Butyl Ethyl Ether (TBEE)	10	0.50	µg/L	10.0		104		70-130			
Carbon Disulfide	92	5.0	µg/L	100		92.4		70-130			
Carbon Tetrachloride	9.6	0.50	µg/L	10.0		95.8		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		106		70-130			
Chloroethane	10	0.50	µg/L	10.0		99.5		70-130			
Chloroform	9.6	0.50	µg/L	10.0		96.4		70-130			
Chloromethane	19	2.0	µg/L	10.0		**186**	*	70-130			L-01
2-Chlorotoluene	9.8	0.50	µg/L	10.0		98.3		70-130			
4-Chlorotoluene	10	0.50	µg/L	10.0		102		70-130			
Dibromochloromethane	10	0.50	µg/L	10.0		102		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	10	2.0	µg/L	10.0		103		70-130			
1,2-Dibromoethane (EDB)	10	0.50	µg/L	10.0		103		70-130			
Dibromomethane	11	0.50	µg/L	10.0		106		70-130			
1,2-Dichlorobenzene	10	0.50	µg/L	10.0		99.9		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B246895 - EPA 524.2										
LCS (B246895-BS1)				Prepared & Analyzed: 11/25/19						
1,3-Dichlorobenzene	10	0.50	µg/L	10.0		104	70-130			
1,4-Dichlorobenzene	9.9	0.50	µg/L	10.0		99.4	70-130			
Dichlorodifluoromethane (Freon 12)	13	0.50	µg/L	10.0		125	70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		106	70-130			
1,2-Dichloroethane	9.2	0.50	µg/L	10.0		92.2	70-130			
1,1-Dichloroethylene	8.8	0.50	µg/L	10.0		88.2	70-130			
cis-1,2-Dichloroethylene	10	0.50	µg/L	10.0		102	70-130			
trans-1,2-Dichloroethylene	10	0.50	µg/L	10.0		102	70-130			
1,2-Dichloropropane	12	0.50	µg/L	10.0		115	70-130			
1,3-Dichloropropane	10	0.50	µg/L	10.0		102	70-130			
2,2-Dichloropropane	9.6	0.50	µg/L	10.0		96.2	70-130			
1,1-Dichloropropene	10	0.50	µg/L	10.0		102	70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		110	70-130			
trans-1,3-Dichloropropene	10	0.50	µg/L	10.0		105	70-130			
Diethyl Ether	9.2	0.50	µg/L	10.0		92.0	70-130			
Diisopropyl Ether (DIPE)	11	0.50	µg/L	10.0		107	70-130			
Ethylbenzene	10	0.50	µg/L	10.0		104	70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		101	70-130			
2-Hexanone (MBK)	100	5.0	µg/L	100		103	70-130			
Isopropylbenzene (Cumene)	10	0.50	µg/L	10.0		103	70-130			
p-Isopropyltoluene (p-Cymene)	11	0.50	µg/L	10.0		108	70-130			
Methyl tert-Butyl Ether (MTBE)	9.6	0.50	µg/L	10.0		95.9	70-130			
Methylene Chloride	9.6	0.50	µg/L	10.0		96.2	70-130			
4-Methyl-2-pentanone (MIBK)	100	5.0	µg/L	100		103	70-130			
Naphthalene	8.6	1.0	µg/L	10.0		86.0	70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		105	70-130			
Styrene	11	0.50	µg/L	10.0		110	70-130			
1,1,1,2-Tetrachloroethane	10	0.50	µg/L	10.0		104	70-130			
1,1,2,2-Tetrachloroethane	11	0.50	µg/L	10.0		105	70-130			
Tetrachloroethylene	10	0.50	µg/L	10.0		99.7	70-130			
Tetrahydrofuran	11	2.0	µg/L	10.0		113	70-130			
Toluene	10	0.50	µg/L	10.0		101	70-130			
1,2,3-Trichlorobenzene	8.7	0.50	µg/L	10.0		87.3	70-130			
1,2,4-Trichlorobenzene	9.0	0.50	µg/L	10.0		89.7	70-130			
1,1,1-Trichloroethane	9.4	0.50	µg/L	10.0		94.4	70-130			
1,1,2-Trichloroethane	10	0.50	µg/L	10.0		101	70-130			
Trichloroethylene	10	0.50	µg/L	10.0		102	70-130			
Trichlorofluoromethane (Freon 11)	8.5	0.50	µg/L	10.0		85.3	70-130			
1,2,3-Trichloropropane	10	0.50	µg/L	10.0		103	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	8.9	0.50	µg/L	10.0		88.6	70-130			
1,2,4-Trimethylbenzene	10	0.50	µg/L	10.0		104	70-130			
1,3,5-Trimethylbenzene	10	0.50	µg/L	10.0		104	70-130			
Vinyl Chloride	12	0.50	µg/L	10.0		120	70-130			
m&p-Xylene	20	1.0	µg/L	20.0		98.6	70-130			
o-Xylene	10	0.50	µg/L	10.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*25.9*		µg/L	25.0		103	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*25.2*		µg/L	25.0		101	80-120			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-22 4500 H B in Water	
pH	CT,MA,RI

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

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KAF

Company Name: Kleinfelder
Address: Suite 110 - 4 Technology Dr, Westborough, MA
Phone: 508-370-8256
Project Name: Dover, MA: hydrology Study
Project Location: Dover MA ~~hydrology Study~~
Project Number: 20192428.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number:
Invoice Recipient: boh@dovermo.org
Sampled By: Andy Bayliss

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

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

Dissolved Metals Samples	
	Field Filtered
	Lab to Filter

Orthophosphate Samples	
	Field Filtered
	Lab to Filter

Data Delivery			
Format:	PDF	X	EXCEL X
Other:			
CLP Like Data Pkg Required:			
Email To:	KRyan@Kleinfelder.com		
Fax To #:			

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	~~Beginning~~ Date/~~Time~~	~~Ending~~ Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Nitrate	Nitrite	VOC by 542.2	Manganese	Sodium	Chloride	pH
1	MW-17	11/18/19	1500	GRAB	GW	U	3		5			X	X	X	X	X	X	X
2	Trip Blank	11/18/19					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

*Contest 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) NONE

	Date/Time:
Relinquished by: (signature)	11/18/19 1525
Received by: (signature)	11/18/19 1525
Relinquished by: (signature)	11/18/19 1925
Received by: (signature) 3.0	11/18/19 19:25
Relinquished by: (signature)	
Received by: (signature)	
Relinquished by: (signature)	
Received by: (signature)	

Client Comments: Meet DW reporting limits for VOCs 542.2

Detection Limit Requirements
MA
GT
Other:

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
Federal
City
Municipality X
21 J
Brownfield
MWRA
School
MBTA
WRTA

Other
Chromatogram
AIHA-LAP,LLC

PCB ONLY
Soxhlet
Non Soxhlet

Comments:

Disclaimer: Con-Test Labs 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. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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: Klein felder

Received By: AP Date: 11/18/19 Time: 19:25

How were the samples received? In Cooler: T No Cooler: _____ On Ice: T No Ice: _____ Direct from Sampling: _____ Ambient: _____ Melted Ice: _____

Were samples within Temperature? 2-6°C: T By Gun #: 2 Actual Temp: 3.0 By Blank #: _____ Actual Temp: _____

Was Custody Seal Intact? 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? T Who was notified? katie

Is there enough Volume? T

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

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid: T<2 Base: _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	4	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		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: