

# **2020 Annual Report**

**For**

## **Groundwater Impacts**

**At**

### **Naval Weapons Industrial Reserve Plant Bethpage, New York**

**JUNE 2020**

The estimated cost of this report or study for the Department of Defense is approximately \$60,000 for the 2020 Fiscal Year. This includes \$58,000 in expenses and \$1,600 in DoD labor.

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## **ACRONYMS AND ABBREVIATIONS**

µg/L	microgram per liter
ARAR	Applicable or Relevant and Appropriate Requirement
AROD	Amended Record of Decision
BCP	Bethpage Community Park
BWD	Bethpage Water District
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
COC	chemical of concern
DCA	1,1-dichloroethane
DCE	cis-1,2-dichloroethene
DERP	Defense Environmental Restoration Program
ERP	Environmental Restoration Program
FR	Federal Register
GAC	granulated activated carbon
gpm	gallon per minute
HDR	Henningson, Durham, and Richardson Architecture and Engineering P.C.
HR	Hooker RUCO
HA	Lifetime Health Advisory
LTM	long-term monitoring
LUC	land use control
MCL	maximum contaminant level
mgd	million gallons per day
msl	mean sea level
MWD	Massapequa Water District
ng/L	nanogram per liter
NAVFAC	Naval Facilities Engineering Command
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NG	Northrop Grumman
NCDOH	Nassau County Department of Health
NWIRP	Naval Weapons Industrial Reserve Plant
NYAW	New York American Water (formerly AQUA New York)
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operation and maintenance
ONCT	Onsite Containment System
OU	Operable Unit
PA/SI	Preliminary Assessment/Site Inspection
PCE	tetrachloroethene
PFAS	Per- and polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonic Acid
pCi/L	pico Curies per liter
PWSCP	Public Water Supply Contingency Plan
RAO	remedial action objective
ROD	Record of Decision
SFWD	South Farmingdale Water District
TCA	1,1,1-trichloroethane
TCE	trichloroethene
UOC	Unspecified Organic Contaminant
USACE	U.S. Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency

**ACRONYMS AND ABBREVIATIONS (continued)**

USGS	United States Geological Survey
WIIN	Water Infrastructure Improvements for the Nation
VOC	volatile organic compound
VPB	vertical profile boring

## 1.0 INTRODUCTION

This 2020 Annual Report is the fourth document since 2017 that addresses volatile organic compounds (VOCs) in groundwater downgradient of the former Navy-owned, Northrop Grumman-operated Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage and the separate former Northrop Grumman-owned and Northrop Grumman-operated industrial properties adjacent to the former NWIRP Bethpage (Figures 1-1 and 1-2).

Between 2017 and 2019, the Navy submitted its first three reports, respectively, in response to Title IV, Section 5009 of the Water Infrastructure Improvements for the Nation Act of 2016 (2016 WINN Act), which required the Secretary of the Navy to submit the initial Annual Report by June 14, 2017 and annual reports thereafter through 2021, to the United States Congress.

The requirements of the 2016 WINN Act are as follows:

- “(1) a description of the status of the groundwater contaminants that are leaving the site [former NWIRP Bethpage and two former Northrop Grumman facilities] and migrating to a location within a 10-mile radius of the site, including -
  - (A) detailed mapping of the movement of the plume over time; and
  - (B) projected migration rates of the plume;
- (2) an analysis of the current and future impact of the movement of the plume on drinking water facilities; and
- (3) a comprehensive strategy to prevent the groundwater contaminants from the site from contaminating drinking water wells that, as of the date of the submission of the report, have not been affected by the migration of the plume.”

This 2020 Annual Report presents an updated evaluation of groundwater quality and migration. This report updates the information in the 2019 Annual Report about the status and strategy for what is known as the Operable Unit (OU) 2 Plume, which consists of impacted groundwater downgradient of the former NWIRP Bethpage and one of the two former Northrop Grumman properties. The groundwater contaminants associated with the former NWIRP Bethpage and Northrop Grumman facilities are identified in the New York State Department of Environmental Conservation (NYSDEC) 2001 Record of Decision (ROD) for OU2 Groundwater – Northrop Grumman and Naval Weapons Industrial Reserve Plant Sites and the Navy 2003 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) ROD for NWIRP Bethpage, New York OU2 – Groundwater. These documents list chlorinated VOCs in groundwater, primarily trichloroethene (TCE), that have migrated south of the former NWIRP Bethpage and Northrop Grumman properties (NYSDEC, 2001 and Navy, 2003).

The Navy has completed on-property investigations to determine whether some other chemicals such as 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS), and radiological substances potentially were released at the former NWIRP property and impacted groundwater quality. These evaluations are termed Preliminary Assessments/Site Inspections (PA/SIs) and are the first investigative step in the (CERCLA) site

evaluation sequence when contamination is possible. In addition to records review and personnel interviews, a total of five separate quarterly groundwater sampling events have been completed as a component of each of the PA/SIs. A discussion of the results of groundwater sampling are provided in Section 2.5.

There are other plumes adjacent to and within the footprint of the OU2 Plume that have sources other than NWIRP Bethpage and Northrop Grumman properties. Hooker Ruco (a vinyl chloride, tetrachloroethene [PCE], and TCE plume Superfund Site) and some, as yet unidentified, local dry cleaners and gasoline stations are likely contributing to the footprint of the OU2 Plume (Figure 1-3). In addition, NYSDEC issued the Bethpage Park – Former Grumman Settling Ponds and Adjacent Areas (Bethpage Community Park) 2013 OU3 ROD, Nassau County Site No. 1-30-003C to address VOCs (in particular TCE and its breakdown products) from another adjacent former Northrop Grumman property (NYSDEC, 2013). Investigations have also identified other chemicals in the OU2 Plume, including cadmium, chromium, and polychlorinated biphenyls in on-property groundwater wells; however, there is no evidence that these other chemicals have migrated, and have only a low potential to migrate, to off-property groundwater; and therefore, these other chemicals are not discussed in this report.

The NYSDEC OU2 2001 ROD, Navy OU2 2003 ROD, and NYSDEC Bethpage Community Park OU3 2013 ROD provided strategies and identified response actions to mitigate off-property groundwater impacts to possible receptors, and to protect human health and the environment from actual or threatened releases of hazardous substances. These response actions include:

- Installation and continued operation of on-site containment systems consisting of groundwater extraction wells and treatment plants to capture and treat VOCs before they migrate off property from the former NWIRP Bethpage and/or Northrop Grumman properties (OU2 and OU3).
- Off-property groundwater capture and treatment of hotspots at the GM38 Area Hotspot (OU2) (in operation), the RW21 Area Hotspot (OU3) (under construction), and the RE108 Area Hotspot (OU2) (in design with construction complete on one recovery well), with the objective of reducing contaminant mass in the plume and limiting its downgradient migration. In the OU2 ROD, a hotspot is defined as an area of groundwater with VOC concentrations greater than 1,000 micrograms per liter ( $\mu\text{g/L}$ ).
- Continued monitoring and tracing of the plumes through the installation of vertical profile borings and monitoring wells, and the use of current and potential future upgradient outpost wells to protect public water supplies by supplying at least five-year warning of potential impact.
- Installation of wellhead treatment for impacted and prospectively-impacted public water supply wells.

The Navy and Northrop Grumman continue to work closely with NYSDEC in implementing the ROD remedies. Northrop Grumman and the Navy continue planning additional groundwater hotspot area extraction and treatment systems that will further reduce the off-property plumes and limit their migration

towards downgradient public water supply wells. As a result of these measures, the remedy for the off-property groundwater is protective of human health and the environment.

In 2019, NYSDEC issued an Amended Record of Decision for OU2 and OU3 groundwaters (AROD) (NYSDEC, 2019). The AROD identified additional actions that NYSDEC would implement in order to attempt to contain the migration of VOCs in the area of the OU2 and OU3 plumes. Contemporaneously, the Navy has undertaken a Five-Year Review process, as required by CERCLA §121, which is a periodic evaluation of the existing NWIRP remedial actions for continued protection of human health and the environment. As part of this process, the Navy is evaluating relevant components and objectives of NYSDEC's AROD for possible enhancement of the Navy's CERCLA groundwater remedy at Bethpage. These actions are described in Section 5.2.

The Navy holds Restoration Advisory Board meetings twice per year in Bethpage to inform the community of the progress of actions being taken by the Navy to clean up soil and groundwater contamination at and emanating from the former NWIRP Bethpage property. The public as well as representatives of NYSDEC, New York State Department of Health (NYSDOH), Nassau County Department of Health (NCDOH), United States Environmental Protection Agency (U.S. EPA), Town of Oyster Bay, and the local water districts are invited to attend. Actions being conducted by the Navy to address groundwater contamination, including investigations, monitoring, and treatment are discussed at these meetings. The Navy, Northrop Grumman, NYSDEC, NYSDOH, U.S. EPA, and local water districts also participate in separate working meetings to facilitate progress of the OU2 and OU3 cleanups.

The Navy maintains a public repository, which includes supporting technical documents and correspondence related to NWIRP Bethpage, at the following location:

Bethpage Public Library  
47 Powell Avenue  
Bethpage, New York 11714  
(516) 931-3907

A public web site with the Administrative Record can be accessed at the following web page:

<http://go.usa.gov/DyXF>

## **1.1 BACKGROUND**

The Navy Environmental Restoration Program (ERP) is implemented pursuant to CERCLA 42 U.S.C. Secs. 9601-9675, and the Defense Environmental Restoration Program (DERP), 10 U.S.C. Secs. 2701 – 2711, to address Navy and Marine Corps facilities that were contaminated with hazardous substances or pollutants or contaminants.

## **1.2 REPORT ORGANIZATION**

This report is organized as shown in the Table of Contents. Acronyms and abbreviations are presented after the Table of Contents. Graphs, figures, and appendices are provided at the end of the document.

## **2.0 SITE BACKGROUND**

This section provides a summary of background information for the former NWIRP Bethpage and Northrop Grumman properties, the surrounding area, and the OU2 and OU3 groundwater plumes.

### **2.1 NWIRP BETHPAGE INFORMATION**

The former NWIRP Bethpage is located in Nassau County on Long Island, New York; approximately 30 miles east of New York City (Figure 1-1). The property that would later become NWIRP Bethpage was part of the property owned and operated by Grumman for the research prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft during World War II. At their peak, Grumman's operations at the former NWIRP Bethpage included four plants used for assembly and prototype testing, a group of quality control laboratories, two warehouse complexes (north and south), a salvage storage area, water recharge basins, an Industrial Wastewater Treatment Facility, and several smaller support buildings (Figure 1-2). The Navy acquired the property that became the NWIRP Bethpage in 1947. The NWIRP was a Government-Owned Contractor Operated (GOCO) property that was operated by Northrop Grumman until September 1996.

As a result of Northrop Grumman's decision to terminate operations at NWIRP Bethpage, the U.S. Congress passed special legislation under Section 2852 of the National Defense Authorization Act of 1998 (P.L.105-85, 111 Stat. 1629), permitting conveyance of the Navy-owned real property at NWIRP Bethpage to Nassau County, New York for economic redevelopment. NWIRP Bethpage originally included a main parcel of approximately 105 acres and a separate parcel of approximately 4.5 acres located to the north of the main parcel.

In 2002, the Navy transferred the 4.5-acre parcel to Nassau County. On February 26, 2008, the Navy transferred 96 acres of the 105-acre main parcel to Nassau County and is leasing the remaining 9 acres to Nassau County. Two Navy Environmental Restoration sites located on the main parcel that were transferred, Site 2 – Recharge Basins and Site 3- Salvage Storage Area, require land use controls (LUCs) and Five-Year Reviews as a part of the selected remedy. These LUCs are in place and reviews are being conducted, as required. The 9-acre parcel the Navy retains for environmental investigation and remediation includes Navy Environmental Restoration Site 1 – the Former Drum Marshalling Area and Site 4 – Former Underground Storage Tank area. Upon successful remediation of the 9-acre parcel, it will also be transferred to Nassau County. The transfer and lease documents provide LUCs and notifications for the long-term management of the property.

From 1998 to 2011, activities occurring at the former 105-acre NWIRP Bethpage included property maintenance (security and mowing), storage of Nassau County impounded vehicles, and environmental investigations and/or remediation of soil, groundwater, and soil vapor.

In 2011, Steel-Los III, L.P. bought 84 acres of the 96-acre property that the Navy had transferred to Nassau County and has been renovating the property to attract new tenants. Nassau County has retained the

remaining 12 acres for economic development. The Navy-owned 9-acre parcel being leased to Nassau County was subleased to Steel-Los III in 2011. Steel-Los III currently utilizes the owned and leased properties for light industrial and commercial activities, miscellaneous outdoor storage, and as a movie production set. In 2018/2019, a new hub for FedEx was constructed in the area of Site 3. Steel-Los III maintains security for the property. Since 2011, the Navy has continued environmental investigations and response activities on the 9-acre parcel.

Until the 1990s, Northrop Grumman owned approximately 500 acres of property that was adjacent to and surrounded much of the former NWIRP Bethpage (Figure 1-2). Since that time, Northrop Grumman has sold most of the 500 acres. Until 1962, Northrop Grumman also owned an additional 18-acre parcel of land described as the Former Grumman Settling Ponds and Adjacent Areas in NYSDEC's OU3 ROD. Northrop Grumman transferred this parcel to the Town of Oyster Bay in 1962 for construction of the Bethpage Community Park.

### **2.1.1 Surface Features**

The former NWIRP Bethpage and Northrop Grumman properties are located on a relatively flat, glacial outwash plain. The properties and nearby vicinity are highly urbanized. Because of this, most of the natural physical features have been reshaped or destroyed. The topography at the former NWIRP Bethpage is relatively flat with a gentle slope toward the south. Elevations range from greater than 140 feet above mean sea level (msl) in the north to less than 110 feet above msl at the southwest corner. The dominant features at the NWIRP Bethpage property are Plant 3 (the former manufacturing building), North Warehouses, South Warehouses, and three groundwater recharge basins located at Site 2. The recharge basins are each approximately 1.5 to 2.5 acres in area and about 30 to 40 feet deep. Similar features were present at the former Northrop Grumman property, including Plants 1 and 2, which are former manufacturing facilities and recharge basins along the southern and southwestern borders of the former Northrop Grumman property. An airstrip was also present at the former Northrop Grumman property.

### **2.1.2 Surrounding Land Use**

Currently, the land surrounding the former NWIRP Bethpage is primarily a mixture of commercial and residential development. The residential development surrounding much of the former NWIRP Bethpage and Northrop Grumman properties is located in the Hamlets of Bethpage and Plainedge, in the Town of Oyster Bay, and the Hamlets of Levittown and Hicksville, in the Town of Hempstead.

## **2.2 GEOLOGY**

The former NWIRP Bethpage and Northrop Grumman properties are underlain by approximately 1,100 feet of unconsolidated sediments that overlie crystalline bedrock (Isbister, 1966). The unconsolidated sediments consist of four distinct geologic units: Upper Glacial Formation; Magothy Formation; Raritan Clay; and Lloyd Sand Formations (McClymonds and Franke, 1972). The Upper Glacial Formation (glacial deposits) forms the surface deposits across the entire NWIRP Bethpage. This formation consists primarily of coarse sands and gravels and is approximately 30 to 45 feet thick. Variations in the thickness of the

glacial deposits are common due to undulating contact with the underlying Magothy Formation. The Upper Magothy Formation consists primarily of coarse sands to a depth of approximately 100 feet, below which finer sands, silts, and clay predominate. Individual clay units (also called “clay lenses”) significantly increase below subsurface depths of 100 feet but are laterally discontinuous; no individual clay horizon of regional extent underlies the properties in the Magothy. The 100 to 150-foot thick Raritan Clay Formation underlies the Magothy Formation at a depth of approximately 700 to over 1,000 feet below the ground surface (bgs). The underlying Lloyd Sand Formation is approximately 300 feet thick.

### **2.3 HYDROGEOLOGY**

Most of Long Island is bisected by an east-west-trending regional groundwater divide (see Section 4.0). The former NWIRP Bethpage and Northrop Grumman properties occupy an area of recharge, lying south of the divide where regional groundwater flows southward toward South Oyster Bay and the Atlantic Ocean. Groundwater is in contact with the lower portion of the Upper Glacial and Upper Magothy Formations beneath the properties. With limited distinction between the formations, groundwater may be considered a common unconfined aquifer. The glacial deposits underlying the properties are characterized by a high porosity (in excess of 25 percent). Most of the glacial deposits are above the groundwater table in the former NWIRP Bethpage area; however, the high permeability of the glacial deposits allows for rapid recharge of the Magothy Formation from precipitation (Isbister, 1966; McClymonds and Franke, 1972). The number and thickness of clay lenses increase with depth in the Magothy Formation; however, these clay units are laterally discontinuous and do not function as a fully-developed confining unit within the aquifer.

The Magothy aquifer is used to supply large quantities of water for domestic, agricultural, commercial, and industrial uses on Long Island. Based on water level measurements in 2010 to 2019, groundwater across NWIRP Bethpage flows to the south-southeast and the elevation ranges from approximately 70 to 73 feet above msl at the property. The groundwater ultimately discharges to South Oyster Bay, which is at sea level, approximately seven miles south of the NWIRP Bethpage property. Higher groundwater velocities can occur locally in gravel zones and/or in response to pumping stresses. Subtle vertical hydraulic gradients occur in a downward direction. Groundwater in the Magothy Formation is considered a sole source aquifer (NYSDEC Class GA), and is the primary source of potable water for Nassau County. Groundwater is encountered at a depth of approximately 50 feet bgs at the properties.

From the 1960s to the 1990s, Northrop Grumman operated 16 deep production wells (seven wells on the NWIRP Bethpage property and nine wells on the Northrop Grumman property). Extracted water from these production wells was used primarily for non-contact single-pass cooling for plant operations. The wells were screened within the Magothy Formation and each yielded approximately 1,200 gallons per minute (gpm). The majority of the wells were located along the western edge of the properties. Based on the location and extraction rates, the pumping action of these production wells caused groundwater on the NWIRP Bethpage property to locally flow predominantly west and southwest toward the production wells.

In addition, the pumping action of these production wells would also be expected to cause groundwater further west of them to flow east and be captured by these wells.

The production wells extracted groundwater from depths of approximately 280 to 500 feet bgs. Water was discharged into nearby surficial recharge basins. The extraction from the production wells and near surface recharge resulted in vertical gradients across the properties that would enhance the downward migration of chemicals that may have entered the groundwater. Most of the production wells on the former NWIRP Bethpage and Northrop Grumman properties have been decommissioned. Currently, as part of the OU2 On-Site Containment (ONCT) System operated by Northrop Grumman, two of the Northrop Grumman production wells and three additional containment (response action) wells operate with a combined flow rate of approximately 3,800 gpm or 5.5 million gallons per day (mgd) (Figure 1-2). The OU2 ONCT system removes VOCs from the groundwater and limits the migration of VOC-impacted groundwater south of these extraction wells.

## **2.4 GROUNDWATER CONCEPTUAL SITE MODEL**

To enhance the overall understanding of potential contaminant fate and transport with the aquifer, the Navy developed a conceptual site model for these properties. The conceptual site model describes the migration of VOC-impacted groundwater from the various sources through the groundwater aquifer to potential receptors (i.e., public water supply wells). The VOCs in groundwater that may have migrated from the former NWIRP Bethpage and Northrop Grumman properties are identified in the 2001 NYSDEC OU2 ROD, 2003 Navy OU2 CERCLA ROD, the 2013 NYSDEC Bethpage Community Park OU3 ROD, and the 2003 Public Water Supply Contingency Plan (PWSCP). The RODs also address residual VOC-impacted groundwater beneath the former Northrop Grumman and NWIRP Bethpage properties. The VOC releases from these properties form a 3,000-plus acre horizontal area of multiple VOC-impacted groundwater plumes that extend south of Hempstead Turnpike. The VOC-impacted groundwater extends to a depth of approximately 750 feet, though this contamination is not continuous throughout this area and is not present at all depths.

There are other groundwater plumes, not associated with the former NWIRP Bethpage or Northrop Grumman properties, that are known or believed to be present in the area and are likely contributing to the footprint of the OU2 Plume. These other plumes include those emanating from the Hooker Ruco Superfund Site and some local dry cleaners and gasoline stations (Figure 1-3). Furthermore, there is evidence that additional plumes are present to the north and west of the properties that may be impacting groundwater on or south/southwest of the former Northrop Grumman and NWIRP Bethpage properties (Figure 1-3).

Figure 2-1 depicts the conceptual site model that identifies shallow, GM38 Area Hotspot (OU2), Deep Western (OU2), and Deep Eastern (OU3) plumes as the primary NWIRP Bethpage and Northrop Grumman VOC groundwater plumes.

Shallow Plume - VOCs are located in the groundwater between approximately 50 and 300 feet bgs. The VOCs include a mixture of individual organics, including TCE, PCE, 1,1,1-trichloroethane (TCA), and 1,1-dichloroethane (DCA), and are generally found at concentrations of 0.5 to 10 micrograms per liter ( $\mu\text{g/L}$ ) for each contaminant. There are multiple shallow plumes that result from a range of potential sources in addition to those from the former NWIRP Bethpage and former Northrop Grumman properties. These are believed to include dry cleaners, gasoline stations, and residential properties (i.e., septic systems) that in combination form a series of unique, layered, non-continuous plumes throughout the area. The higher concentrations of VOCs (greater than  $10 \mu\text{g/L}$ ) found on the former NWIRP Bethpage and former Northrop Grumman properties have been mostly remediated through response actions conducted at the sources (e.g., NWIRP Bethpage Site 1 Air Sparge/Soil Vapor Extraction System) and/or by containment systems at the former property boundaries (e.g., Northrop Grumman OU2 and the Bethpage Community Park OU3 containment systems). Plumes that have migrated beyond these boundaries also represent the other OU2 and OU3 plumes described below.

GM38 Area Hotspot (OU2) - VOCs were located in the groundwater (between 300 to 500 feet bgs) approximately 1.6 miles southeast of the former NWIRP Bethpage. Groundwater from this hotspot is being treated by the GM38 Area Hotspot (OU2) Treatment System. Before the GM-38 Treatment System was installed in 2009, the hotspot encompassed an area of approximately 38 acres and contained a mixture of TCE, PCE, cis-1,2-dichloroethene (DCE), TCA, and DCA with concentrations ranging between 100 to 2,000  $\mu\text{g/L}$ . Since 2009, groundwater concentrations have decreased by over 80 percent, to less than  $176 \mu\text{g/L}$ . In the OU2 ROD, a hotspot is defined as an area of groundwater with VOC concentrations greater than  $1,000 \mu\text{g/L}$ .

Deep Western Plume (OU2) - VOCs are located in the groundwater (between 300 to 750 feet bgs) in the western portions of the former NWIRP Bethpage and Northrop Grumman properties and at the Hooker Ruco Superfund Site. The plume continues south of Hempstead Turnpike. Although this plume likely resulted from multiple sources, including some other than the former NWIRP Bethpage and Northrop Grumman properties, the location and depth of this plume appears to be influenced by the extensive historic pumping of on-property and off-property production and public water supply wells in this area. TCE is the primary VOC in this groundwater plume. Other VOCs are present, but at lower concentrations. VOC concentrations range from 50 to  $8,200 \mu\text{g/L}$ . North of Hempstead Turnpike, the vertical thickness of the plume is 100 to 200 feet and thins to the south.

- *RE108 Area Hotspot (OU2)* - In 2011, a potential hotspot was identified 1.5 miles south of the former NWIRP Bethpage. This hotspot is a subset of the Deep Western Plume (OU2). The hotspot is estimated to be approximately 195 acres and is present at a depth of approximately 520 to 720 feet bgs. This hotspot is predominantly TCE, with lower concentrations of other VOCs. VOC concentrations range between  $1,000$  to  $8,200 \mu\text{g/L}$ . A treatment system is currently being designed with the goal of treating to a discharge concentration of less than the drinking water standards.

Deep Eastern Plume (OU3) - VOCs are located in the groundwater (between 300 to 650 feet bgs) south and hydraulically downgradient of the Bethpage Community Park. The projected southern extent of the plume is near Hempstead Turnpike. This plume contains a mixture of primarily TCE and DCE, with concentrations ranging between 50 µg/L to over 13,200 µg/L.

- *RW21 Area Hotspot (OU3)* – The hotspot was identified in the 2013 NYSDEC Bethpage Community Park OU3 ROD as “presently located approximately 2,500 feet upgradient of and approaching the Bethpage Water District No. 4 well field.” It is a subset of Deep Eastern Plume (OU3). This hotspot contains a mixture of primarily TCE and DCE, with concentrations ranging from approximately 1,000 µg/L to over 13,200 µg/L and is present at a depth of approximately 550 to 750 feet bgs. The RW21 Area Hotspot (OU3) and the Deep Eastern Plume (OU3) are deeper than the GM38 Area Hotspot (OU2) groundwater in this area, and therefore flow under and separate from the GM38 Area Hotspot (OU2). Northrop Grumman is currently constructing the RW21 Area Hotspot Treatment System.

## **2.5 EVALUATION OF RADIUM, PFAS, AND 1,4-DIOXANE FOR PA/SIs**

The Navy has completed the sampling for on-property PA/SI investigations at the former NWIRP to determine whether some chemicals such as 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS), and radiological substances have potentially been released at the former NWIRP property and impacted groundwater quality. The evaluation includes the sampling of 58 on-property groundwater monitoring wells located at former NWIRP Bethpage. Three rounds of groundwater sampling were conducted in 2018 (April, September, and December) and two rounds of groundwater sampling were conducted in 2019 (March and June). The evaluation of potential release and migration of radium, PFAS, or 1,4-dioxane is ongoing.

### **2.5.1 Radium Results**

As a naturally occurring radioactive element that is generally present at low levels in all soil, water, and rock, radium is produced from the decay of two other common naturally occurring radioactive elements, uranium and thorium. During the development of the PA, a review of previous site operations was conducted. This review indicated that radium-based luminescent dials were used for aircraft instruments at the NWIRP but did not find evidence that radium was released at the property. To further evaluate potential release of radium, a groundwater investigation was conducted during the SI phase. For the SI, the groundwater data is compared to drinking water standards.

The results of the on-property groundwater sampling indicate that 94 percent of the unfiltered samples had radium concentrations less than 5 pico Curies per liter (pCi/L)<sup>1</sup>. A total of 16 individual samples in 8 wells

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<sup>1</sup> The U.S. EPA and State of New York have respectively established a maximum contaminant level (MCL) for radium, as measured by summing radium isotopes 226 and 228, in drinking water of 5 pCi/L. For a public water supply to exceed this standard, the running

exceeded 5 pCi/L with a maximum concentration of 9.5 pCi/L (MW04 in September 2018). In these same 8 wells, during other sampling events, 21 samples were less than 5 pCi/L. The overall average concentration of radium in 271 samples collected during the 5 sampling rounds is 1.8 pCi/L.

Based on a running annual average calculation consistent with an MCL determination, three of the wells had a radium concentration greater than the MCL (MW04, HN24I, and MW309D), with results ranging from 5.4 pCi/L to 6.1 pCi/L. One of the wells with the running average greater than the MCL (MW309D) is located near the northern upgradient edge of the NWIRP. The other two wells with running average greater than the MCL are in the west central portion of the property (near the western upgradient edge of the NWIRP) and in the central portion of the property. None of the wells with a running annual average greater than the MCL are in the downgradient edge of the property that would be representative of groundwater flowing off the property.

Radium results can vary significantly over time. For example, test results from groundwater in MW04 (with radium at 9.5 pCi/L in September 2018) found that the radium concentration had decreased to 4.5 pCi/L in December 2018, 0.95 pCi/L in March 2018, and 1.0 pCi/L in June 2019. This decrease in radium concentrations resulted in the running annual average for MW04 decreasing from 6.1 pCi/L in the April 2018 to March 2019 period to 4.0 pCi/L in the September 2018 to June 2019 period.

### **2.5.2 1,4-Dioxane Results**

1,4-Dioxane is a common additive to some chlorinated solvents similar to those found in the OU2 Plume. It is also used in many products, including paint strippers, dyes, greases, varnishes, and waxes. The U.S. EPA has not established a MCL for this compound in drinking water. The NYSDOH MCL for “unspecified organic contaminants” (UOC) is 50 µg/L. In 2019, the NYSDOH proposed an MCL for 1,4-dioxane of 1 µg/L, but no final regulatory action has been taken to establish this as an action level.

The results of on-property groundwater sampling indicate no results above the current NYSDOH MCL. A total of 11 wells had groundwater samples with results greater than the proposed MCL of 1 µg/L, with a maximum concentration of 8.7 µg/L.

The 1,4-dioxane has likely migrated off property with the groundwater. While the measured concentrations of 1,4-dioxane in some of the on-property groundwater exceed the USEPA regional screening level value of 0.46 µg/L established at a  $1 \times 10^{-6}$  incremental lifetime cancer risk, none of the results exceed the  $1 \times 10^{-4}$  incremental lifetime cancer risk. When test results are within this range, the Navy can make a risk management decision on how to proceed (40 CFR 300.430). The risk management decision will be further

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annual average value (typically from four quarterly sample events) must be greater than 5 pCi/L. Radium-based results discussed in this report are a sum of Radium-226 and Radium 228.

developed upon completion of the PA/SI process. In the event that NYSDOH or U.S.EPA establish an MCL for 1,4-dioxane, the Navy would consider additional action based on the groundwater results relative to the MCL.

### **2.5.3 PFAS Results**

PFAS compounds were first introduced into commercial and consumer products in the 1940s and have been used for many years to make products that resist heat, stains, grease, and water. PFAS compounds also have limited applications in some industrial processes similar to those used at NWIRP.

Based on plant records and interviews with plant personnel, it is unlikely that PFAS compounds were used at the NWIRP. Specifically, there is no evidence that PFAS-containing fire-suppression systems were present or training for fire fighting was conducted on the property. For the Department of Defense, these systems and activities are the most common sources of PFAS releases to the environment. While, there is no direct evidence that PFAS was used on-property, there were anodizing and alodining lines that could have used PFAS to control chromium fumes.

Two common PFAS compounds are PFOA (perfluorooctanoic acid) and PFOS (perfluorooctane sulfonic acid). The U.S. EPA has not established an MCL for PFAS in drinking water; however, it has established a drinking water lifetime health advisory (HA) for PFOA and PFOS. The HA specifies 70 parts per trillion (70 nanograms per liter [ng/L]) for PFOA and PFOS individually or the sum of PFOS and PFOA. Although the HA is not a regulatory action level, the Navy is using it as a benchmark for drinking water as opposed to the State's less stringent UOC MCL of 50 ug/L (50,000 ng/L).

In addition, in 2019 the Department of Defense issued policy for using the U.S.EPA Regional Screening Level calculator to establish screening values of 40 ng/L for PFOA and PFOS individually for groundwater. These values are based on a non-carcinogenic risk hazard index of 0.1. When hazard indices are less than 1, adverse effects are not anticipated. When PFOA or PFAS exceed 40 ng/L in groundwater, the Navy considers more action. In 2019, the NYSDOH proposed a drinking water MCL for PFOA and PFOS of 10 ng/L for each chemical, but no final regulatory action has been taken to establish this as an action level.

The results of the on-property groundwater sampling found 94 percent of the PFAS results are below the U.S. EPA HA and 89 percent of the PFAS results are less than the U.S. EPA Regional Screening Level. For PFOA, the maximum concentration was 157 ng/L and the maximum concentration of PFOS was 147 ng/L. Neither of these values exceed the upper bound for the non-carcinogenic risks using a hazard index of 1. These compounds were detected in groundwater samples collected from wells throughout the site, including those near the upgradient boundary of NWIRP indicating a presence in groundwater prior to reaching the site, as well as along the southern boundary of the NWIRP, indicating that PFAS compounds are migrating through and off-property.

#### **2.5.4 PA/SI Path Forward**

The Navy will prepare draft PA/SI reports for radium, PFAS, and 1,4 dioxane, which will be sent to NYSDEC for review. Analytical results from the testing have been shared with NYSDEC and the public as they have become available. The reports will include all groundwater sample data, the results of an updated review of past site operations and personnel interviews. Conclusions from evaluation of all data will determine if additional investigation or other response action is warranted. Upon finalization of the documents, they will be publicly available.

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### **3.0 GROUNDWATER PLUME STATUS**

This section describes the current and historical understanding of the off-property groundwater plumes and provides estimated migration rates. For discussion purposes, the regional groundwater system is separated into four depth-based intervals, as follows: (1) less than 300 feet bgs; (2) 300 to 500 feet bgs; (3) 500 to 700 feet bgs; and (4) greater than 700 feet bgs. These four depth intervals correspond to the predominant groundwater flow pathways and associated plume movements through the aquifer. These intervals cut through the Deep Eastern (OU2) and Deep Western (OU3) Plumes as described in Section 2.4.

The groundwater VOC concentrations are obtained from the vertical profile boring (VPB) and monitoring well water samples. These borings provided additional detail on VOCs in that area. The VPB program advances soil borings at strategic locations and collects groundwater samples for VOC laboratory analyses at specific intervals every 50 feet from the 50- to 200-foot depths and then every 20 feet below the 200-foot depth. This sampling provides a snapshot in time of the vertical profile of VOC concentrations from the water table down to over 1,000 feet bgs at an individual VPB. In 2019, three new on-property VPBs were installed along the western edge of the NWIRP to a depth of approximately 850 feet below ground surface and three off-property VPB were installed to the south and southwest of the NWIRP to a depth of approximately 900 feet below ground surface.

Based on the results from the VPB program, permanent monitoring wells are then installed at each location. The monitoring well screen depths are selected based on the location of permeable flow zones, and the current or potential future presence of VOCs within those flow zones. Although more limited in vertical coverage, the routine collection of groundwater samples from monitoring wells provide reproducible data that can be tracked over time. In 2019, eight new monitoring wells were installed along the western edge of the NWIRP and two new monitoring wells were installed south of the NWIRP to variable depths. In 2019, a total of approximately 200 groundwater monitoring wells were sampled and analyzed for VOCs on a quarterly, semiannual, or annual basis. Additional details of the VPB and monitoring well program are described in Section 5.2.

TCE is the primary VOC in the off-property groundwater sourced from the former NWIRP property. However, there are some areas of VOC-impacted (e.g., benzene, and methyl tert butyl ether) groundwater where TCE and its associated byproducts are not present. Benzene and methyl tert butyl ether are associated with gasoline spills. As a result, these plumes are not likely to be associated with the former NWIRP Bethpage or Northrop Grumman properties and the source of these other VOCs and associated plumes is uncertain.

#### **3.1 CURRENT CONDITIONS**

The current estimates of the boundaries of TCE-impacted groundwater (TCE greater than the MCL of 5 µg/L) potentially associated with the former NWIRP Bethpage and Northrop Grumman properties are

presented in Figures 3-1 through 3-4, for the depth intervals of 0 to 300 feet bgs, 300 to 500 feet bgs, 500 to 700 feet bgs, and greater than 700 feet bgs, respectively. The development of these isoconcentration contour lines is based on analytical results and groundwater flow. In developing these lines, data from samples collected most recently (2019) from permanent monitoring wells is given the greatest weight. Also, the highest concentration from each year is used. Data from previous years and VPBs are used to supplement recent groundwater results.

Public water supply extraction wells are also shown on figures where the depth of the extraction well screen (i.e., groundwater intake point) coincides with the appropriate depth interval. For example, Bethpage Water District (BWD) well BWD-6-1 (BWD-3876) with a screened depth of 328 to 381 feet is shown on Figure 3-2 (300 to 500 feet bgs interval). For locations with multiple results within a depth interval, the groundwater results discussed below represent the highest concentration measured in that depth interval. For most of the locations and depth intervals, the vertical extent of the contamination is found in only a portion of the depth interval (e.g., the plume may only be 20 to 50 feet thick in a depth interval of 200 feet). More detailed location- and depth-data are provided in Appendix A of this 2020 Annual Report, as well as in the 2017, 2018 and 2019 Annual Reports.

Except as noted below, the current TCE isoconcentration contour lines presented in Figures 3-1 to 3-4 are similar to those in the 2019 Annual Report. For each of the four depth intervals in the 2001 to 2017 graphics, the northern boundaries of these plumes were depicted with open isoconcentration contours, indicating uncertainty with the exact origin or current extent of the plumes. This uncertainty was based primarily on the absence of definitive data in the area. Starting in 2018, these contours are shown as being closed. This change results from the development of new graphics for presenting the relevant data, but interpretation of the northern boundaries of these plumes remains the same.

The following sections describe the current distribution of VOCs in groundwater, primarily TCE, at four depth intervals, each of which encompasses multiple plumes and/or hotspots.

**Shallow VOC-Impacted Groundwater, 0 to 300 Feet bgs (Figure 3-1):** The shallow OU2 plume is shown as being separated between the on-property and off-property areas due to the operation of the Northrop Grumman OU2 ONCTs located at the southern edge of the Northrop Grumman property. The western edge of the shallow VOC-impacted groundwater is shown in Figure 3-1 as originating near the western edge of the former Northrop Grumman property and extending 3.3 miles to the south-southeast. The eastern edge of the shallow VOC-impacted groundwater originates near the Bethpage Community Park and extends 3.6 miles to the southeast and south-southeast. Although illustrated as one overall area of contamination, the shallow plume is actually a series of individual shallow plumes that are separated horizontally and vertically from each other due to the release point, date, migration, and vertical gradients (see Figure 2-1). Within some of these areas, the concentration ratio of some compounds such as cis-1,2-dichloroethene (more typical of OU3) or tetrachloroethene (more typical of dry cleaner releases) to TCE allow a relatively direct correlation to be made between VOC-impacted groundwater at that location to its

source. However, within some areas where the VOC signature is not unique, it is more difficult to accurately identify the likely source of the contamination (i.e., OU2, OU3, or another source) with the available data. For those areas, a more detailed investigation is needed that may involve more groundwater data and groundwater flow modeling.

In addition, the VOCs in these plumes can vary by chemical characteristics of the original source (e.g., TCE versus PCE) and aquifer conditions (other organics that may result in the formation of degradation products such as DCE). Also, because of the operation of groundwater extraction and treatment systems and the discharge of treated water back into the shallow aquifer resulting in flushing of the aquifer, there are likely large portions of the water in the shallow aquifer that are compliant with Federal and State Drinking Water Standards that are not depicted on Figure 3-1. The interpreted, irregular shape of the southern portion of the footprint of the VOC Shallow Plumes likely result from it coming from a combination of sources (including OU2, OU3, and other sources) over time, variable migration rates, localized pumping, and attenuation within the aquifer.

In much of the shallow zone in the southern-most portion of the investigation area near Southern State Parkway, groundwater data from several VPBs demonstrated that TCE was either not present or was present at concentrations less than Federal or State Drinking Water Standards (i.e., MCLs). This data allowed the southern border of the Shallow Plume to be more precisely delineated.

Based on data from groundwater investigations conducted in 2019, the 2019 shallow plume configuration is similar to that presented in 2019 Annual Report (based on 2018 data), and several modifications have been made to the 2020 Annual Report plume delineations presented in Figure 3-1 and discussed below.

In the area south of the Hooker Ruco Site, the 100 to 1,000 µg/L isoconcentration contour area was removed due to updated screened intervals for monitoring wells (previously reported screen depths were inaccurate). While some older VPB data remain from this area, the older data have been replaced with data from newer monitoring wells. In addition, using newly collected VPB data in the area (VPB176), the 5 to 100 µg/L isoconcentration contour area was bumped out to the west and south. Based on groundwater flow direction in the area, this bump is likely not associated with OU2, but rather it is more likely associated with another source of VOCs to the north and west of the NWIRP. The 100 to 1,000 µg/L plume area illustration in the vicinity of Hempstead Turnpike was confirmed based on results from monitoring well RE132D1.

**Intermediate-Depth VOC-Impacted Groundwater, 300 to 500 Feet bgs (Figure 3-2):** The spatial distribution for TCE in this depth interval is less extensive than for the shallower depth interval described above. While the western and eastern TCE boundaries are similar to those of the shallower zone, the southern extent of the TCE detections is less extensive. TCE data from approximately 220 samples in 22 VPBs were either not detected or were less than 5 µg/L. Data from new monitoring wells and VPBs on the northern edge of the NWIRP extend the 5 to 100 µg/L isoconcentration contour area to the north. The

presence of the TCE at the northern edge of the property in relatively deep groundwater provides evidence of a non-NWIRP source of this contamination.

The areal extent of TCE concentrations greater than 100 µg/L to 1,000 µg/L and greater than 1,000 µg/L are more extensive than those identified in the shallower depth interval. An area of elevated TCE concentrations in groundwater is present in the southwestern portion of the plume in this depth interval. Also, along the western boundary, there are TCE impacts in groundwater (greater than 5 µg/L) beyond the inferred northwestern boundary of the OU2 Plume (based on groundwater flow direction and strategically-placed monitoring wells and vertical profile borings demonstrating chemical profile shifts) suggests that other (non-Northrop Grumman or non-NWIRP Bethpage) sources may be impacting the plume.

In 2017, the northwestern boundary of the plume was depicted with open isoconcentration contours, whereas in 2018 and 2019, these contours are shown as being closed. This revised depiction was used to improve graphics and does not change the likelihood that some or all of the VOCs along the western and northwestern edge of the plume may originate from another source. The source of this other contamination remains uncertain. As illustrated in Figure 1-3, there are several dry cleaners and other properties that use solvents that could be the source of or among the contributors to the TCE contamination in this area.

The zone of residual TCE-impacted groundwater associated with the GM38 Area Hotspot (OU2) (greater than 100 µg/L contour area) depicted in Figure 3-2 remains vertically separate from the lower Deep Eastern Plume (OU3). Since 2009, the TCE concentrations in the GM38 Area Hotspot (OU2) have been significantly reduced through the operation of the associated extraction, treatment, and discharge system.

**Upper Deep VOC-Impacted Groundwater, 500 to 700 Feet bgs (Figure 3-3):** The spatial distribution for TCE in this depth interval is less extensive than for the shallower zones described above and the difference between the Deep Western (OU2) and the Deep Eastern (OU3) Plumes is more defined. This depth interval is estimated to contain the majority of contaminant mass in both the Deep Western (OU2) and the Deep Eastern (OU3) Plumes. Based on 2019 groundwater data and new data from monitoring wells and VPBs, the depicted boundary of the 100 to 1,000 µg/L TCE plume area has expanded westward and southward. This expansion is primarily a result of new data points collected in the area, but as discussed in Section 3.2 and based on groundwater flow, it also provides evidence of additional VOC sources from the north and west contributing to the OU2 footprint.

The Deep Western (OU2) Plume, depicted in Figure 3-3, extends further south than the intermediate-depth zone described above, to a distance of approximately one mile south of Hempstead Turnpike. Additional evaluation of the migration of VOCs in this area is provided in Section 3.2. There is also evidence of a relatively pure Freon-113 plume along and under the western edge of the Deep Western Plume (OU2) that does not appear to be associated with the former NWIRP Bethpage or Northrop Grumman properties. In this Freon-113 plume, TCE and other chlorinated VOCs are present in minor amounts relative to the Freon-113 (less than 20%). This other plume is evidenced by Freon-113 found in BPOW4-2R (18.8 µg/L), RE131D3 (300 µg/L), RE134D4 (180 µg/L) that is running parallel to the OU2 plume and the source(s) for

which appear(s) to be shallower plumes further north and west of the former NWIRP Bethpage and Northrop Grumman properties (Appendix A and the 2019 Annual Report). The plumes associated with the former NWIRP Bethpage and Northrop Grumman properties have TCE as the primary component of the total VOCs present, whereas Freon-113 is only a minor component. Investigations conducted in 2019 including VPB176 and sampling data from monitoring well clusters RE134, RE131, and RE124 provided information to further support the estimated western edge of the Deep Western Plume.

The RE108 Area Hotspot (OU2) (a subset of the Deep Western Plume) and the RW21 Area Hotspot (OU3) (a subset of the Deep Eastern Plume) depicted in Figure 3-2 also extend to this depth interval. The TCE concentrations in the RE108 Area Hotspot (OU2) range from 1,000 to 8,200 µg/L and the TCE concentrations in the RW21 Area Hotspot (OU3) range from 1,000 to 13,200 µg/L.

**Lower Deep VOC-Impacted Groundwater, Greater than 700 Feet bgs (Figure 3-4):** The spatial distribution for TCE in this depth interval generally follows the footprint of the 500 to 700 feet bgs depth interval (see Figure 3-3); however, the TCE concentrations in this zone are present at a maximum concentration of 2,000 µg/L, which is less than the concentration in the 500 to 700 feet bgs depth interval. For the Deep Western Plume (OU2), the presence of TCE at concentrations greater than 1,000 µg/L continues to be influenced by the operation of a nearby public water supply well (BWD Well 6-2, screened from 700 to 770 feet bgs) pulling groundwater from the 500 to 700 feet bgs depth interval downward and eastward. Based on 2019 groundwater data, the extent of the plume greater than 100 to 1,000 µg/L in concentration shifted southward. This shift is primarily a result of new data points collected in the area, but as discussed in Section 3.2, it also likely results from plume migration in the area. For the Deep Eastern Plume (OU3), there were a few TCE MCL exceedances noted below 700 feet bgs.

### **3.2 MAPPING OF VOC PLUMES OVER TIME**

Since 2001, characterization and definition of the OU2 Northrop Grumman and NWIRP Bethpage and OU3 Northrop Grumman/Bethpage Community Park plumes has developed and evolved significantly based on data collected from new VPBs and groundwater monitoring wells installed during this time period. While migration of TCE-impacted groundwater to the south would be expected during this time period, pumping and natural attenuation processes that decrease concentrations would also occur.

Figures 3-5 through 3-8 depict temporal mapping of TCE in groundwater for the four depth intervals of: less than 300 feet bgs (Figure 3-5); 300 to 500 feet bgs (Figure 3-6); 500 to 700 feet bgs (Figure 3-7); and greater than 700 feet bgs (Figure 3-8). Each of the figures identifies the TCE plumes for the years 2001, 2006, 2011, and 2019. The TCE contour lines were developed using available groundwater data for those years. Additional details for each of the maps for TCE are presented in Appendix B and data for the other VOCs are presented in Appendix A of this 2020 Annual Report, as well as the 2017, 2018 and 2019 Annual Reports.

Major changes to the TCE plumes for the four depth intervals from 2001 through 2019 are discussed below. As discussed in Section 3.1, the northern boundaries of the plumes were previously depicted with open

isoconcentration contours, indicating uncertainty with the exact origin or current extent of the plumes. This uncertainty was based primarily on the absence of data in the area. In 2018 and 2019 these contours are shown as being closed. This change results from the development of better graphics for presenting the relevant data, but interpretation of the northern boundaries of these plumes remains the same.

**Shallow VOC-Impacted Groundwater, 0 to 300 Feet bgs (Figure 3-5):** With the exception of the groundwater south of the Bethpage Community Park (OU3) and the GM38 Area Hotspot (OU2), the extent of the shallow TCE-impacted plume exhibits relatively minor variations in the boundaries over time as depicted in Figure 3-5. These variations result primarily from inclusion of new data and refinement of the edges. In 2001, the shallow TCE-impacted plume was depicted as extending south of Hempstead Turnpike; and there were two isolated areas of higher TCE concentrations (TCE greater than 100 or 1,000 µg/L), one near Hempstead Turnpike and one associated with the GM38 Area Hotspot (OU2).

Between 2001 and 2006, several VPBs were installed south of the Bethpage Community Park that identified TCE (and other VOCs) at concentrations greater than 100 and 1,000 µg/L in that area. Between 2006 and 2019, additional investigations south of the Bethpage Community Park were used to refine the boundaries of the greater than 100 to 1,000 µg/L and the greater than 1,000 µg/L areas. In addition, TCE in groundwater samples collected from a monitoring well south of the Bethpage Community Park was less than 1,000 µg/L, and the corresponding shaded area for TCE greater than 1,000 µg/L was removed. This reduction is likely associated with the operation of the Bethpage Community Park groundwater containment system (OU3).

The GM38 Area Hotspot (OU2) (TCE greater 1,000 µg/L) is shown on both the 2001 and 2006 maps. As a result of the startup of the GM38 Area Hotspot (OU2) Treatment System in 2009, the groundwater concentrations in this area are less than 100 µg/L in 2011 and 2019.

The southernmost plume boundaries depicted for 2001 and 2006 are nearly equivalent because limited new data was available (one new well was added in that area during this time). Between 2006 and 2011, additional VPBs were installed in the southern portion of the plume area, confirming the absence or low (less than MCL) concentrations of TCE.

By 2019, results from several VPBs in this area refined the southern extent of the plume boundary, indicating the presence of two distinct lobes. Also, the shallow groundwater south of the Northrop Grumman ONCT and north of Hempstead Turnpike was reevaluated. The 5 to 100 µg/L plume illustration south of the former Northrop Grumman property and north of Hempstead Turnpike was modified to reflect an area in which the TCE concentration is less than the MCL of 5 µg/L and which is anticipated to similarly benefit from long-term discharge of MCL-compliant water into the shallow aquifer from the OU2 ONCT.

**Intermediate-Depth VOC-Impacted Groundwater, 300 to 500 Feet bgs (Figure 3-6):** With the exception of the Deep Eastern Plume (OU3) and the GM38 Area Hotspot (OU2), the variations in the plume boundaries over time and depicted in Figure 3-6 result primarily from data that was collected over time. In

2001, the TCE groundwater plume is depicted as extending south of Hempstead Turnpike; and there were three isolated areas of higher TCE concentrations near: Hempstead Turnpike, the GM38 Area Hotspot (OU2), and BWD Plant 6.

Between 2001 and 2006, several VPBs were installed south of the Bethpage Community Park that identified TCE (and other VOCs) greater than 100 to 1,000 µg/L and the greater than 1,000 µg/L areas in the Deep Eastern Plume (OU3). Between 2006 and 2019, the boundaries of the greater than 100 to 1,000 µg/L and the greater than 1,000 µg/L areas south of the Bethpage Community Park were better defined.

The GM38 Area Hotspot (OU2) (greater 1,000 µg/L area) is shown on both the 2001 and 2006 maps. As a result of the startup of the GM38 Area Hotspot (OU2) Treatment System in 2009, the corresponding greater than 1,000 µg/L area contour line in that area is no longer present by 2011. By 2019, the greater than 100 to 1,000 µg/L area remains, but the TCE and other VOC concentrations in the area continue to decrease. In 2019, the maximum groundwater TCE concentration in this area was 176 µg/L.

Before 2006, there was only limited data to support the delineation of the Deep Western Plume (OU2) for this depth interval. Between 2001 and 2006, one well in this area had a TCE concentration greater than 1,000 µg/L (the basis for the greater than TCE 1,000 µg/L area), but concentrations quickly decreased to less than 1,000 µg/L by December 2003. The extent of the Deep Western Plume (OU2) was then identified and refined through subsequent investigations in the area. Also, investigations along the western boundary indicate that the Deep Western Plume (OU2) may result from multiple sources, including some not associated with former NWIRP Bethpage and Northrop Grumman properties.

Between 2001 and 2006, four monitoring wells were present in the southern portion of the plume areas. The 2006 TCE concentrations for the four wells ranged up to 1.4 µg/L and were similar to TCE concentrations in nearby VPBs (up to 2 µg/L) (Appendix B). Between 2006 and 2019, additional VPBs were installed in the southern portion of the plume areas, confirming the absence or low-level concentrations of TCE (Appendix B).

**Upper Deep VOC-Impacted Groundwater, 500 to 700 Feet bgs (Figure 3-7):** In 2001, the western portion of the TCE groundwater plume is depicted in Figure 3-7 as extending south of Hempstead Turnpike (Deep Western Plume [OU2]). There was also one isolated area of higher TCE concentrations, extending from near the southwestern corner of the former Northrop Grumman property south toward Hempstead Turnpike.

Between 2001 and 2006, two new wells were installed and sampled in the south of the Deep Western Plume (OU2). The 2006 results from the two wells reported an absence of TCE and confirmed the results of nearby VPBs (an absence of TCE) (Appendix B). Between 2006 and 2019, additional VPBs and wells were sampled throughout this plume. Subsequent investigations found higher concentrations of TCE in a portion of the Deep Western Plume (OU2) which was identified as the RE108 Area Hotspot (OU2) (depicted in the 2019 map in Figure 3-7).

Even though individual wells have TCE concentrations increasing slightly or remaining the same, in the longer term, the overall TCE concentration trend in groundwater near the northern portion of the Deep Western Plume appears to be decreasing (Graph 3-1). TCE concentrations for groundwater samples from monitoring well GM75D2 (screened depth of 505 to 525 feet bgs) have decreased from 40 µg/L in 2013 to 17 µg/L in 2019. In 2003, groundwater samples from this well were measured to contain over 1,000 µg/L of TCE. TCE concentrations for groundwater samples from monitoring well RE105D1 (screened depth of 530 to 550 feet bgs) have also decreased from approximately 160 µg/L in 2013 to a low of 80 µg/L in 2019. The decrease in TCE concentrations in this area is likely attributable to the operation of OU2 ONCT Treatment System.

TCE concentrations in groundwater in the central portion of the Deep Western Plume appear to be decreasing slightly (Graph 3-2). TCE concentrations for groundwater samples from monitoring wells RE122D2 (screened depth of 590 to 610 feet bgs) and RE108D2 (screened depth of 630 to 650 feet bgs) in the north central portion of the Deep Western Plume appear to decline from approximately 4,600 µg/L in 2015 and 3,400 µg/L in 2014 to approximately 2,300 µg/L in 2019, respectively. TCE concentrations for groundwater samples from other central portion monitoring wells, such as RE120D1 (screened depth of 630 to 650 feet bgs) and RE103D1 (screened depth of 620 to 640 feet bgs) also show decreases, from approximately 1,300 µg/L and 1,000 µg/L in 2014 to approximately 770 µg/L and 630 µg/L in 2014 respectively. This downward trend likely results from the source of the TCE to this area being cut off by the Northrop Grumman OU2 ONCT system and southward migration of the plume.

TCE concentrations in groundwater in the southern portion of the Deep Western Plume appear to be increasing (Graph 3-3). TCE concentrations for groundwater samples from monitoring well BPOW 3-4 (screen depth of 640 to 690 feet bgs) have increased from approximately 50 µg/L in 2013 to 156 µg/L in 2019. These trends indicate that the Deep Western Plume (OU2) Plume is migrating southward in this area. As discussed in Section 4.1, the two water supply plants located in proximity to this monitoring well are equipped with treatment to remove VOCs. In addition, planned groundwater response activities north of this monitoring well are expected to further mitigate the plume migration.

As of 2006, there was limited evidence regarding the Deep Eastern Plume (OU3) at this interval depth. Between 2006 and 2019, supplemental investigations in the Deep Eastern Plume (OU3) identified and then refined the RW21 Area Hotspot (OU3) boundaries. There is currently limited groundwater monitoring data available to the Navy to monitor the migration of the Deep Eastern Plume (OU3).

**Lower Deep VOC-Impacted Groundwater, Greater than 700 Feet bgs (Figure 3-8):** In 2001, the TCE groundwater plume in this depth interval is depicted in Figure 3-8 as a relatively small area near Hempstead Turnpike that was derived from one TCE result of 120 µg/L and another TCE result of 2 µg/L. Additional data collected through 2019 resulted in expansion of the areal extent of TCE in this deep zone, and also identified the presence of more contaminated groundwater (TCE greater than 1,000 µg/L) in the area south of BWD Plant 6. This more contaminated groundwater is referred to as the RE108 Area Hotspot (OU2).

TCE concentration trends in groundwater within this depth interval are variable, with evidence of decreasing levels in the central and northern portion of the plume and increasing levels in the southern portion of the plume.

As evidenced by TCE concentrations in groundwater samples from monitoring well RE103D3 (screen depth of 715 to 730 feet bgs) and RE120D2 (screen depth of 690 to 710 feet bgs) located near the center of the RE108 Area Hotspot, VOC concentrations in this area have decreased over the past five years (Graph 3-4). Whereas other wells in this area are stable (Graph 3-2). TCE concentrations for groundwater samples from monitoring wells RE105D2 (screened depth of 730 to 750 feet bgs) vary from 620 to 1,700 µg/L in 2014 to 1,400 to 2,000 µg/L in 2019.

For wells located in the southern portion of the plume, VOC concentrations appear to be increasing. (Graph 3-4). VOC concentrations in groundwater samples from monitoring wells TT101D2 (screen depth of 740 to 760 feet bgs) and RE115D2 (screened depth of 730 to 750 feet bgs) appear to be increasing (Graph 3-4). Also, TCE concentrations have increased from approximately 460 µg/L in 2013 to approximately 1,100 µg/L in 2019 in monitoring well TT101D2, and from approximately 230 µg/L in 2017 to approximately 610 µg/L in 2019 in monitoring well RE115D2. These trends provide evidence that the deepest portion of the RE108 Area Hotspot is migrating southward. As discussed in Section 5.2, the Navy is installing a Hotspot Treatment System south of monitoring well TT101D2 to intercept this groundwater.

In 2015, the Navy installed several monitoring wells near the Southern State Parkway. Most of the wells are used as outpost locations to provide advance notice for water supply wells in the area. While the outpost wells remain free of site-specific VOCs, one monitoring well (RE117D1 screened depth of 730 to 755 feet bgs) installed near the Southern State Parkway has TCE concentrations greater than the MCLs measured in several associated groundwater samples. Since 2015, TCE concentrations have ranged from approximately 8 to 78.4 µg/L, with a general trend of increasing concentrations (Graph 3-3). In 2019 Annual Report, based on the results from RE117D1 and VPB173 located north of RE117D1, the OU2 Deep Western Plume is now interpreted to be connected throughout this area.

### **3.3 VOC PLUME MIGRATION RATES**

Groundwater and the associated VOC plume migration rates are estimated using hydrogeological data collected from Northrop Grumman and NWIRP Bethpage wells and values of aquifer hydraulic conductivities from recent field studies. Calculated plume migration rates may vary from the groundwater flow rates due to non-uniform flow pathways, dilution, area-wide pumping by supply wells, and targeted VOC mass removal from groundwater by remedial wells. In 2019, the Navy continued its evaluation of groundwater flow. This evaluation is summarized below and more detail is provided in Appendix C.

Five comprehensive rounds of groundwater level measurements were performed during 2019. The rounds were collected in March, April, May, July, and December 2019. In addition, data loggers that provide near continuous readings were installed and operated in several of the monitoring wells south of Hempstead Turnpike.

The water levels were converted to elevation and plotted on regional maps to develop groundwater potentiometric contour maps. Using these data, groundwater elevation contour maps were developed for two subsurface depth intervals of 500 to 700 feet bgs and greater than 700 feet bgs. Potentiometric contour maps are used to estimate flow direction and calculate groundwater flow rates. These two depth intervals represent the location of the majority of the VOC plumes and the local public water supplies.

The migration of VOCs in groundwater is dependent on several factors. On a microscopic scale, groundwater (and groundwater contaminants) moves through open pore spaces in saturated aquifer sediments comprising gravel, sand, silt, and clay in response to elevation and/or pressure-head differences (i.e., hydraulic gradients) between two locations. Over large areas, the “average linear velocity” provides an estimate of how long it would take groundwater (and a non-reactive chemical) to move in an aquifer. Average linear velocity is computed using hydraulic conductivity (a property of the formation), hydraulic gradient (determined from a groundwater contour map), and effective porosity (i.e., void space).

Representative hydraulic gradients for the area south of Hempstead Turnpike based on 2019 data are presented in Figures 3-9 through 3-16. Figures 3-9 through 3-12 are based on the May 2019 measurements and Figures 3-13 through 3-16 are based on the July 2019 measurements. The May 2019 measurements represent a period of low to moderate levels of groundwater extraction by public water suppliers in the area, whereas the July 2019 measurements represent a period of high levels of groundwater extraction by the public water suppliers in the area. The results indicate that groundwater flow rates and directions can vary locally based on depth within the aquifer and location relative to pumping water wells. Overall, groundwater flow is to the south-southeast near Hempstead Turnpike and then appears to shift to the south and then to the south-southwest near Southern State Parkway. Deflections are likely in response to pumping at a local water supply well.

Evaluation of groundwater level measurements provides valuable regional groundwater flow data and support groundwater flow rates. However, this evaluation is complicated because the manual groundwater level measurements are not truly synoptic (taken exactly at the same time). In addition, operation of public water supply wells in the area vary throughout the day. As a result, measurements for some monitoring wells may represent “water supply pump off” conditions (high water), while the elevations in other monitoring wells may represent “water supply pump on” conditions and be lower. Consequently, supplemental investigations are conducted using continuous (one reading every five minutes) in-well data logger. The use of the data loggers was initiated in 2012 and is continuing to be expanded as new monitoring wells are installed. Preliminary findings are discussed below.

Several maps were constructed to interpret the effects of groundwater withdrawal on both the regional and local groundwater flow directions and patterns (Appendix C). Data from 2015 to 2019 used to construct these maps were obtained either during the five rounds of manual groundwater measurements, or as recorded by the data logger placed in selected wells.

Figure 3-17 was developed based on the regional groundwater flow maps and illustrates the seasonal change in groundwater levels in the area south of Hempstead Turnpike. This map was constructed by contouring the drawdown (or difference) in groundwater elevations measured during the May 2019 round and the October 2019 round. The drawdown is an indication of the local effects of pumping from water supply wells on groundwater flow on an annual basis.

The major feature on the resulting map (Figure 3-17) is a regional groundwater sink, or an area of more significant drawdown. This sink is interpreted to primarily represent a zone of groundwater capture or influence. Groundwater will either naturally flow or be drawn into or toward this sink. The sink in the map results from the combined pumping of the South Farmingdale Water District (SFWD) Well 3-1, 6-1, and 6-2 and New York American Water (NYAW) Well Nos. 3A and 4S. Based on the magnitude of the pumping by the water supply wells, some or all of the groundwater contamination will be removed from the aquifer. Water that is not removed from the aquifer will continue to flow south, but in an altered flow path. Note that the groundwater sink depicted in Figure 3-17 is one of seasonal variation in the groundwater potentiometric surface. This sink is not indicative of groundwater plumes that are shown on other figures.

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## **4.0 CURRENT AND FUTURE IMPACTS TO DRINKING WATER FACILITIES**

This section discusses well fields currently impacted or that may be impacted by VOCs associated with the former Northrop Grumman and NWIRP Bethpage properties. This section also identifies those well fields with treatment systems in place to remove the VOCs migrating or potentially migrating from the former Northrop Grumman and NWIRP Bethpage properties.

Figure 4-1 shows the former Northrop Grumman and NWIRP Bethpage properties, the 2019 estimated extent of VOC groundwater plumes potentially associated with those properties, and nearby public water supply well fields. The light blue east-west line north of the former Northrop Grumman and NWIRP Bethpage properties represents the regional Long Island groundwater divide, groundwater north of this line flows northward toward Long Island Sound and groundwater south of this line flows southward towards South Oyster Bay and ultimately the Atlantic Ocean (Como, et al., 2015). As shown on Figure 4-1, the former Northrop Grumman and NWIRP Bethpage properties are south of the line, so groundwater flow is to the south; therefore, only well fields south of the groundwater divide are relevant to discussions in this section.

Shown on Figure 4-1 are public water-supply well fields with VOC treatment systems (red or yellow stars), and other public water-supply well fields south and potentially hydraulically downgradient of the former Northrop Grumman and NWIRP Bethpage VOC plumes that do not have treatment (green triangles) and are near or within the potential groundwater flow path (red dashed line). Locations represented by the green triangles are well fields that might be affected if VOC-impacted groundwater were to travel from the former Northrop Grumman and NWIRP Bethpage properties without significant attenuation, at the depth of the extraction well screen. For wells without treatment that are in close proximity to the plume, there are outpost monitoring wells in place to provide early notice of potential impact. Because of attenuation, horizontal and vertical limits on capture zones, it is unlikely that all of these well fields would be impacted by former Northrop Grumman and NWIRP Bethpage VOC plumes. The area depicted within the red dashed lines near South Oyster Bay is widened to reflect uncertainty with the groundwater flow path in that area.

### **4.1 CURRENT IMPACTS**

Due to current or projected (i.e., by use of outpost wells) VOC impacts to the groundwater, as discussed more fully below, wellhead treatment systems have been placed at certain public water supply well fields operated by BWD, SFWD, and NYAW to ensure that MCL-compliant water (i.e., water that meets or exceeds Federal and State drinking water quality standards) is provided to their customers. In addition, quarterly or semi-annual groundwater monitoring of wells is conducted to evaluate whether or not additional upgrades or new treatment would be required. These public water supply wells have been providing safe, MCL-compliant water for over 25 years.

### **Bethpage Water District**

Between 1990 and 1996, the United States and Northrop Grumman funded treatment systems that were installed at the three impacted well fields operated by the BWD Plants 4, 5, and 6 (Figure 1-2, BWD Well Nos. 4-1, 4-2, 5-1, 6-1, and 6-2). At Plant 4, due to increasing concentrations of VOCs associated with the Deep Eastern Plume (OU3), BWD implemented an upgrade of the treatment system in 2010. At Plant 5, the treatment system is continuing to effectively treat the VOCs in groundwater. BWD recently added liquid-phase granular activated carbon (GAC) polishing. At Plant 6, due to increasing VOC concentrations, BWD installed liquid-phase GAC polishing in 2011, the cost of which the United States reimbursed. BWD is also in the process of constructing another upgrade of the treatment system for Plant 6, for which the United States has provided advanced and ongoing funding. In 2019, during construction of the BWD Plant 6 upgrade, BWD used Advanced Oxidation Process treatment for removal of VOCs prior to polishing using GAC treatment and distribution.

### **South Farmingdale Water District**

Pursuant to an agreement with SFWD in 2011, based on the measurement of low-level VOCs in outpost monitoring wells, the United States funded SFWD's design, construction, operation, and maintenance of a VOC treatment system for two of the three wells at Plant 1 (Figure 1-2, SFWD Well Nos. 1-2 and 1-3). In order to provide advance warning of potential contamination at the third (deeper) well, in 2008, the Navy installed additional outpost wells to monitor the quality of the water before it reaches the capture zone of the third well.

Pursuant to an agreement with SFWD in 2013, based on the measurement of VOCs in outpost monitoring wells, the United States funded SFWD's design, construction, operation, and maintenance of a VOC treatment system at Plant 3 (Figure 1-2, SFWD Well No. 3-1).

### **New York American Water (formerly AQUA New York)**

As a result of increasing concentrations of low-level (less than MCL) TCE in wells at the NYAW (formerly AQUA New York) supply wells located at the Seaman's Neck Road Facility, the Navy constructed VOC treatment using GAC for an interim system in 2012 and completed the permanent system in 2015 (Figure 1-2, NYAW Nos. 3A and 4S). The Navy funds ongoing costs associated with the operation of the VOC treatment.

## **4.2 POSSIBLE FUTURE IMPACTS**

In the area of the former Northrop Grumman and NWIRP Bethpage properties, and other nearby properties that may also be contributing to the VOC-impacted plumes, groundwater regionally flows to the south and southeast. As a result, possible future impacts would be limited to those areas. The current TCE plume boundaries are presented in Figures 3-1 to 3-4. There are other plumes adjacent to and/or within the footprint of the OU2 Plume that have sources other than former NWIRP Bethpage and Northrop Grumman properties. Hooker Ruco (a Superfund Site) and some local dry cleaners and gasoline stations (Figure 1-

3) are likely contributing to the footprint of the OU2 Plume or are in such close proximity to the OU2 Plume as to be potentially confused with the OU2 Plume.

The following discussion focuses on a portion of the Deep Western Plume that is located generally south of Hempstead Turnpike, as current impacts to water supply wells located north of this area are addressed in Section 4.1. This discussion focuses on the 500 to 700 feet bgs and the greater than 700 feet bgs depth intervals, because these deeper intervals correspond to location of the VOC plume and public water supply wells.

The public water supplies that are currently not impacted by the former Northrop Grumman and NWIRP Bethpage groundwater plumes but are relatively closer to the downgradient edge of the plume, are SFWD Well 1-4 and SFWD Well Nos. 6-1 and 6-2 (Figure 1-2). These wells do not currently have treatment systems in place, but outpost monitoring wells were installed to provide early indication of whether and when treatment might be necessary for each of these well fields (Figures 3-2 to 3-4). The outpost monitoring wells are placed at depths associated with the public water supply wells and are located between the plumes and the public water supply wells such that site-related VOCs would have to flow through outpost monitoring wells several years prior to entering the public water supply wells. The advance notice of VOCs will provide early warning that an action is needed.

As the various groundwater plumes move to the south and southeast, they are undergoing dilution and are affected by pumping and the VOC mass removal systems that reduce the concentrations. In addition, portions of the plumes are being intercepted by water supply wells with treatment that would further hinder migration. Each of these actions reduces the intensity of the concentration of contaminants in the plumes. The result is that water districts and many of the water supply wells further south may never be impacted, or if they might be impacted decades from now, there will be sufficient time to install additional outpost monitoring wells to prevent potential drinking water impacts from the plumes.

The effects on groundwater flow rates and directions caused by the pumping of the water supply wells located south of Hempstead Turnpike are presented and discussed in Section 3.0. Figure 3-17 depicts the groundwater sink identified south of Hempstead Turnpike based on field measurements.

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## **5.0 COMPREHENSIVE STRATEGY FOR OFFSITE GROUNDWATER**

### **5.1 OVERVIEW AND REMEDIAL ACTION OBJECTIVES**

There are several RODs that address groundwater impacted by VOCs beneath both former NWIRP Bethpage and Northrop Grumman properties and also address groundwater impacted by VOCs that migrated beyond both properties into the surrounding community. In 2001, NYSDEC issued its OU2 ROD to select a groundwater remedy and set forth a public water supply protection program.

Under its CERCLA and DERP authority, the Navy evaluated and adopted significant portions of the NYSDEC OU2 2001 ROD that would be implemented by the Navy in its federal cleanup program. Other portions are being implemented by Northrop Grumman (e.g., ONCT and groundwater monitoring). The Navy OU2 CERCLA ROD (2003) selected cleanup actions to address contamination at and from the NWIRP Bethpage. The Navy OU2 remedial program implements a remedy for groundwater that is protective of human health and the environment, is permanent and cost-effective, and complies with Applicable or Relevant and Appropriate Requirements (ARARs). The primary goal of the remedy is to effectively mitigate significant threat to public health and the environment through the proper application of scientific and engineering principles.

The Navy ROD addresses on-property and off-property OU2 VOC-contaminated groundwater, and specifies the following remedial action objectives to protect human health and the environment:

- Eliminate, to the extent practicable, site-related contaminants from the affected public water supplies and to prevent, to the extent practicable, the future contamination of public water supplies through the implementation of the off-property groundwater remediation.
- Eliminate, to the extent practicable, exposures to contaminated groundwater.
- Eliminate, to the extent practicable, off-property migration of contaminated groundwater and, where practicable, to restore the groundwater to pre-disposal conditions.
- Eliminate, to the extent practicable, exceedances of applicable environmental quality standards related to releases of contaminants to the waters of the state.
- Eliminate, to the extent practicable, detections of site-related VOC contamination for affected drinking water supplies using U.S. EPA Method 502.2 to a detection limit of 0.5 µg/l.

### **5.2 COMPREHENSIVE STRATEGY AND REMEDIAL ACTIONS**

The Navy and Northrop Grumman have implemented multiple response actions as part of their groundwater cleanup programs to achieve the Remedial Action Objective (RAOs) in the off-property groundwater. RAOs are site-specific goals based on the chemicals of concern (COCs), the impacted media, COC fate and transport, potential exposure routes, and receptors. RAOs provide a clear and concise description of what the remedial action should accomplish. The remedial programs, implemented by Northrop Grumman under the original 2001 NYSDEC OU2 ROD that was superseded by the 2019 NYSDDED OU2 and OU3 AROD

and by the Navy under its 2003 CERCLA OU2 ROD, have been addressing off-property groundwater contamination by including the following:

- The OU2 ONCT System to control migration from the NWIRP and NG properties.
- An active remedial program including design, implementation, and operation and maintenance (O&M) of an extraction well system near the GM38 location (operating since 2009) that eliminates a plume hotspot and contributes to further reducing plume mass and concentrations that could impact downgradient receptors.
- Development and implementation of a PWSCP (ARCADIS, 2003) that provides for the use of VPB and monitoring well data along with groundwater modeling to target outpost monitoring well locations and trigger values.
  - Installation of outpost monitoring wells that can provide early notice of any threatened impacts to public water supplies from the VOC plume.
  - A provision for wellhead treatment for public water supply systems or alternative approach pursuant to the PWSCP.
- Installation of VPBs and monitoring wells to continue identification and monitoring of the spatially and temporally evolving VOC plumes and to determine the need for future outpost monitoring wells.
- Detailed reviews conducted every five years to evaluate the continued effectiveness of the off-property groundwater remedial program and confirm the remedy continues to be protective of human health and the environment in accordance with CERCLA standards.
- Implementation of wellhead treatment at public water supply wells.
- An optimization study to re-evaluate the effectiveness of the groundwater remedial program.
- Ongoing evaluation of the site-related groundwater plumes to identify hotspots for further response.

The Navy, with review and input from NYSDEC, continues to work to optimize the remedy, as required. For example, in response to the discovery of the RE108 Area Hotspot (OU2), the Navy is designing an extraction, treatment, and discharge system for VOC mass removal. This RE108 Area Hotspot (OU2) System will further remediate the plume and limit its southward migration. As discussed below, the Navy is also evaluating additional actions that may be taken to reduce the concentrations within the plume and limit its southward migration (Section 5.2.3).

### **5.2.1 Northrop Grumman Onsite Containment System**

Northrop Grumman operates the OU2 ONCT system at the south-southwestern border of the former Northrop Grumman and NWIRP Bethpage properties as a component of the NYSDEC OU2 2001 ROD. The OU2 ONCT system was originally constructed as an Interim Remedial Measure consisting of four extraction wells and two treatment systems that started operation in 1998. In 1998, approximately 3,375

gpm of VOC-impacted groundwater were treated. Later a fifth well was added, and the system currently treats 3,800 gpm of VOC-impacted groundwater. From 1998 to present, the OU2 ONCT system has removed more than 200,000 pounds of VOCs from the aquifer. By halting migration from on-property source areas, the potential VOC load to the downgradient public water supplies has been reduced.

The OU2 ONCT data, as reported and evaluated by Northrop Grumman, indicate that the on-property portion of the OU2 groundwater remedy is an effective hydraulic barrier that controls the off-property migration of VOC-impacted groundwater to depths of approximately 600 feet bgs. The concentration of VOCs in downgradient monitoring wells screened to a depth of approximately 500 feet bgs or less have been decreasing as would be expected based on the operation of the OU2 ONCT System. Similarly, the influent concentrations of VOCs into the BWD Well 6-1 (screened from 328 to 381 feet bgs) treatment system are decreasing as expected, from approximately 200 µg/L in 2001 to 27 µg/L in 2018.

### **5.2.2 GM38 Area Hotspot (OU2) Treatment System Design, Implementation, and Operation and Maintenance**

In 2009, the Navy started operation of the GM38 Area Hotspot (OU2) Treatment System, which is approximately 8,500 feet south-southeast of NWIRP Bethpage (Figure 1-2). The system includes two recovery wells. Extracted groundwater is treated to remove VOCs and is then returned to the groundwater by discharge through Nassau County Recharge Basin #495. Groundwater samples are collected from eight monitoring wells to determine the effectiveness of treatment. From 2009 to December 2019, approximately 4.9 billion gallons of groundwater containing 11,800 pounds of VOCs were effectively extracted and treated. Quarterly and Annual Reports on the operation and maintenance of the GM38 Area Hotspot (OU2) Treatment System are transmitted to NYSDEC.

### **5.2.3 Evaluation of Other Potential OU2 Hotspots**

The Navy OU2 ROD anticipated that new hotspots may be identified in the future. The potential presence of the RE108 Area Hotspot was initially identified in 2011, based on sustained concentrations of TCE in BWD Well 6-2. The concentration of TCE in BWD Well 6-2, (screened from 700 to 770 feet bgs) prior to treatment, increased from less than 50 µg/L prior to 2006 to approximately 400 µg/L in 2007 through 2009, to 800 µg/L in 2010, and approximately 1,000 to 1,200 µg/L in 2011 to 2013, respectively. Since 2013, under sustained pumping, the TCE concentration remained greater than 1,000 µg/L. In 2016, the pre-treatment TCE concentration in this well was 1,280 µg/L.

In 2011, in response to the higher concentrations of TCE in Well 6-2, liquid phase GAC was added to the treatment system to ensure effective treatment of the groundwater prior to distribution (i.e., comply with MCLs) and reduce the migration of VOC impacted groundwater. In 2013, the United States entered into a CERCLA settlement with BWD to reimburse its costs for construction of this augmented treatment system. Pursuant to a 2017 modification of the 2013 CERCLA agreement, the United States provided advanced and ongoing funding for an additional upgrade to the treatment system.

In 2013, the Navy started pre-design activities for a hotspot remedy with the installation of VPBs and monitoring wells in the area to define the boundary of the hot spot as well as conducting other testing needed for the design, including assessment of plume migration and concentrations, and hydrogeological properties in the area. The current extent of the RE108 Area Hotspot (OU2) area as defined by the greater than 1,000 µg/L shaded area, is shown on Figures 3-3, 3-4, and 4-2.

To facilitate and expedite implementation of the RE108 Area Hotspot remedy, the remedy was divided into two phases. The Phase I RE108 Area Hotspot Treatment System (Phase I System) is being installed to intercept and treat the northern portion of the RE108 Area Hotspot. The Phase I System will consist of one recovery well (RW4) located in the center of the RE108 Area Hotspot and underground piping from RW4 to the existing GM38 GWTP using a utility corridor. During its operation, it will remove significant volatile organic compound (VOC) mass from the aquifer, reduce overall aquifer cleanup times, and reduce the plume migration to the south and southeast. At present, RW4 has been constructed and is awaiting testing while construction of the pipeline is pending acquisition of easement agreements from property owners.

The objective of the Phase II RE108 Area Hotspot Treatment System (Phase II System) is to extract groundwater contaminated with chlorinated VOCs at concentrations greater than 1,000 µg/L for treatment using recovery wells located near the leading edge of the hotspot. Two to four new wells are anticipated to be required (RW5A, RW5B, RW6A, and RW6B). The extraction system will also be used, as practical, to control migration of groundwater contaminated with chlorinated VOCs at concentrations greater than 500 µg/L and that is in close proximity to the hotspot groundwater. The groundwater extraction, treatment, and discharge system would operate until the mass of VOCs in the RE108 Area Hotspot has been significantly reduced (i.e., a 90 percent reduction in TCE mass). The design for the Phase II is in progress.

In addition, the Navy is also evaluating the potential benefit associated with an extension of the RE108 Phase II System to include a new extraction well (RW7) to be located approximately 3,000 feet south of RW05 (Phase II Extension). This recovery well would be expected to further reduce contaminant mass in the aquifer and migration of the plume to the south.

#### **5.2.4 Phase III Southern State Parkway Intercept System**

In 2018 and 2019, the Navy refined a groundwater model to support decisions and actions needed to implement its OU2 ROD. The model was constructed using the groundwater flow simulation software MODFLOW. One of the uses of the model is to more accurately estimate potential migration of the OU2 plume in the area of the RE108 Area Hotspot, as well as in downgradient groundwater, including potential migration beyond the Southern State Parkway. Preliminary modeling results associated with the Phase I, Phase II, Phase II Extension, and Phase III are presented Appendix C and discussed below.

The results of the modeling indicated that the Deep Western Plume would be fully captured by the planned RE108 Area Hotspot recovery wells and public water supply wells. This modeling also indicates that portions of the shallow and very deep low VOC-concentration groundwater, may not be captured by

any of the wells north of Southern State Parkway. If unimpeded, this groundwater may be intercepted by public water supply wells south of Southern State Parkway or continue to flow toward South Oyster Bay.

In order to address OU2 groundwater that may flow south of the Southern State Parkway, the Navy used the groundwater model to identify the preliminary locations and depths of extraction wells and corresponding pumping rates that would be needed to intercept this groundwater. Pending the results of additional pre-design activities to be conducted in the area, two new extraction wells (RW8 and RW9) would be used to intercept deep portions of the OU2 plume south of RW7 and two new extraction wells (RW10 and RW11) would be used to intercept the shallow plume near the Southern State Parkway. The groundwater would be treated at new Navy treatment plant(s) as needed to remove contaminants and then discharged into local basins to replenish the aquifer.

### **5.2.5 Public Water Supply Contingency Plan**

The PWSCP provides for installation and monitoring of outpost (or sentinel wells) (ARCADIS, 2003). These wells are proximal to water supply wells. Trigger values (or action levels) were established in certain wells that would identify the need for discussions between the Navy, Northrop Grumman, and the affected water districts about wellhead treatment or other alternatives. The trigger values provide an approximate five-year warning prior to an expected VOC detection of 0.5 µg/L in the public water supply wells. In 2015, additional preliminary trigger values were established for SFWD Plant 6 and MWD (Resolution, 2015). A second addendum to the PWSCP was generated to provide trigger values for eight outpost wells installed to supplement or replace existing outpost wells (Resolution, 2016).

### **5.2.6 Installation of Vertical Profile Borings, Monitoring Wells, and Long-Term Monitoring**

The Navy program of installing VPBs and associated monitoring wells has been ongoing since 2001. Additionally, Northrop Grumman has installed its own VPBs and monitoring wells, and provides reporting for its own monitoring well program. The Navy and Northrop Grumman share the results of their monitoring programs with NYSDEC and other parties, including the affected and potentially affected water districts. These investigations are also used to identify potential new hotspots, and if found, to delineate the extent of the impacts.

A Long-Term Monitoring (LTM) program is ongoing to further define the configuration of the groundwater plumes and to determine effectiveness of remedial measures implemented to date. In the LTM program, over 200 wells are sampled quarterly, semiannually, or annually by Northrop Grumman and Navy, and the verified results are shared on a quarterly and annual basis.

### **5.2.7 Five-Year Review**

In accordance with CERCLA requirements for sites where chemicals remain at concentrations above unrestricted levels, the Navy most recently completed a five-year review in 2014 in consultation with NYSDEC (Resolution, 2014). The 2014 review evaluated the effectiveness of the groundwater remedy in

protecting human health and the environment. The detailed study concluded that the response actions implemented to meet RAOs are still valid for off-property groundwater and ensure continued protectiveness by limiting exposure potential to contaminated groundwater.

In April 2020, the Navy completed a draft of the next Five-Year Review. This report is expected to be completed in mid-2020.

As part of the draft 2020 Five-Year Review, the Navy evaluated the 2019 NYSDEC AROD. The infrastructure associated with this AROD is presented in Figure 5-1. While the Navy continues to believe that full hydraulic containment of the plume, as presented in the 2019 AROD, is not practicable because the plumes have evolved into a large, deep, fragmented, and complex collection of groundwater impacts, which continue to evolve, the Navy is evaluating in its 2020 Five-Year Review, opportunities to further reduce potential future contamination of public water supplies and migration of contaminated groundwater as practicable.

Since NYSDEC selected the remedy identified in the AROD, the Navy is evaluating OU2-related concepts and remedy components of NYSDEC's selected remedy for potential incorporation by the Navy in its CERCLA OU2 remedy, to the extent that they: 1) would not adversely affect the Navy's remedy; 2) do not unnecessarily result in risk to human health and the environment during construction and operation of the remedy; 3) address contamination that is associated with the NWIRP; and 4) are technically practicable to implement, which includes the NCP concept of effectiveness-to-cost proportionality.

This assessment includes evaluating the value of installing additional groundwater extraction wells and treatment properties to the south and downgradient of the RE108 Area Hotspot. In particular, the Navy is evaluating the potential benefit associated with:

- an extension of the RE108 Phase II System to include a new extraction well (RW07) to be located approximately 3,000 feet south of RW05,
- a new Phase III System project with extraction wells RW08 through RW11 to be located near Southern State Parkway, approximately 4,000 feet south of RW07.

The borders of the Southern State Parkway represent open space where it may be practical to install extraction, conveyance, and treatment systems and intercept the migration of the plume. The Navy will use groundwater flow modeling combined with information from several new VPBs to determine the best location for additional recovery wells that would be positioned to intercept the OU2 plume. The Navy intends to work with NYSDEC to incorporate selected remedy objectives specific to the OU2 plume and to address site-related contaminants in the Phase II System extension and Phase III System remedial designs.

Preliminary groundwater modeling and capture zone analysis indicates that if the Navy implements RW07 to RW11, control of the OU2 plume migration similar to that achieved by NYSDEC AROD Selected Remedy

could be achieved. A comparison of the projected Navy and NYSDEC selected remedy capture zones are presented in Figure 5-2.

### **5.2.8 Wellhead Treatment of Public Water Supplies**

Wellhead treatment systems were installed and are operating at BWD Plants 4, 5, and 6, SFWD Plants 1 and 3, and NYAW facility at Seamans Neck Road (Figure 4-1). NYSDOH's contaminant-specific Water Quality Regulations continue being met at these water supply wells through air stripping, advanced oxidation process, and/or GAC treatment technologies. The water that is distributed to the community is tested at least monthly to ensure that the drinking water standards promulgated by the NYSDOH are met. The water supplied by these properties meets all the applicable drinking water standards.

The Navy is continuing to work with several water districts to ensure protection of the public water supplies from VOCs in the OU2 plume. The current system of groundwater monitoring and public water supply treatment is based on the well-established groundwater migration direction and VOCs that could impact these systems. There are other groundwater plumes in the area which contain contaminants that are not associated with the former NWIRP Bethpage and Northrop Grumman properties. Some contaminants, such as Freon-113 and methyl tert-butyl ether, believed to have been released from dry cleaners and gasoline stations, respectively, would not be effectively treated by the existing VOC equipment on the public water supplies. If these other contaminants impact the public water supplies, additional upgrades would be required by other responsible parties.

### **5.3 BETHPAGE COMMUNITY PARK OU3 ROD**

The NYSDEC Bethpage Community Park OU3 ROD selected as the remedy the operation of an onsite containment system (OU3) and a system to capture and treat the RW21 Area Hotspot (OU3) groundwater to the maximum extent practicable. Northrop Grumman's operation of the Bethpage Community Park OU3 onsite containment system is a continuation of an Interim Remedial System that started operation in 2009. The extraction wells are located along the southern border of the Bethpage Community Park (Figure 1-2). The OU3 onsite containment system captures VOC-impacted groundwater to a depth of approximately 145 feet bgs (ARCADIS, 2016)

The RW21 Area Hotspot represents the area of higher concentrations within the Deep Eastern Plume (OU3). Northrop Grumman is in the process of designing and constructing the RW21 Area Hotspot (OU3) Treatment System to address this Hotspot.

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## 6.0 SUMMARY

On June 15, 2019, the Navy submitted the third Annual Report in response to Title IV, Section 5009 of the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016, which requires the Secretary of the Navy to submit annual reports through 2021 to the United States Congress. This 2020 Annual Report presents an updated evaluation of groundwater quality and migration in the vicinity of the former NWIRP Bethpage, NY.

In accordance with requirements of the 2016 WIIN Act, this report provides the following:

- A description of the status of the groundwater contaminants that are leaving the site and migrating to a location within a 10-mile radius of the site, including:
  - detailed mapping of the movement of the plume over time, and
  - projected migration rates of the plume;
- An analysis of the current and future impact of the movement of the plume on drinking water facilities; and
- A comprehensive strategy to prevent the groundwater contaminants from the site from contaminating drinking water wells that, as of the date of the submission of the report, have not been affected by the migration of the plume.

Site-related contaminants are primarily VOCs identified in the RODs issued by the Navy or NYSDEC that have migrated from the former NWIRP Bethpage and Northrop Grumman properties southward. The VOC releases from these properties form a 3,000 plus -acre area of VOC-impacted groundwater that extends south of Hempstead Turnpike. The groundwater impacts extend to a depth of approximately 750 feet, but are not continuous throughout this area and are not present at all depths. There are other nearby known or suspected sources that have contributed to regional groundwater impacts including Hooker Ruco Superfund Site and various current and former dry cleaners and gasoline stations in the area. Plume migration rates may vary from the groundwater flow rates due to non-uniform flow pathways, chemical dispersion, area-wide pumping by supply wells, and targeted VOC mass removal from groundwater by remedial wells.

VOCs from the former NWIRP Bethpage and Northrop Grumman properties have impacted, or are anticipated to impact, groundwater quality at the intakes for public water supply well fields operated by Bethpage Water District, South Farmingdale Water District, and New York American Water (which are treated to meet all Federal and State drinking water standards) and are anticipated to impact public water supply well fields operated by South Farmingdale Water District SFWD Plant 3. Outpost monitoring wells, quarterly groundwater sampling, monthly public water supply testing and an ongoing and extensive VPB groundwater sampling program are currently used to monitor and alert nearby water districts and the Navy of the detection of site-related VOCs. The Navy will continue to monitor SFWD outpost well data to ensure that timely action is taken to maintain protection of the SFWD Wells 6-1 and 6-2 water supply.

Northrop Grumman reports that the OU2 ONCT System effectively captures impacted groundwater associated with the former NWIRP Bethpage and Northrop Grumman properties and that the Bethpage Community Park OU3 containment system effectively captures impacted groundwater from that former Northrop Grumman property. For VOC-impacted groundwater that has migrated past the containment system locations before they were installed, the following actions are being taken:

- The Navy is operating the GM38 Area Hotspot (OU2) Treatment System.
- The Navy is obtaining property access agreements for piping runs of the Phase I of the RE108 Area Hotspot Treatment System to be located north of Hempstead Turnpike and is designing and obtaining property access agreements for the recovery wells, piping runs, and discharge basins for Phase II RE108 Area Hotspot Treatment System (to be located south of Hempstead Turnpike), both of which will address areas with elevated VOC-impacted groundwater. Pending access agreements and pipeline construction, the Phase I System is anticipated to be online in 2020 and the Phase II System is anticipated to be online in 2022. The Phase I recovery well RW4 was installed in 2019 and the Navy has obtained property for the construction of the Phase II Treatment System.
- Northrop Grumman is designing and constructing the RW21 Area Hotspot (OU3) Treatment System.
- Wellhead treatment at BWD Plants 4, 5, and 6, SFWD Plants 1 and 3, and NYAW on Seaman's Neck Road ensures that the public is not exposed to VOC-impacted groundwater.
- A groundwater monitoring/detection program and additional VPB/well installations are being conducted to continue assessing groundwater quality and identifying any additional actions that may be required.
- The Navy is working with NYSDEC to potentially incorporate elements or concepts from the NYSDEC AROD into the Navy's OU2 CERCLA groundwater remedy that : 1) would not adversely affect the Navy's remedy; 2) do not unnecessarily result in risk to human health and the environment during construction and operation of the remedy; 3) address contamination that is associated with the NWIRP; and 4) are technically practicable to implement, which includes the NCP concept of effectiveness-to-cost proportionality.
- Specific elements being considered by the Navy are: an extension of the RE108 Phase II System to include a new extraction well (RW07) to be located approximately 3,000 feet south of RW05; and a new Phase III System project with extraction wells RW08 through RW11 to be located near Southern State Parkway, approximately 4,000 feet south of RW07.

In addition, the Navy continues to implement the remedy selected in its OU2 ROD for contamination at and from the former NWIRP Bethpage, in a manner that is protective of human health and the environment. The Navy will continue working closely with NYSDEC, NYSDOH, local water districts, and other stakeholders (including the community Restoration Advisory Board), to coordinate and seek input into the

Navy's ongoing remedial actions and future remedial action proposals. Through implementation of this comprehensive remedial strategy, the drinking water in the area complies with all Federal and State drinking water standards, and therefore continues to be safe to drink.

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## REFERENCES

- ARCADIS, 2003. Public Water Supply Contingency Plan, Bethpage, New York.
- ARCADIS, 2010. DRAFT Comprehensive feasibility study, volume 2— Study area Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York, NYSDEC Site # 1–30–003A2010.
- ARCADIS, 2016. 2015 Annual Summary Report, Operation, Maintenance, and Monitoring Report for the Bethpage Park Groundwater Containment System, Operable Unit 3 (Former Grumman Settling Ponds, Bethpage, New York. NYSDEC #1-30-003A.
- Arcadis, 2018. Fourth Quarter 2018 Groundwater Investigation Results; NOT YET PUBLISHED.
- Arcadis, 2018. Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Outpost Wells, Second Quarter 2018, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED.
- Como, M.D., Noll, M.L., Finkelstein, J.S., Monti, J., Jr., and Busciolano, R., 2015, Water-table and potentiometric-surface altitudes in the Upper Glacial, Magothy, and Lloyd aquifers of Long Island, New York, April–May 2013: U.S. Geological Survey Scientific Investigations Map 3326, 4 sheets, scale 1:125,000, 6-p. Retrieved from pamphlet, <https://dx.doi.org/10.3133/sim3326>.
- Gavaskar, A., Harre, K., Humann, R., Misut, P., Newell, C., Rectanus, H., and Widdowson, M., 2011. Remedy Optimization Team Report for the Bethpage Groundwater Plume Remedy for the Naval Facilities Engineering Command Mid-Atlantic.
- HDR (Henningson, Durham, and Richardson Architecture and Engineering P.C.), 2016. Remedial Options Report, Grumman Aerospace-Bethpage Facility. NYSDEC Standby Engineering Contract Work Assignment (#D007625-23).
- HDR (Henningson, Durham, and Richardson Architecture and Engineering P.C.), 2019. Feasibility Study Report Northrop Grumman Bethpage Facility (Operable Units 2 and 3) & Naval Weapons Industrial Reserve Plant (Operable Unit 2) (NYSDEC Site # 130003A and 130003B) Grumman Aerospace-Bethpage Facility, April. NYSDEC Standby Engineering Contract Work Assignment (#D007625-32).
- Isbister, J., 1966. Geology and hydrology of Northeastern Nassau County, Long Island, New York. Water Supply paper 1925. U.S. Geological Survey.
- Koman Government Solutions (KGS), 2018. Quarterly Operations Report, Third Quarter 2018, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York. December
- McClymonds, N., and Franke O., 1972. Water Transmitting Properties of Aquifers on Long Island, New York. U.S. Geological Survey Professional Paper 627-E.

Navy, 2003. Record of Decision for Operable Unit 2 Groundwater NYS Registry: 1-30-003B Naval Weapons Industrial Reserve Plant Bethpage, New York.

New York State Department of Environmental Conservation, 2001. New York State Department of Environmental Conservation Record of Decision Operable Unit 2 Groundwater Northrop Grumman and Naval Weapons Industrial Reserve Plant Sites Inactive Hazardous Waste Disposal Sites, Town of Oyster Bay, Nassau County, New York Site Nos. 1-30-003A & B.

NYSDEC, 2013. Record of Decision, Northrop Grumman – Bethpage Facility, Operable Unit Number: 03, State Super fund Project, Bethpage, Nassau County, Site No. 130003A.

NYSDEC, 2019. Amended Record of Decision, Northrop Grumman Bethpage Facility, Operable Unit Number 02: Off-Site Groundwater, Operable Unit Number 03: Former Grumman Settling Ponds and Adjacent Areas Off-Site Groundwater and Naval Weapons Industrial Reserve Plant Operable Unit Number 02: Off-Site Groundwater State Superfund Projects Bethpage, Nassau County, Site Nos. 130003A & 130003B. Prepared by the Division of Environmental Remediation, New York State Department of Environmental Conservation. December.

Resolution Consultants, Inc., 2014. 2013 Five-Year Review Operable Unit 1 Sites 1, 2, 3) and Operable Unit 2 (Groundwater) Naval Weapons Industrial Reserve Plant, Bethpage, New York.

Resolution Consultants, Inc. 2015. Trigger Value Development - Addendum to the Operable Unit 2 (OU2) Offsite Groundwater Public Water Supply Contingency Plant (PWSCP). July.

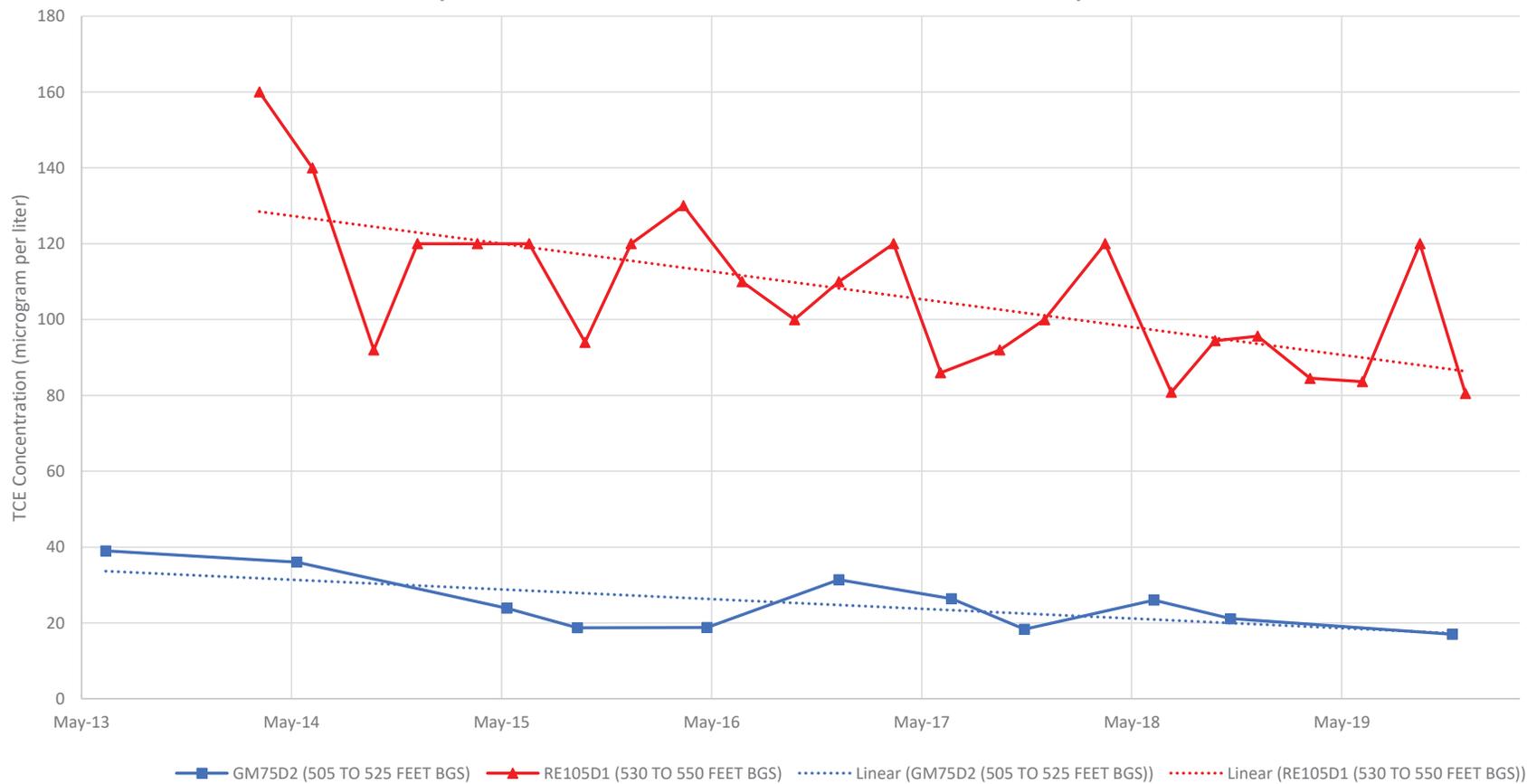
Resolution Consultants, Inc. 2016. Trigger Value Development - Addendum 2 to the Operable Unit 2 (OU2) Offsite Groundwater Public Water Supply Contingency Plant (PWSCP). August.

Resolution Consultants, 2018. March 2018 Groundwater Sampling Data Site 1 Operable Unit 2 NWIRP Bethpage NY.

Tetra Tech, 2012. Study of Alternatives for Management of Impacted Groundwater at Bethpage, Naval Weapons Industrial Reserve Plant, Bethpage, New York.

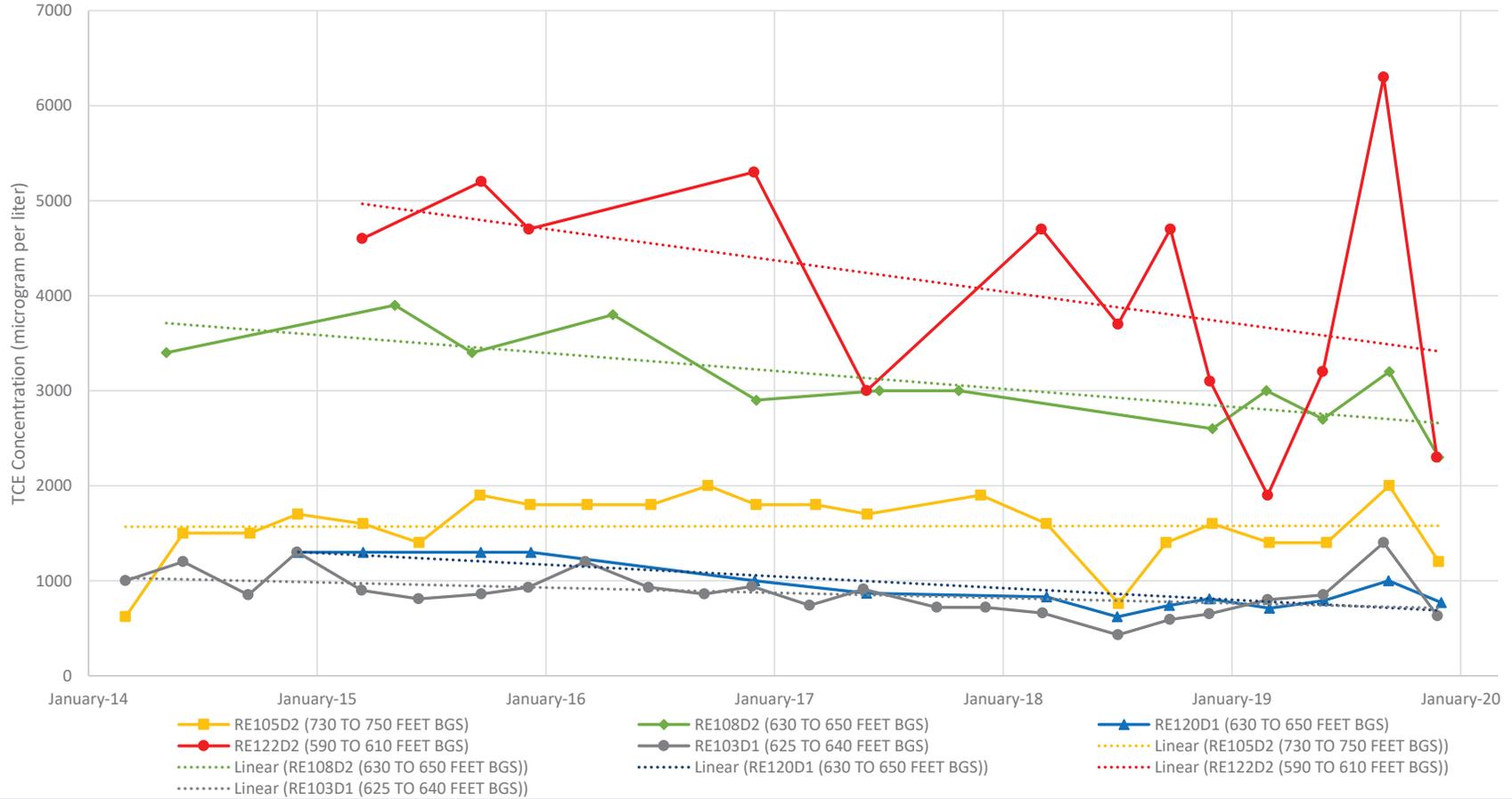
USGS, 2018. Misut, P.E., Simulation of Zones of Groundwater Contribution to Wells South of Naval Weapons Industrial Reserve Plant, Bethpage, New York. 2017-5161.

**GRAPH 3-1**  
**TREND ANALYSIS OF TCE IN THE NORTHERN PORTION OF THE DEEP WESTERN PLUME**  
**(DEPTH OF 500 TO 700 FEET BELOW GROUND SURFACE)**



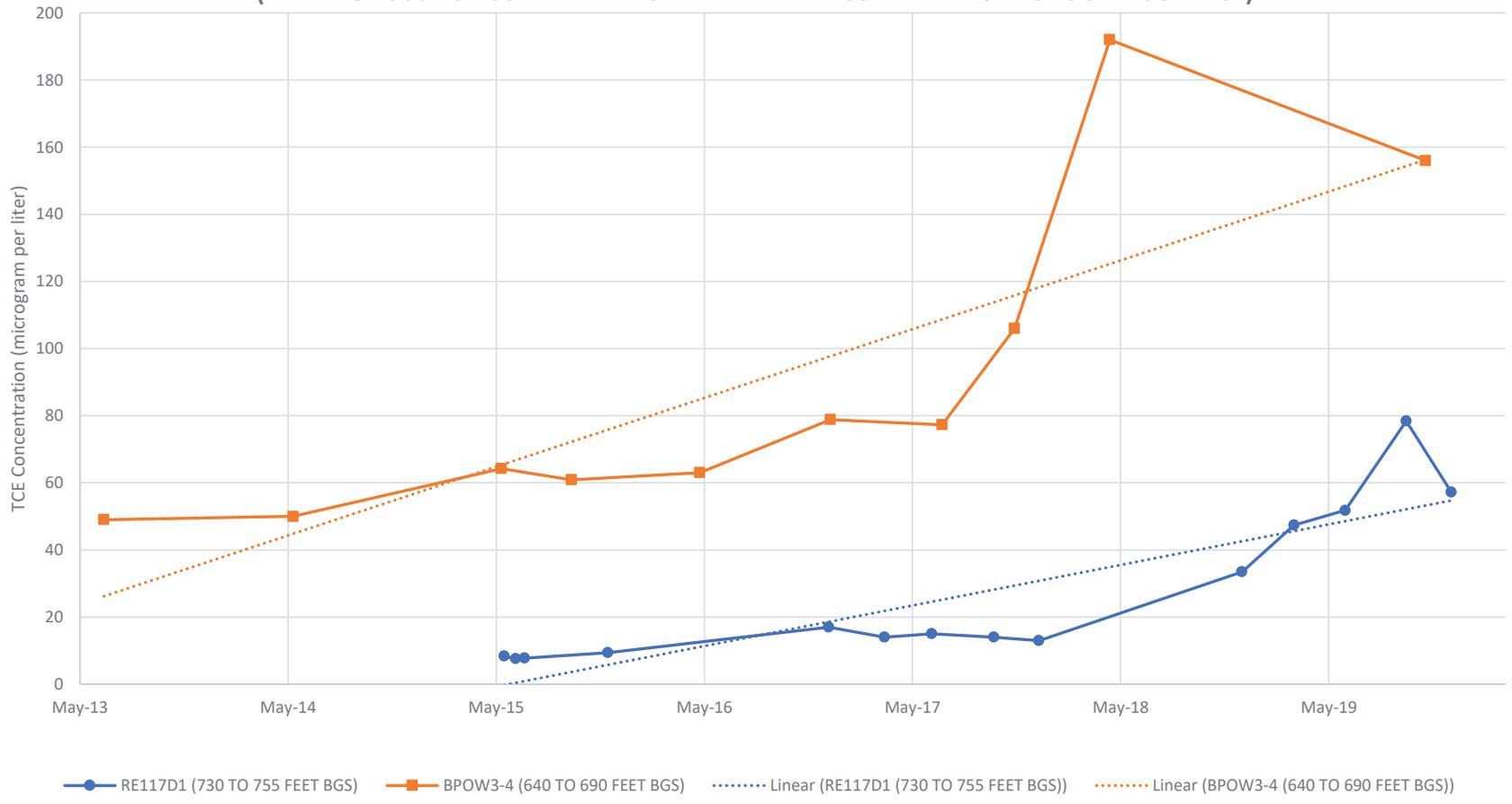
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**GRAPH 3-2**  
**TREND ANALYSIS OF TCE IN THE CENTRAL PORTION OF THE DEEP WESTERN PLUME**  
**(DEPTH OF 500 TO 700 FEET AND GREATER THAN 700 FEET BELOW GROUND SURFACE)**



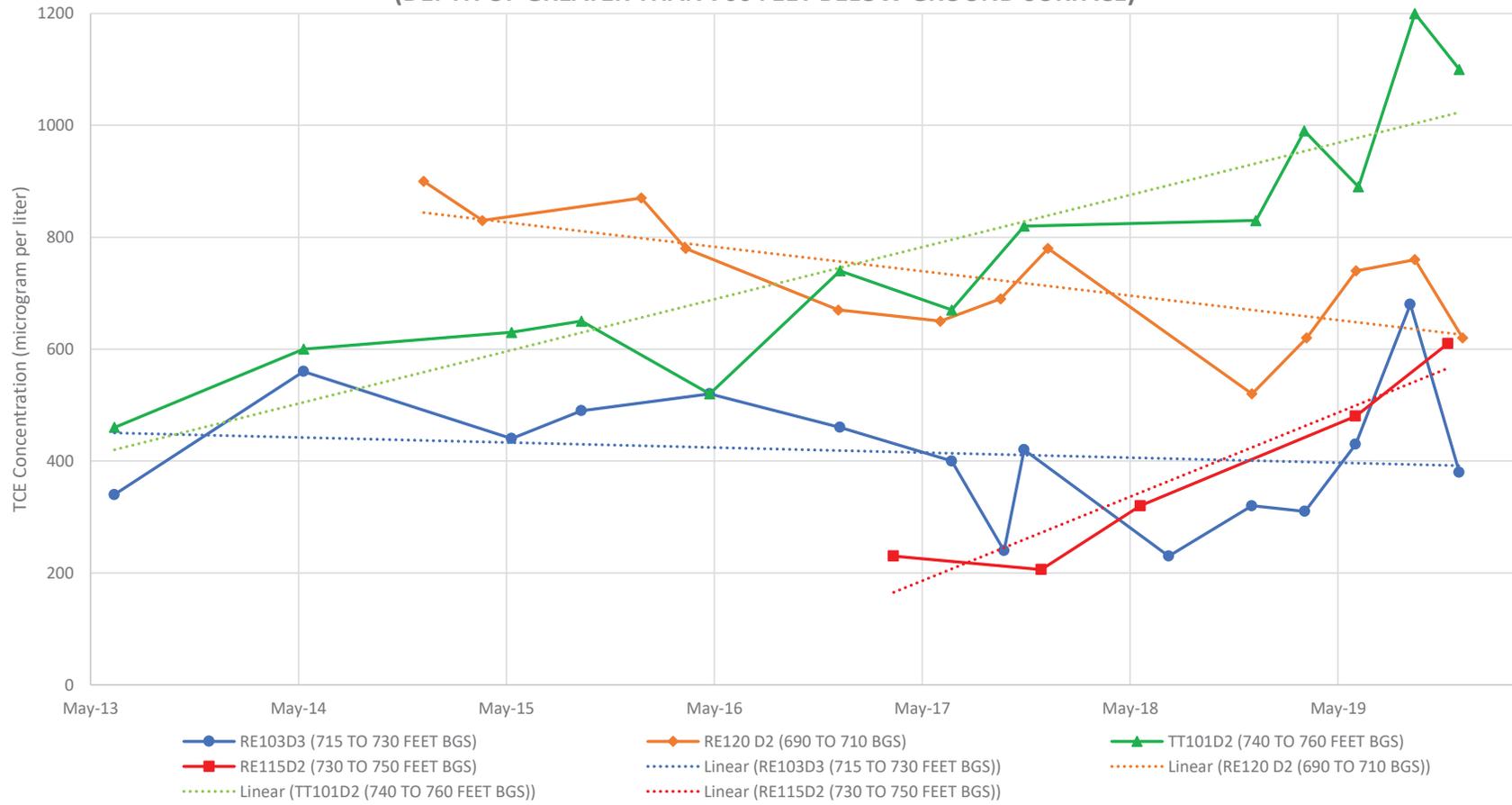
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**GRAPH 3-3**  
**TREND ANALYSIS OF TCE IN THE SOUTHERN PORTION OF THE DEEP WESTERN PLUME**  
**(DEPTH OF 500 TO 700 FEET AND GREATER THAN 700 FEET BELOW GROUND SURFACE)**

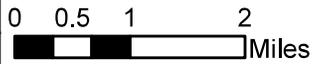


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**GRAPH 3-4**  
**TREND ANALYSIS OF TCE IN THE CENTRAL PORTION OF THE DEEP WESTERN PLUME**  
**(DEPTH OF GREATER THAN 700 FEET BELOW GROUND SURFACE)**

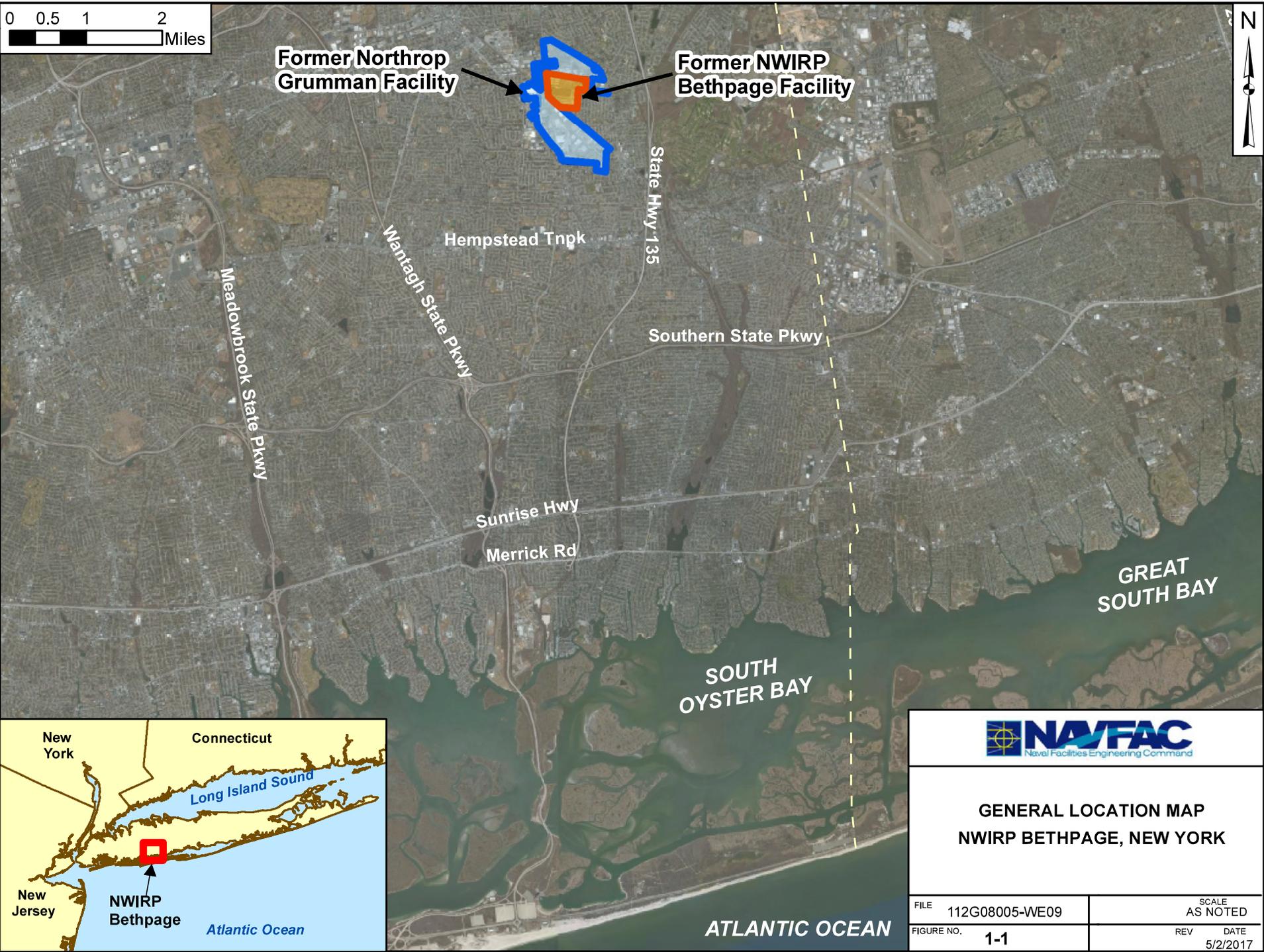


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**Former Northrop  
Grumman Facility**

**Former NWIRP  
Bethpage Facility**



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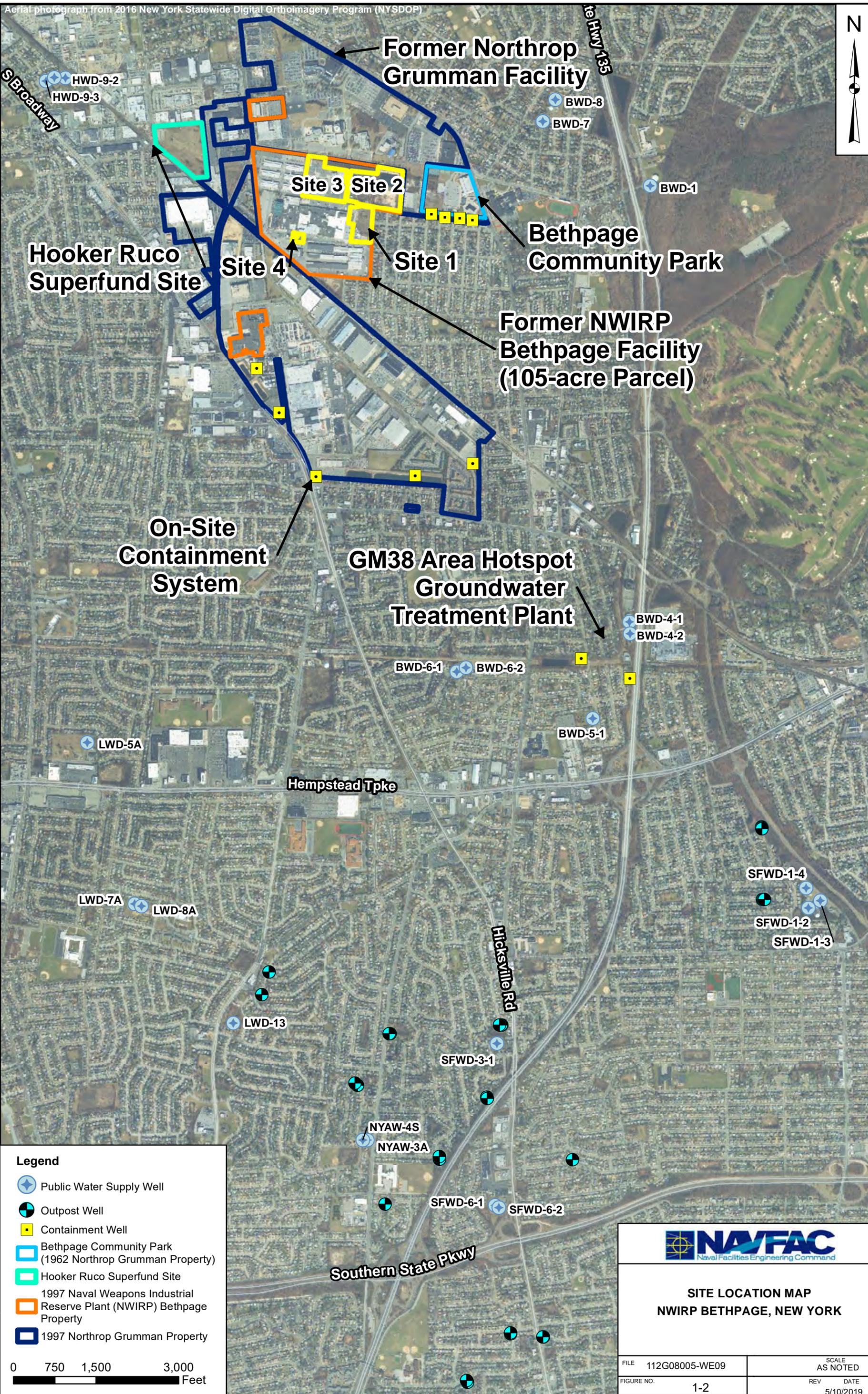


**GENERAL LOCATION MAP  
NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09
FIGURE NO.	<b>1-1</b>

SCALE	AS NOTED
REV	DATE
	5/2/2017

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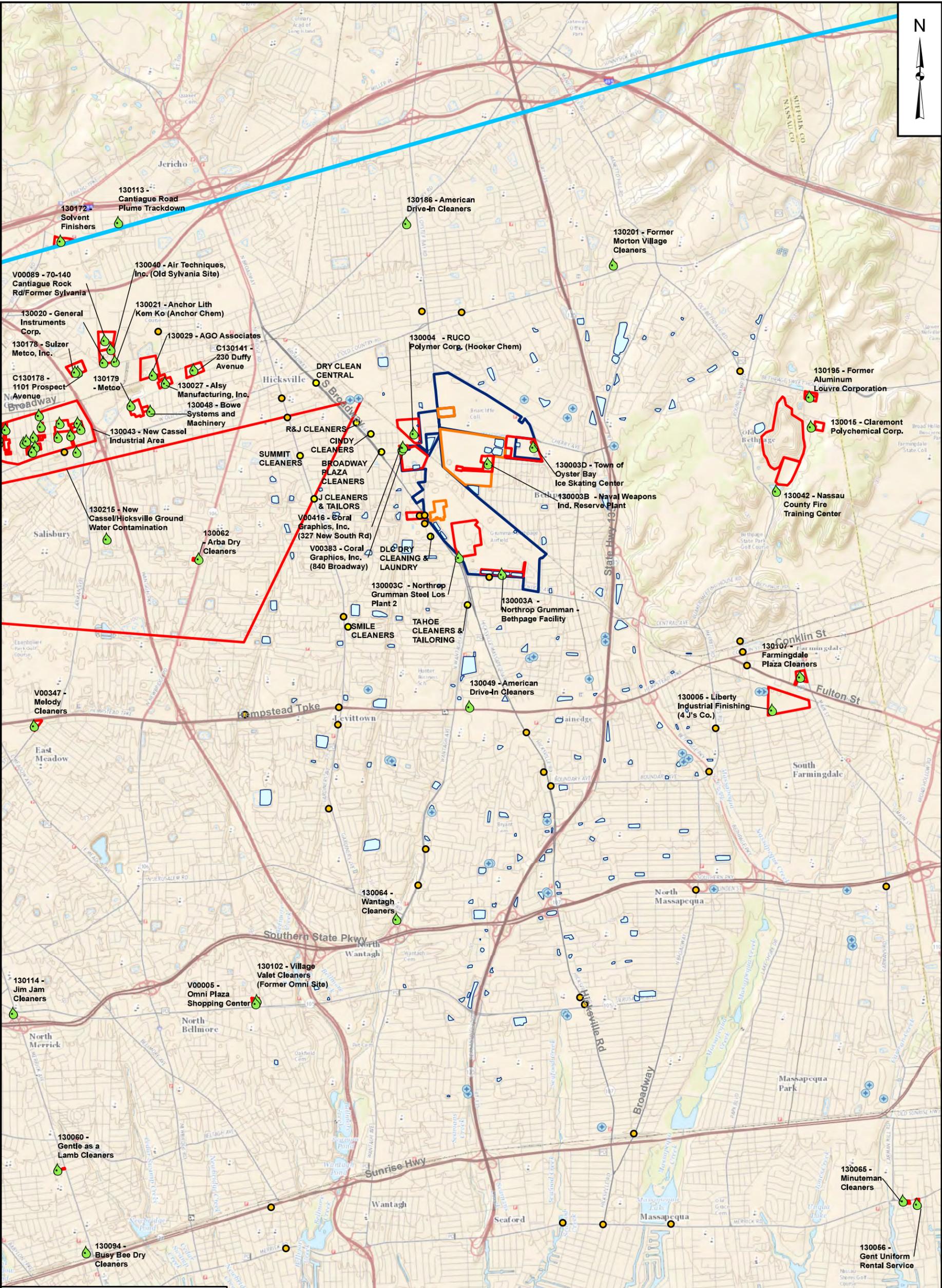
-  Public Water Supply Well
-  Outpost Well
-  Containment Well
-  Bethpage Community Park (1962 Northrop Grumman Property)
-  Hooker Ruco Superfund Site
-  1997 Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Property
-  1997 Northrop Grumman Property



**SITE LOCATION MAP  
NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	1-2	REV	DATE
			5/10/2019

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**Legend**

- Public Water Supply Well
- 2017 NYSDEC Sites with VOCs
- Known Dry Cleaner Locations
- Other Dry Cleaner Locations
- Long Island Groundwater Divide
- 2017 NYSDEC Remediation Site Outline
- Recharge Basins
- 1997 NWIRP Bethpage Property
- 1997 Northrop Grumman Property

0 2,000 4,000 6,000 Feet

**Notes:**  
 NWIRP- Naval Weapons Industrial Reserve Plant  
 NYSDEC- New York State Department of Environmental Conservation  
 VOCs- Volatile Organic Compounds

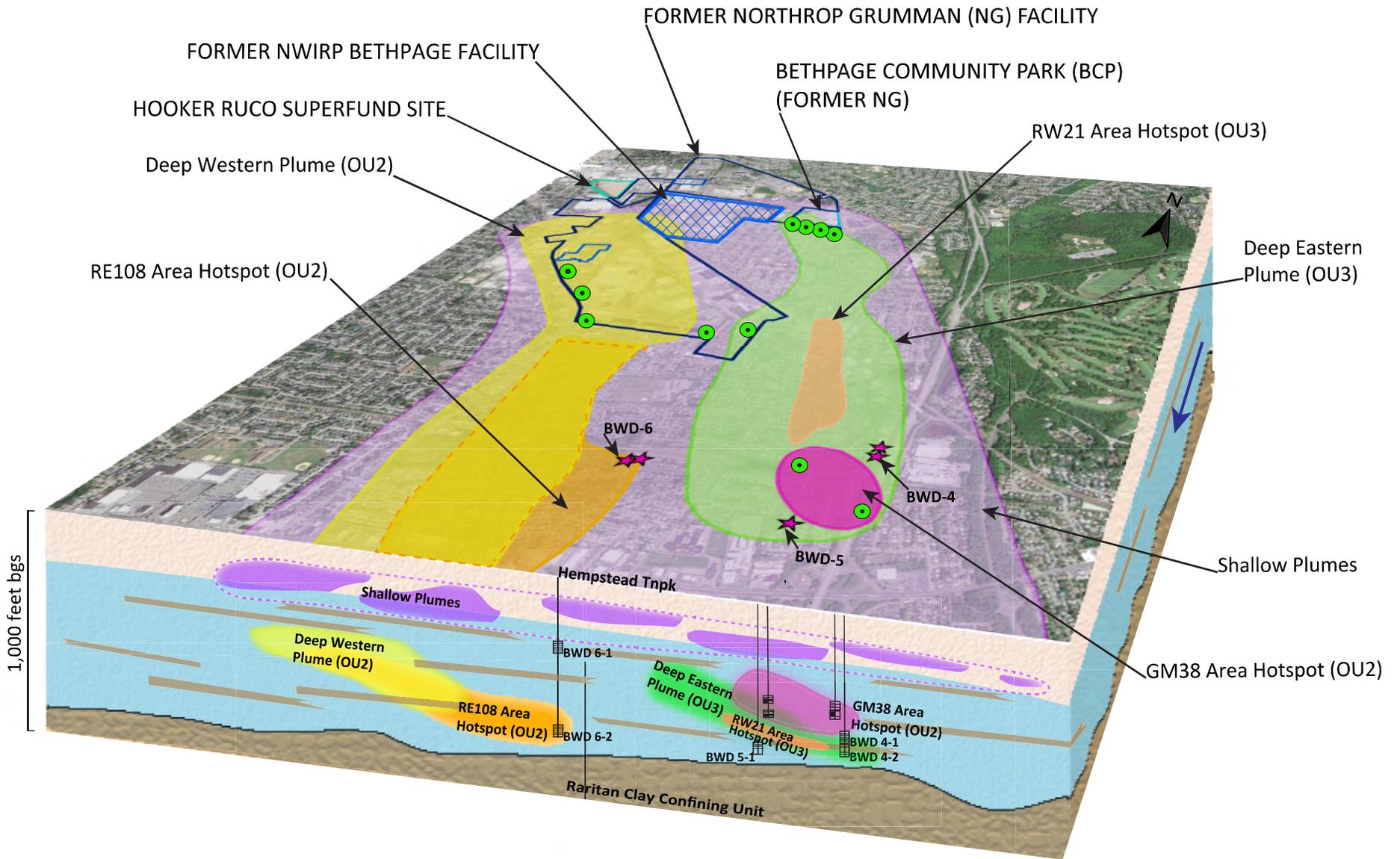
**NAVFAC**  
 Naval Facilities Engineering Command

**NASSAU COUNTY  
 SPILLS AND POTENTIAL SOURCES  
 NWIRP BETHPAGE, NEW YORK**

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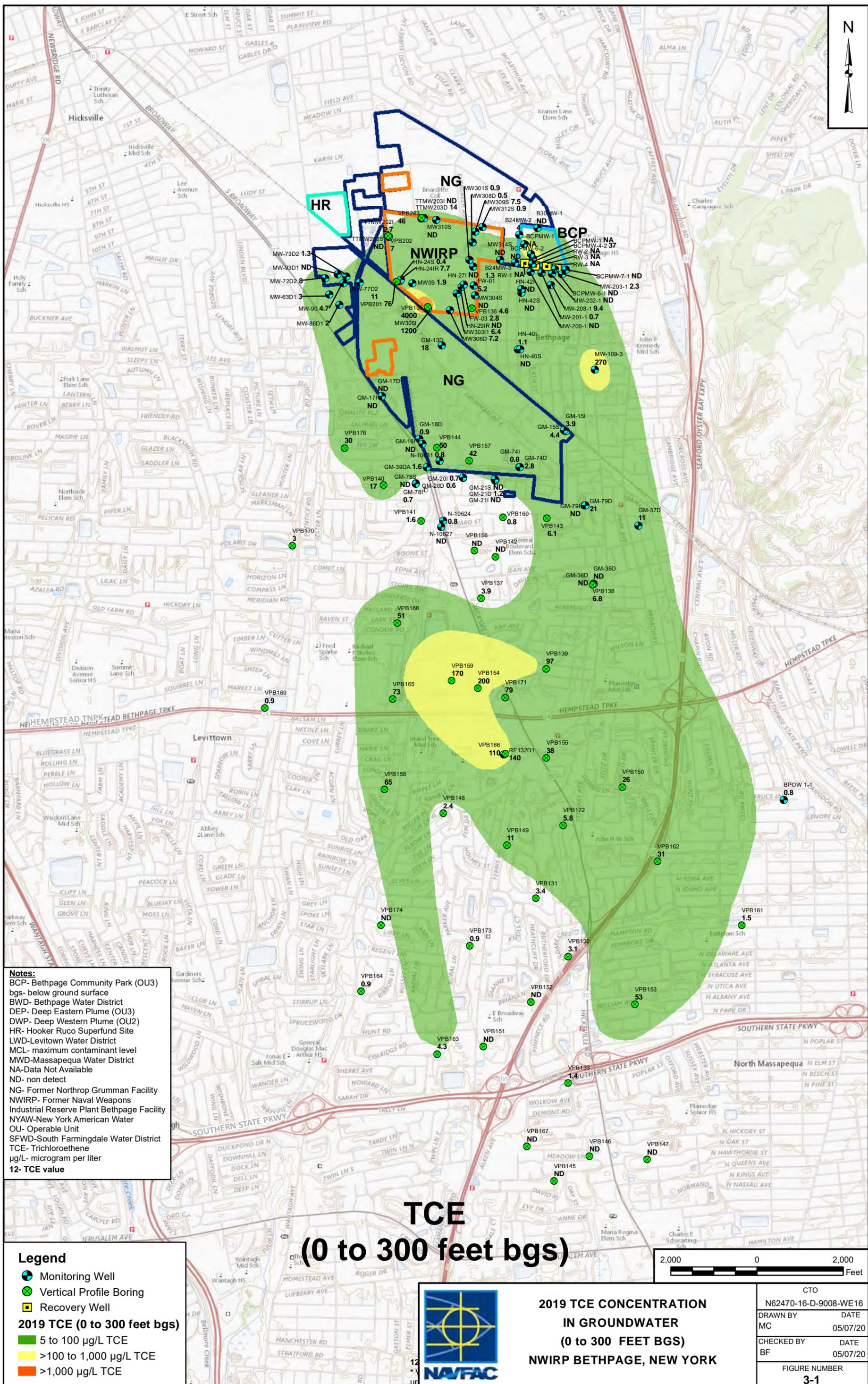
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**CONCEPTUAL SITE MODEL  
GROUNDWATER  
NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	NOT TO SCALE	SCALE
FIGURE NO.	<b>2-1</b>	5/18/2017	DATE

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**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 LWD- Levittown Water District  
 MCL- maximum contaminant level  
 MWD- Massapequa Water District  
 NA- Data Not Available  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW- New York American Water  
 OU- Operable Unit  
 SFWD- South Farmingdale Water District  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 12- TCE value

**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well

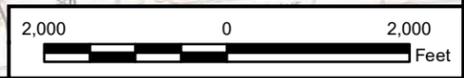
**2019 TCE (0 to 300 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

# TCE (0 to 300 feet bgs)



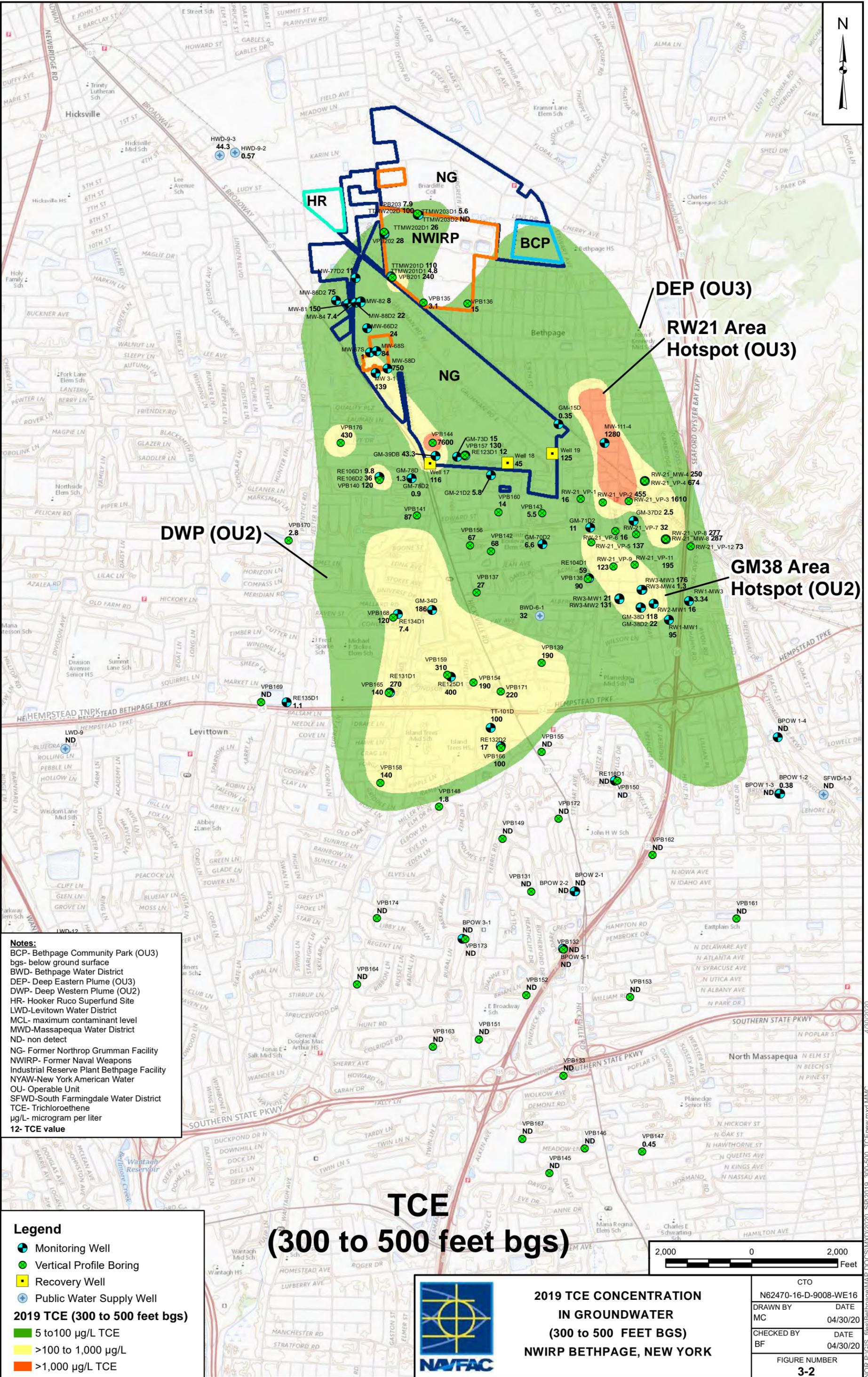
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IN GROUNDWATER  
(0 to 300 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**



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BF	05/07/20
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**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 LWD- Levittown Water District  
 MCL- maximum contaminant level  
 MWD- Massapequa Water District  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW- New York American Water  
 OU- Operable Unit  
 SFWD- South Farmingdale Water District  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 12- TCE value

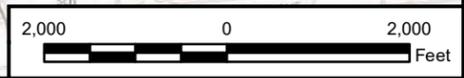
**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply Well

**2019 TCE (300 to 500 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L
- >1,000 µg/L TCE

# TCE (300 to 500 feet bgs)

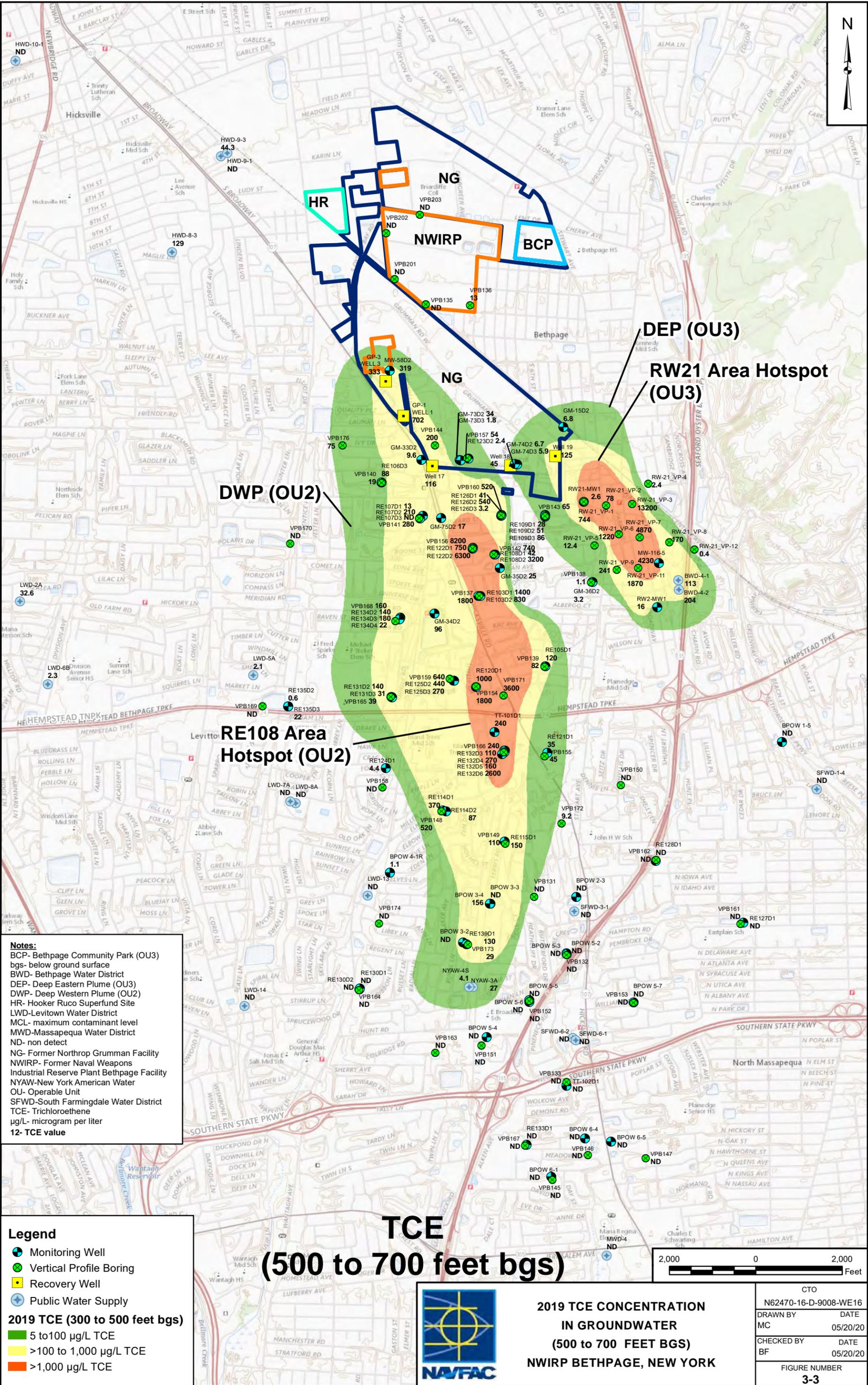


**2019 TCE CONCENTRATION  
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 (300 to 500 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

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FIGURE NUMBER	
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**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 LWD-Levittown Water District  
 MCL- maximum contaminant level  
 MWD-Massapequa Water District  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW-New York American Water  
 OU- Operable Unit  
 SFWD-South Farmingdale Water District  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 12- TCE value

**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply

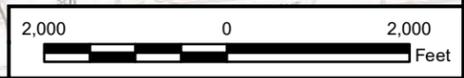
**2019 TCE (300 to 500 feet bgs)**

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- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

# TCE (500 to 700 feet bgs)



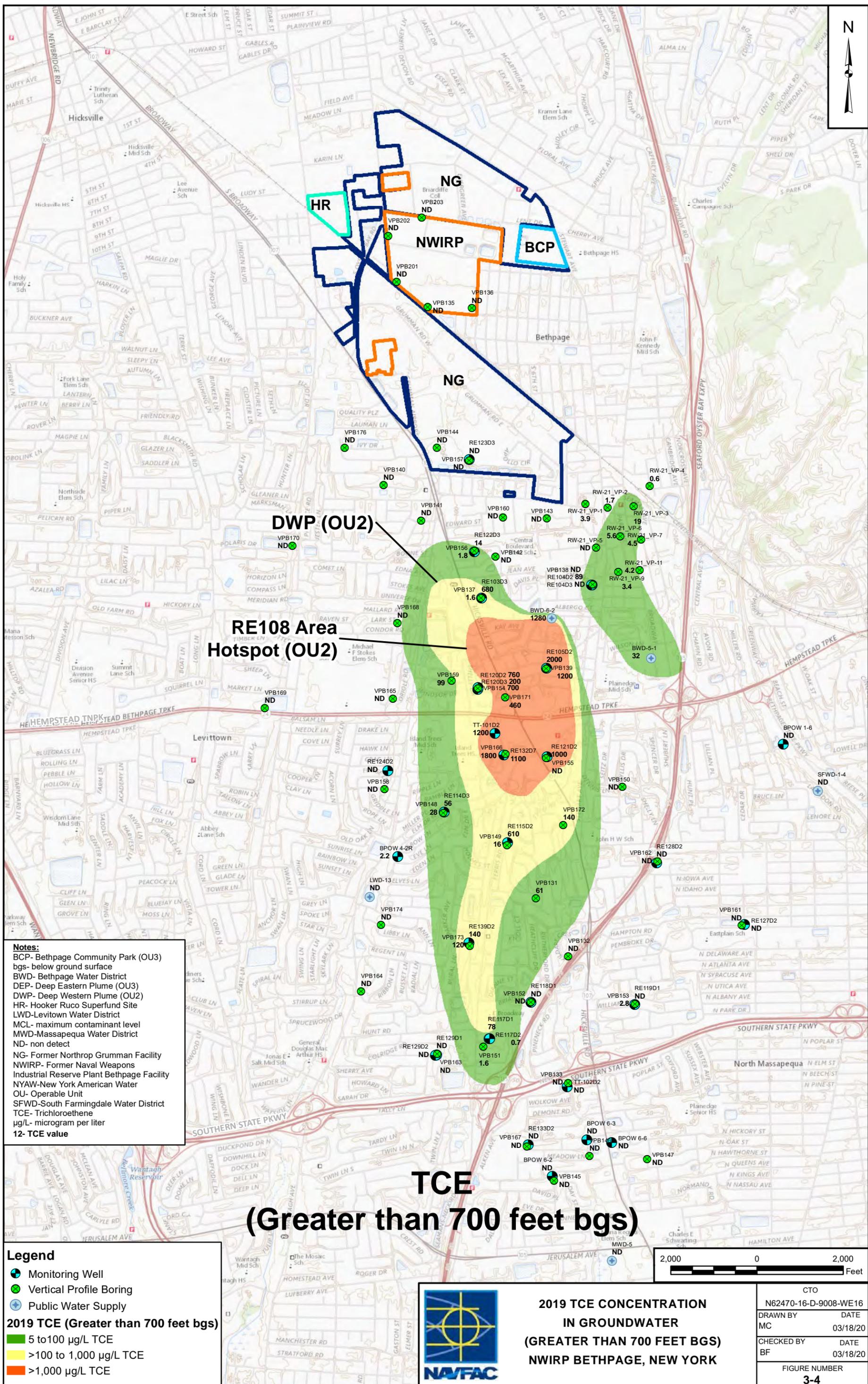
**2019 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**



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FIGURE NUMBER	
<b>3-3</b>	

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**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 LWD- Levittown Water District  
 MCL- maximum contaminant level  
 MWD- Massapequa Water District  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW- New York American Water  
 OU- Operable Unit  
 SFWD- South Farmingdale Water District  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 12- TCE value

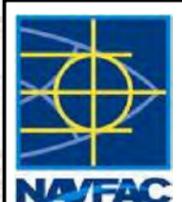
**Legend**

- Monitoring Well
- Vertical Profile Boring
- Public Water Supply

**2019 TCE (Greater than 700 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

# TCE (Greater than 700 feet bgs)

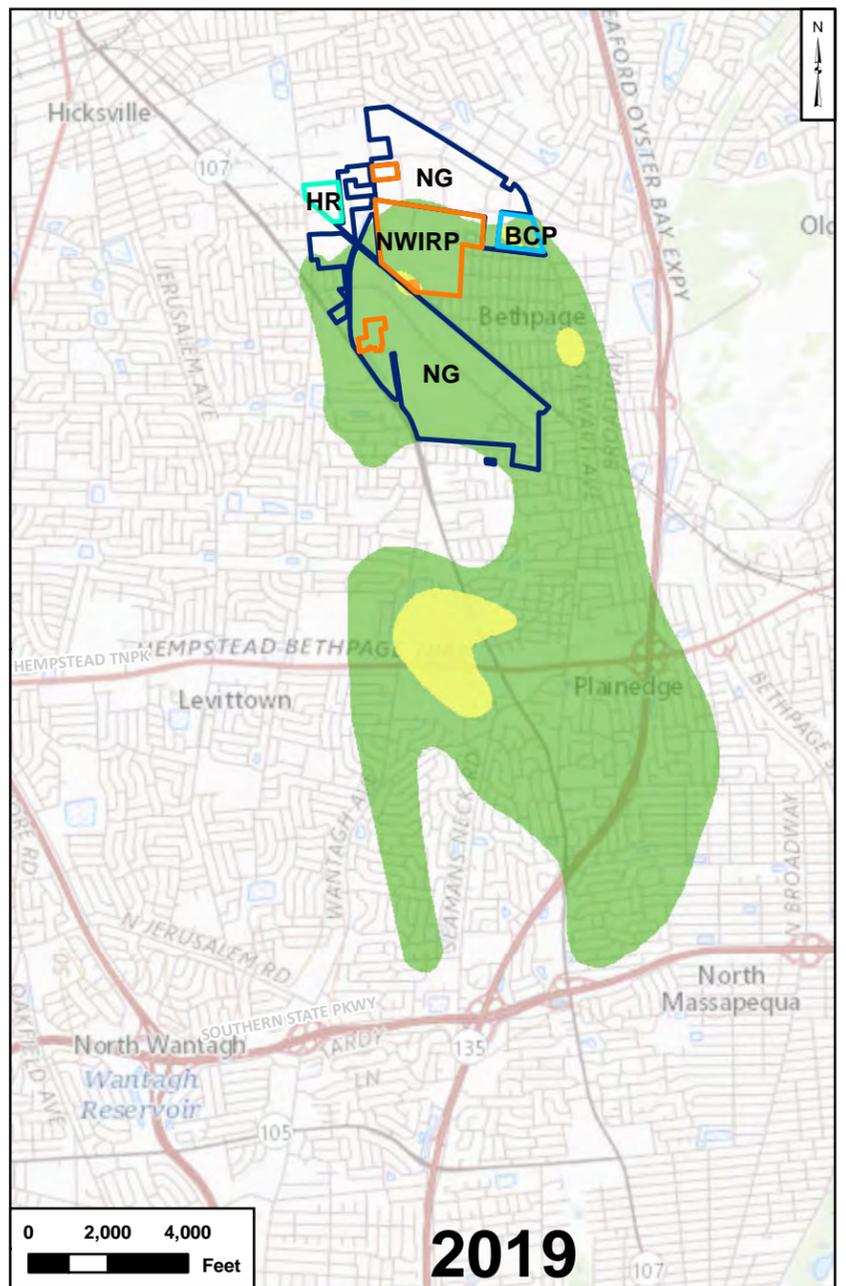
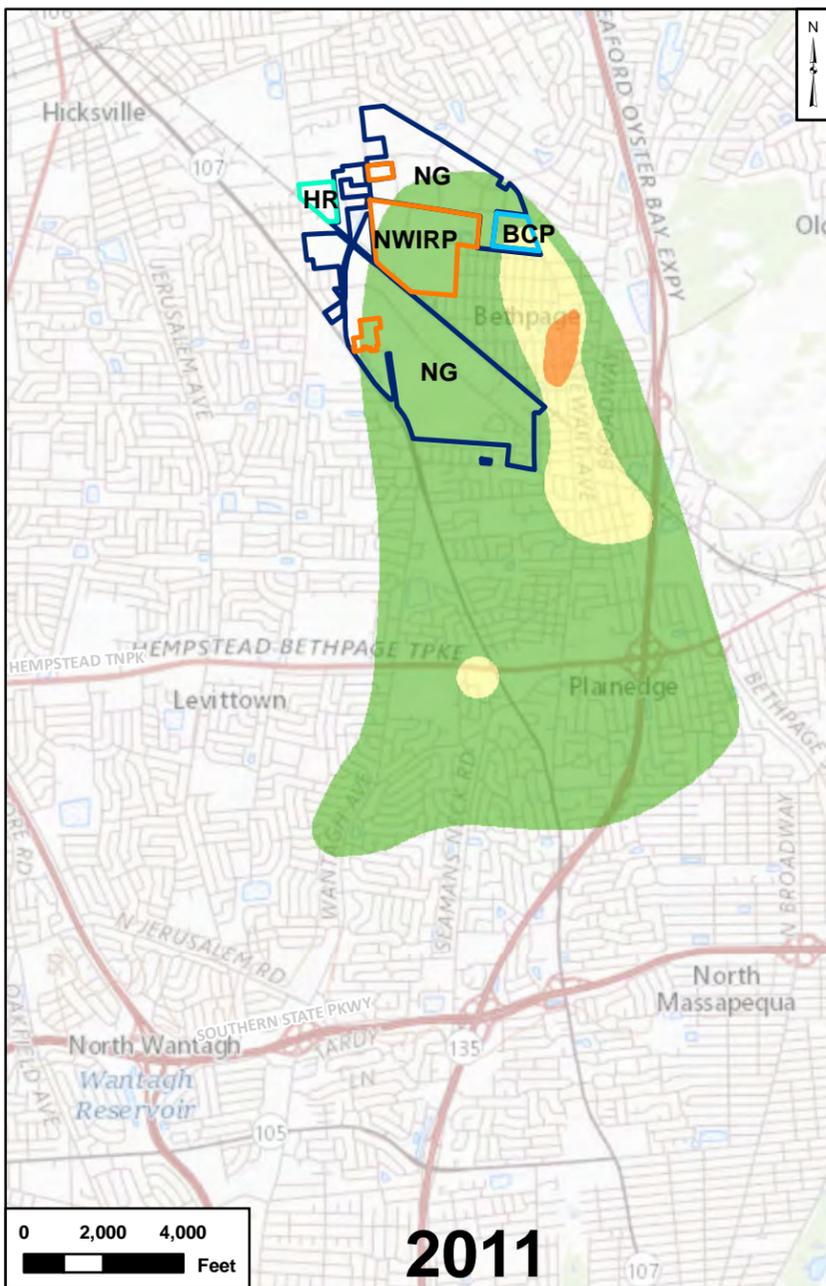
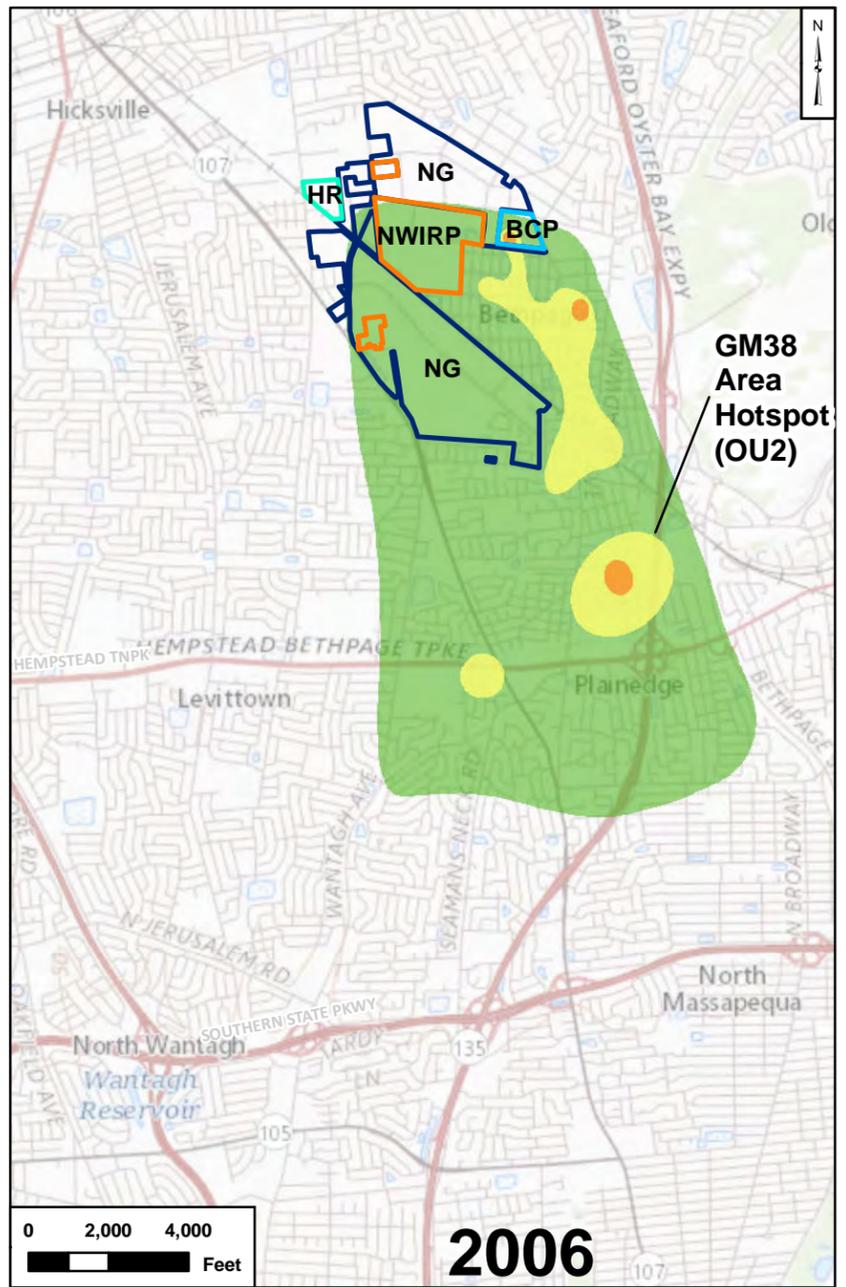
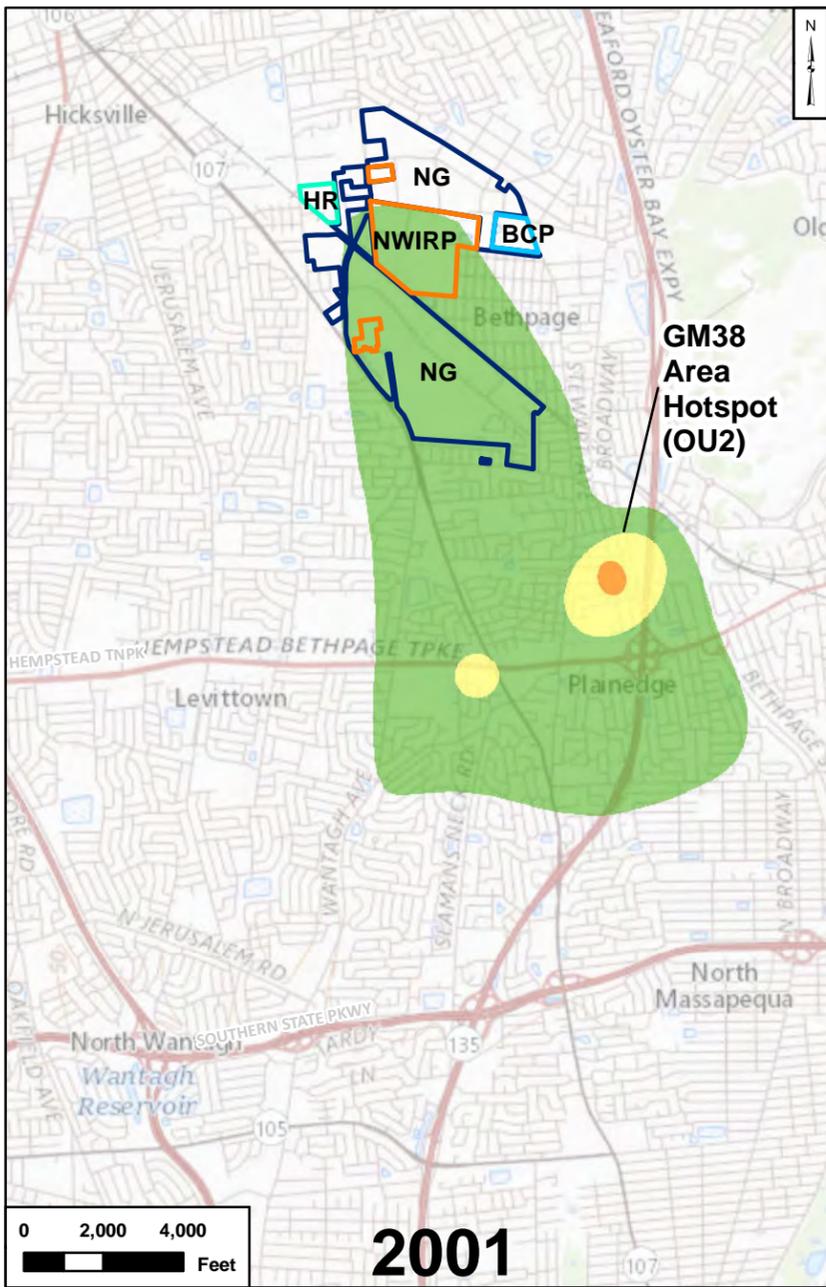


**2019 TCE CONCENTRATION  
 IN GROUNDWATER  
 (GREATER THAN 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

CTO	
N62470-16-D-9008-WE16	DATE
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CHECKED BY	DATE
BF	03/18/20
FIGURE NUMBER	
<b>3-4</b>	

3/18/2020  
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## TCE (0 to 300 feet bgs)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 DEP- Deep Eastern Plume (OU3)  
 HR- Hooker Ruco Superfund Site  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons  
 Industrial Reserve Plant Bethpage Facility

OU- Operable Unit  
 TCE- trichloroethene  
 µg/L- microgram per liter

Legend	
<span style="color: green;">■</span>	5 to 100 µg/L TCE
<span style="color: yellow;">■</span>	>100 to 1,000 µg/L TCE
<span style="color: orange;">■</span>	>1,000 µg/L TCE

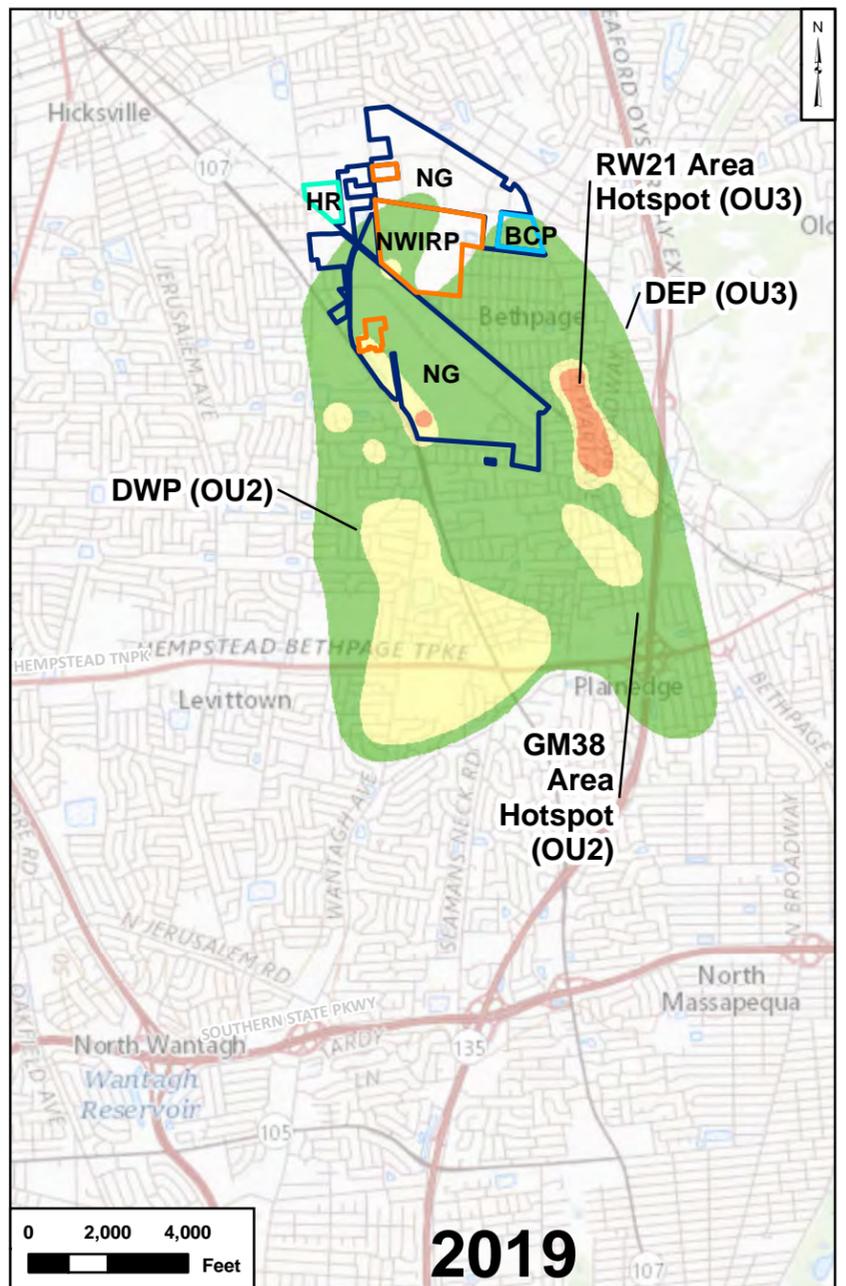
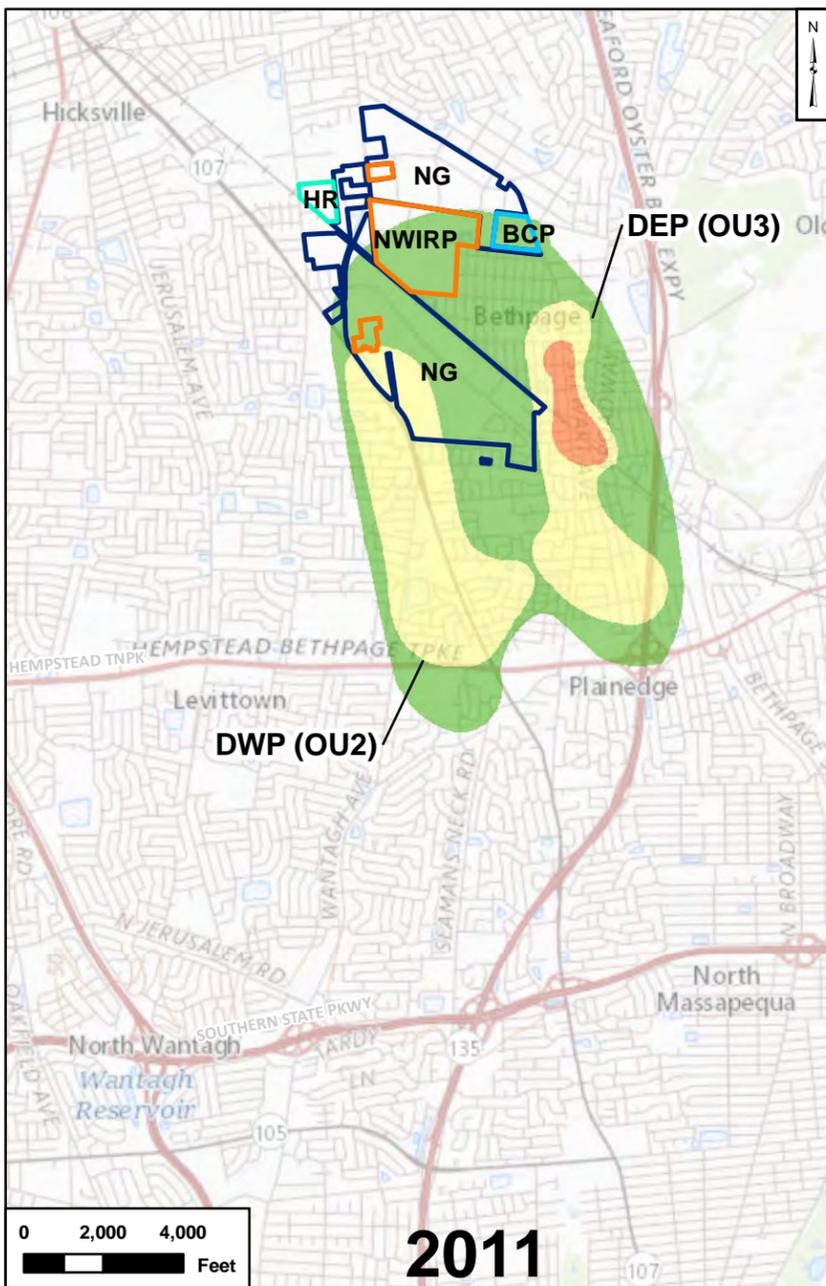
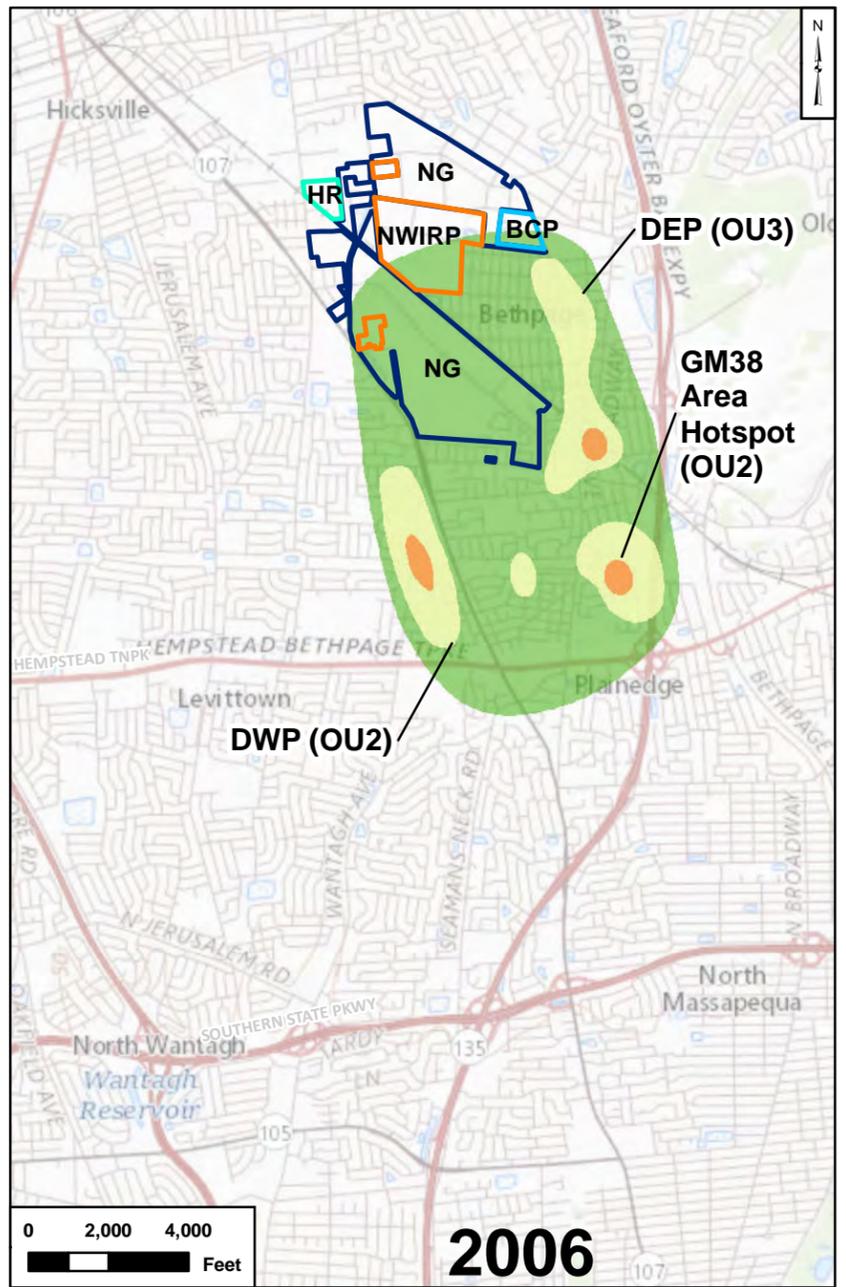
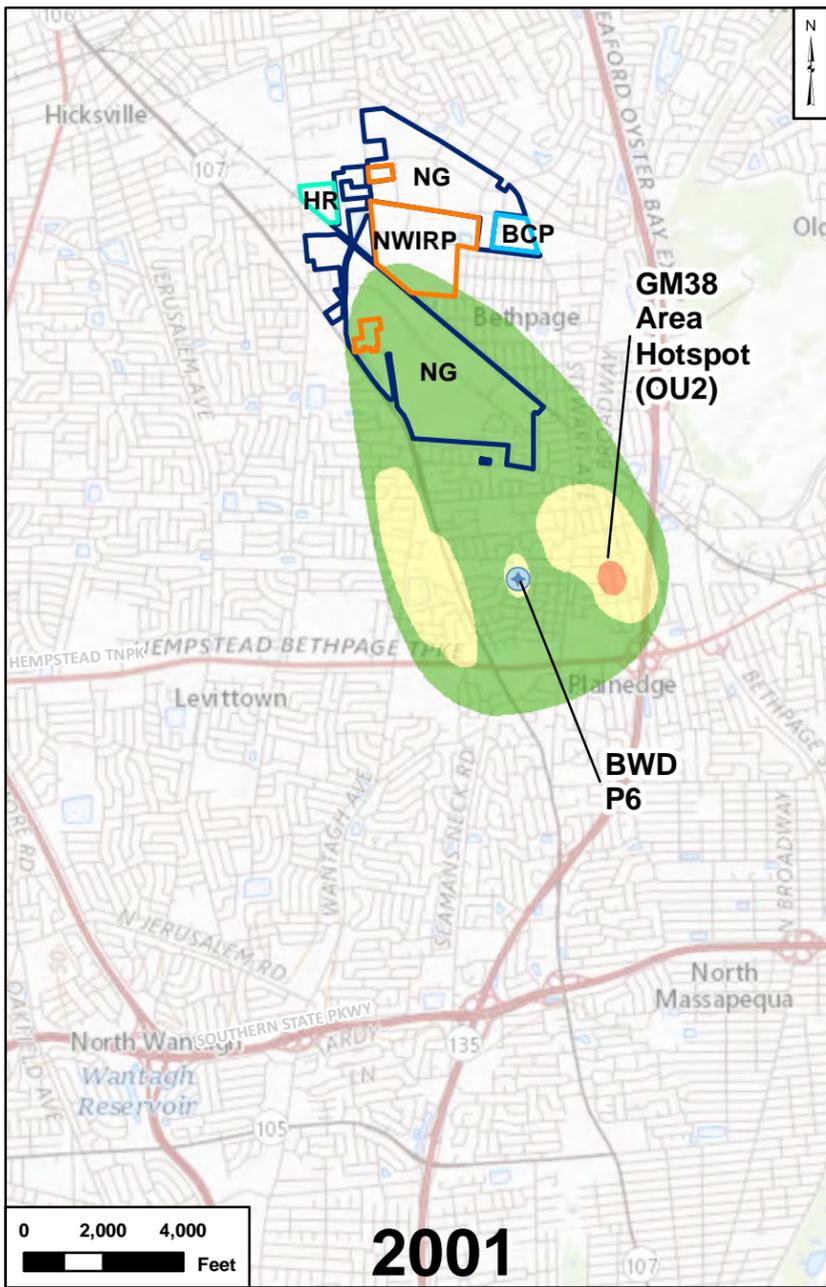
\*The Maximum Contaminant Level for TCE is 5 µg/L



2001, 2006, 2011, & 2019  
 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK

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FIGURE NUMBER	3-5

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## TCE (300 to 500 feet bgs)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- trichloroethene  
 µg/L- microgram per liter

Legend	
<span style="color: green;">■</span>	5 to 100 µg/L TCE
<span style="color: yellow;">■</span>	>100 to 1,000 µg/L TCE
<span style="color: orange;">■</span>	>1,000 µg/L TCE

\*The Maximum Contaminant Level for TCE is 5 µg/L

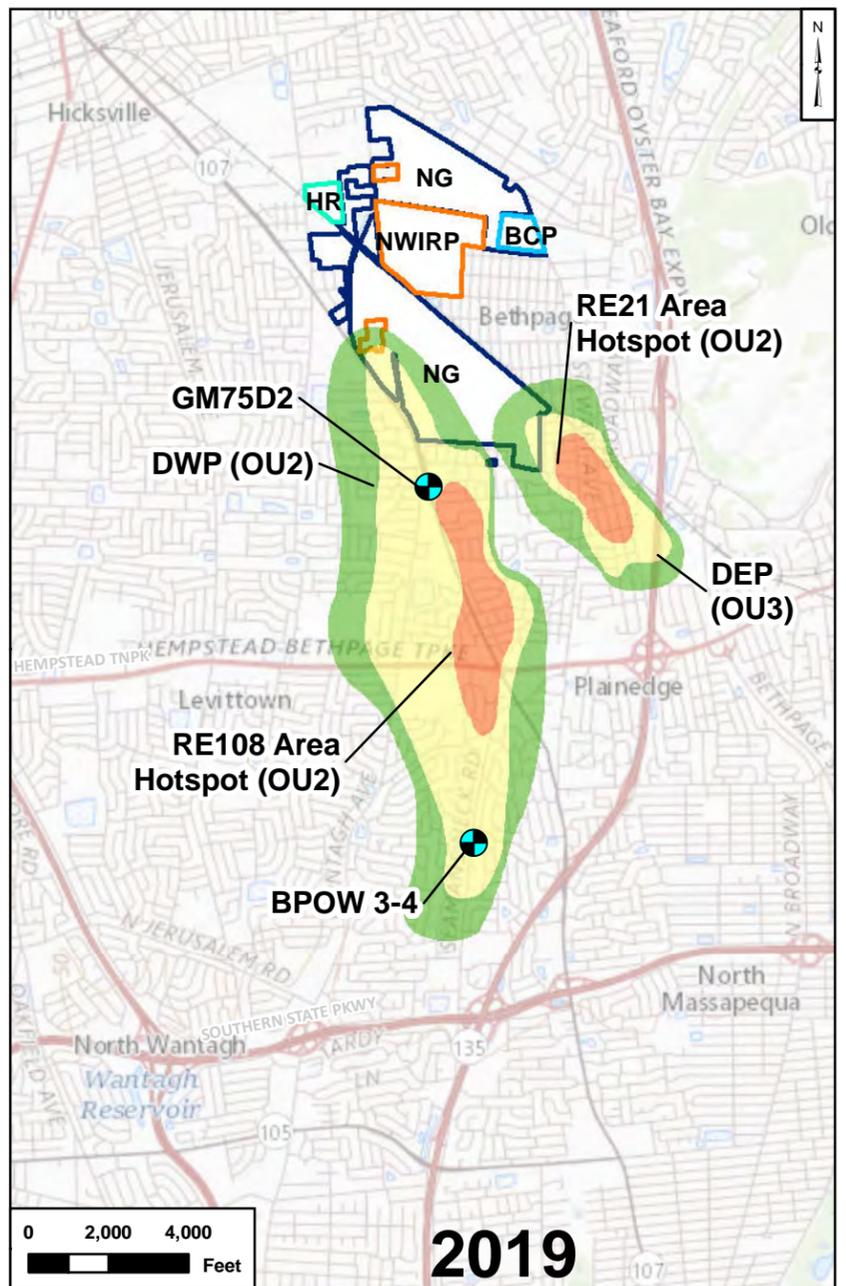
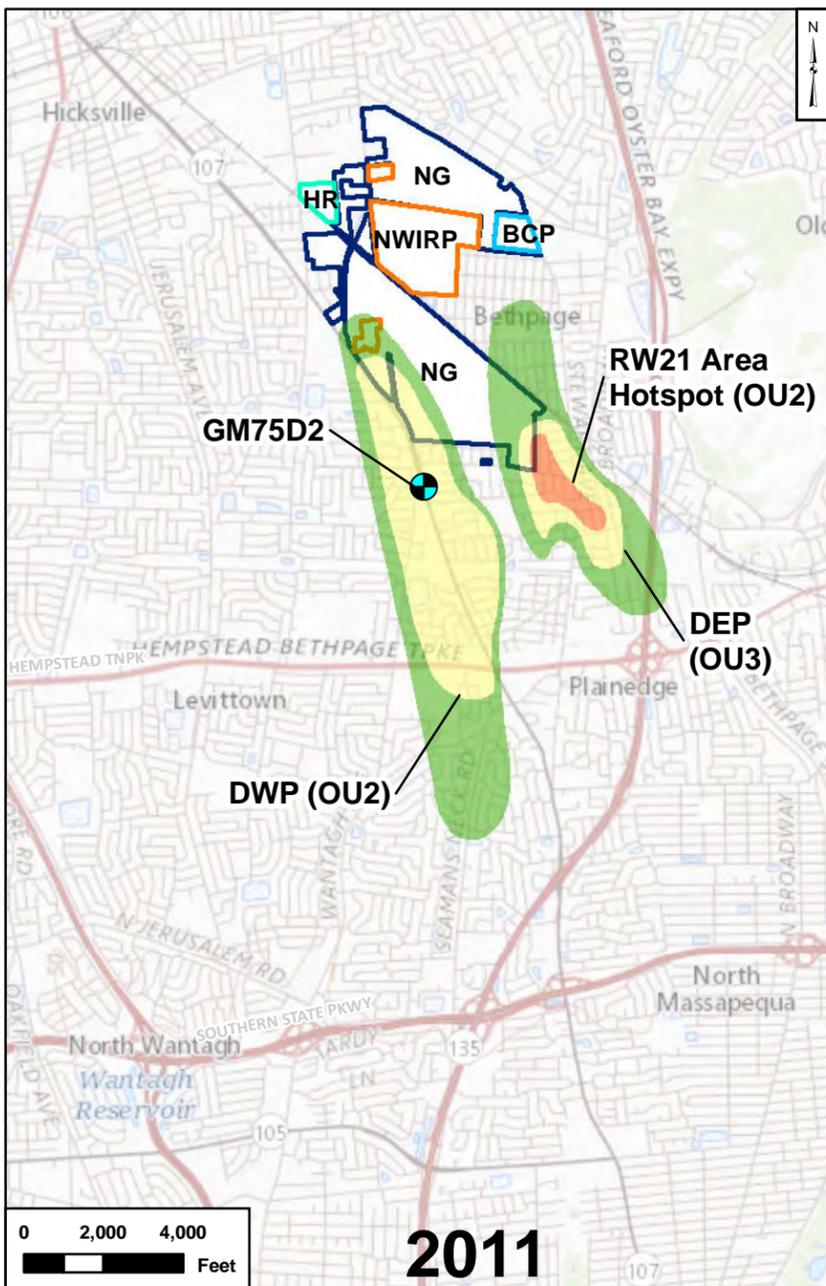
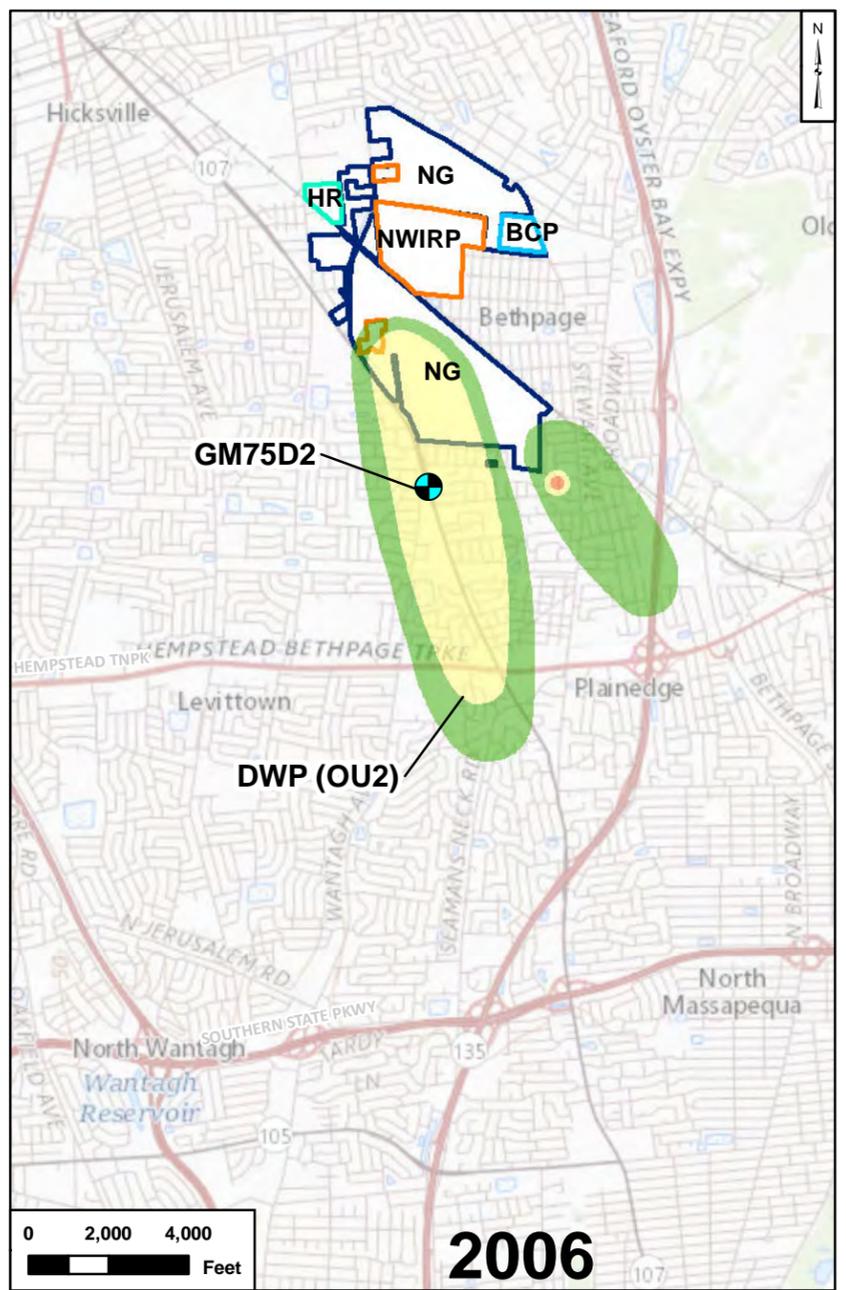
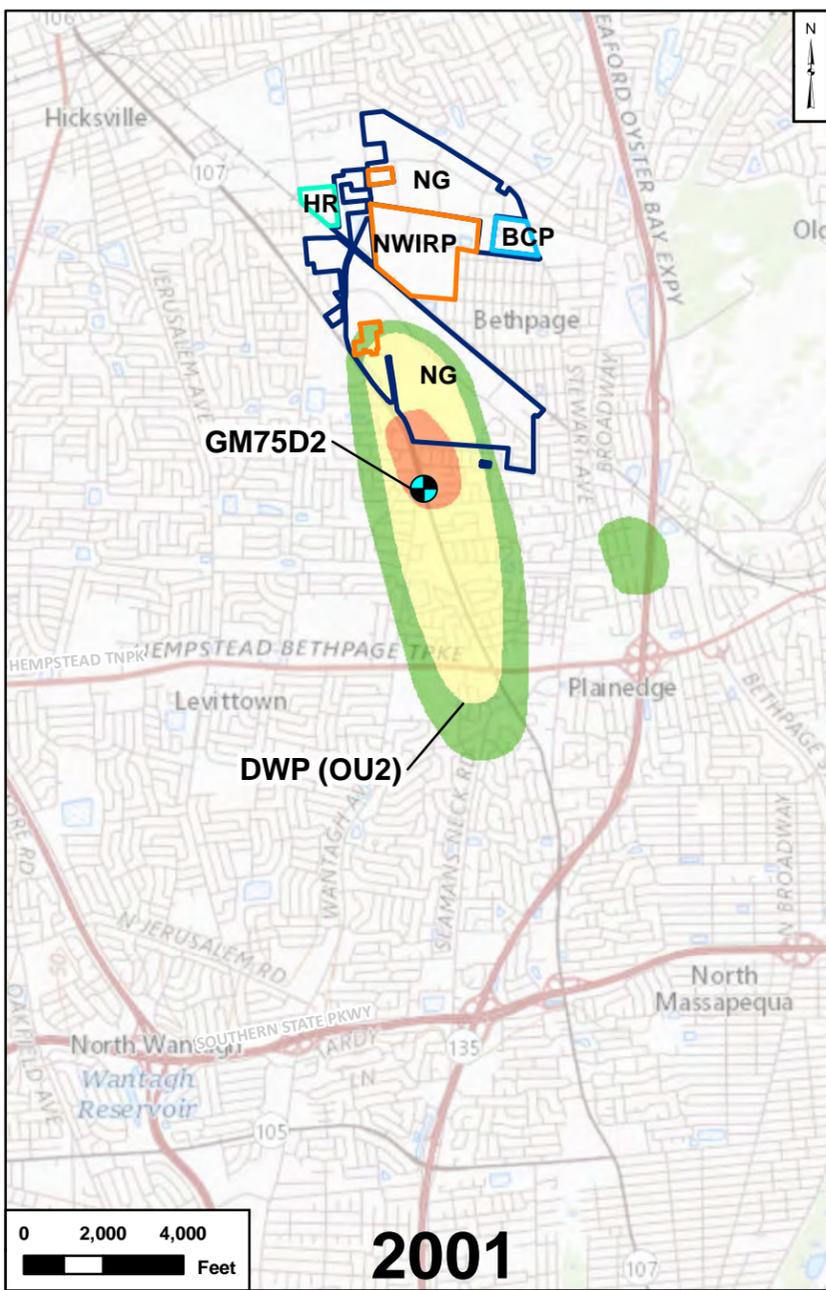


2001, 2006, 2011, & 2019  
 TCE CONCENTRATION  
 IN GROUNDWATER  
 (300 to 500 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK

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FIGURE NUMBER	
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## TCE (500 to 700 feet bgs)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 NG- Former Northrop Grumman Facility

NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- trichloroethene  
 µg/L- microgram per liter

Legend	
<span style="color: green;">■</span>	5 to 100 µg/L TCE
<span style="color: yellow;">■</span>	>100 to 1,000 µg/L TCE
<span style="color: orange;">■</span>	>1,000 µg/L TCE

\*The Maximum Contaminant Level for TCE is 5 µg/L

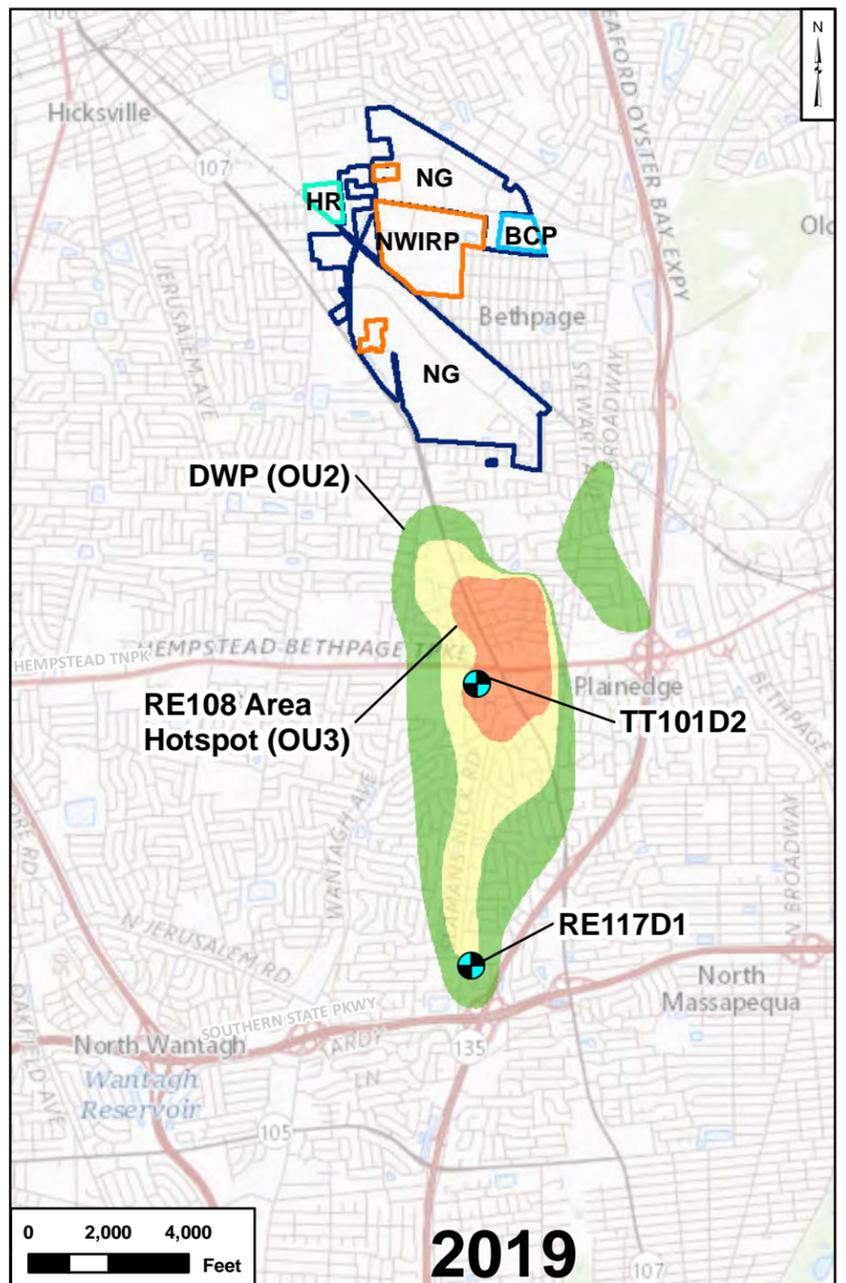
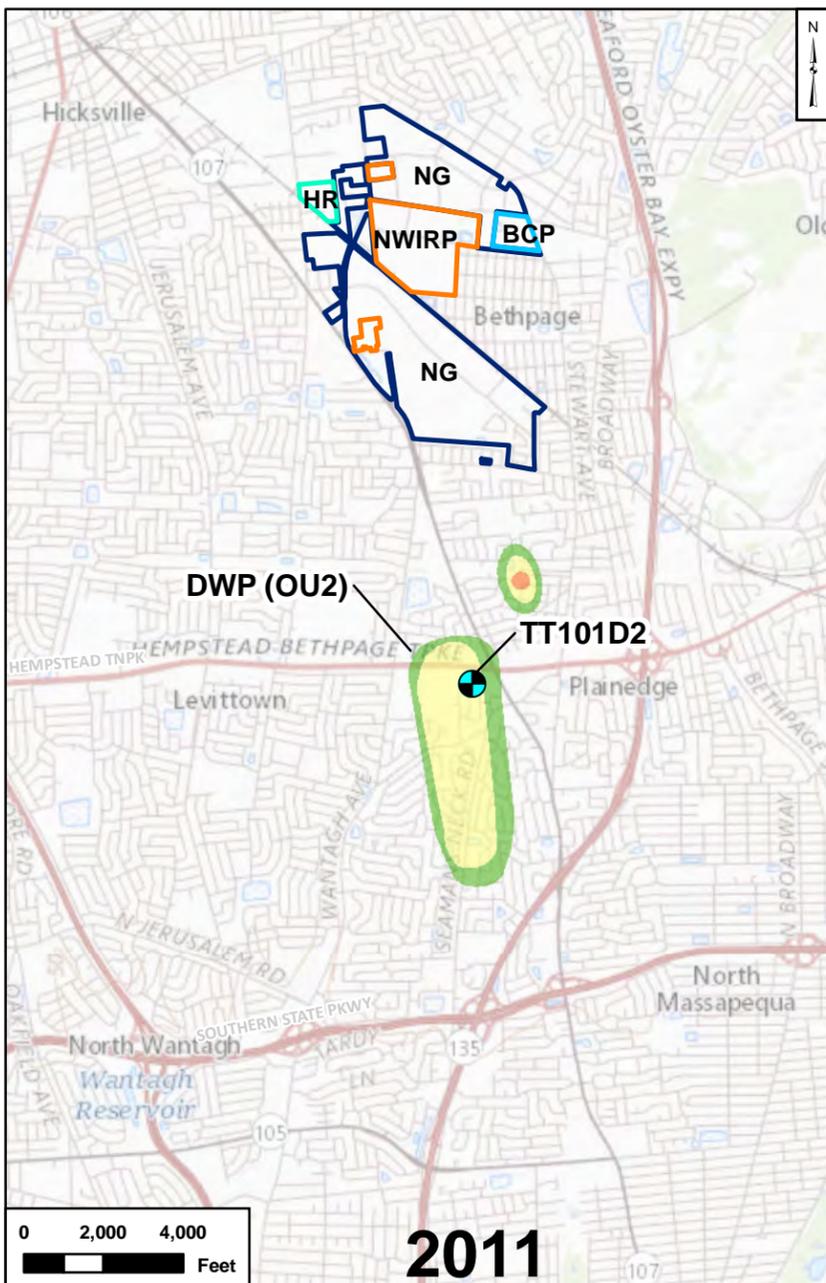
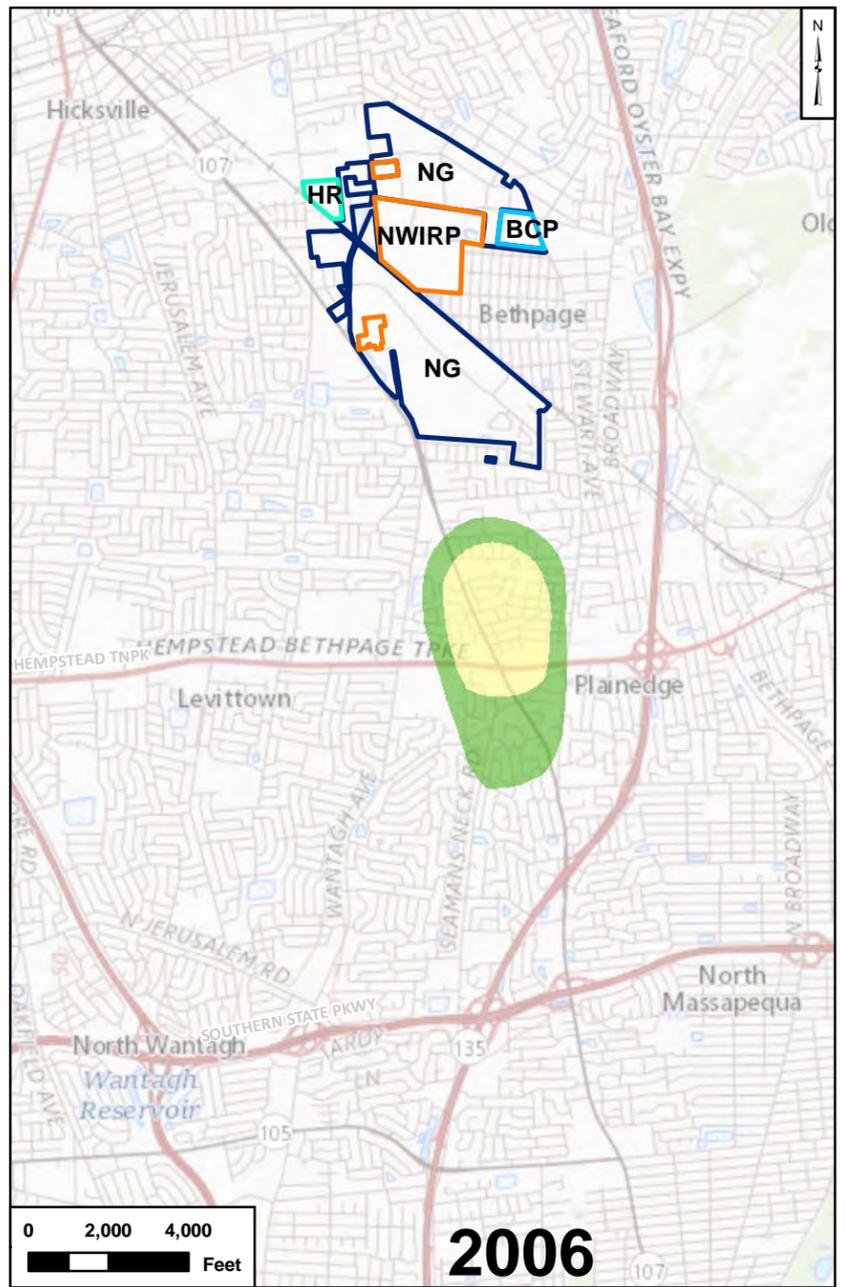
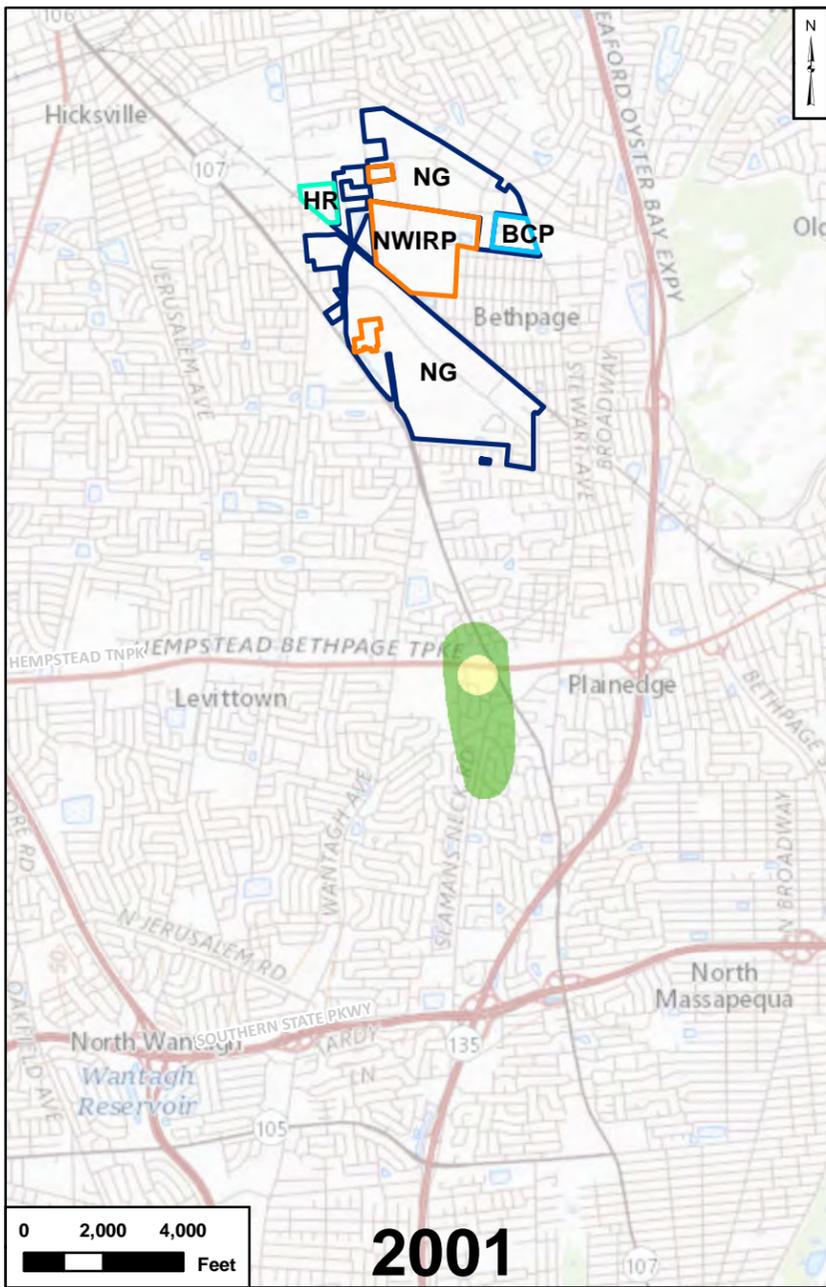


2001, 2006, 2011, & 2019  
 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK

CTO	
N62470-16-D-9008-WE16	DATE
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FIGURE NUMBER	
3-7	

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## TCE (Greater than 700 feet bgs)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 NG- Former Northrop Grumman Facility

NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- trichloroethene  
 µg/L- microgram per liter

Legend	
<span style="color: green;">■</span>	5 to 100 µg/L TCE
<span style="color: yellow;">■</span>	>100 to 1,000 µg/L TCE
<span style="color: orange;">■</span>	>1,000 µg/L TCE

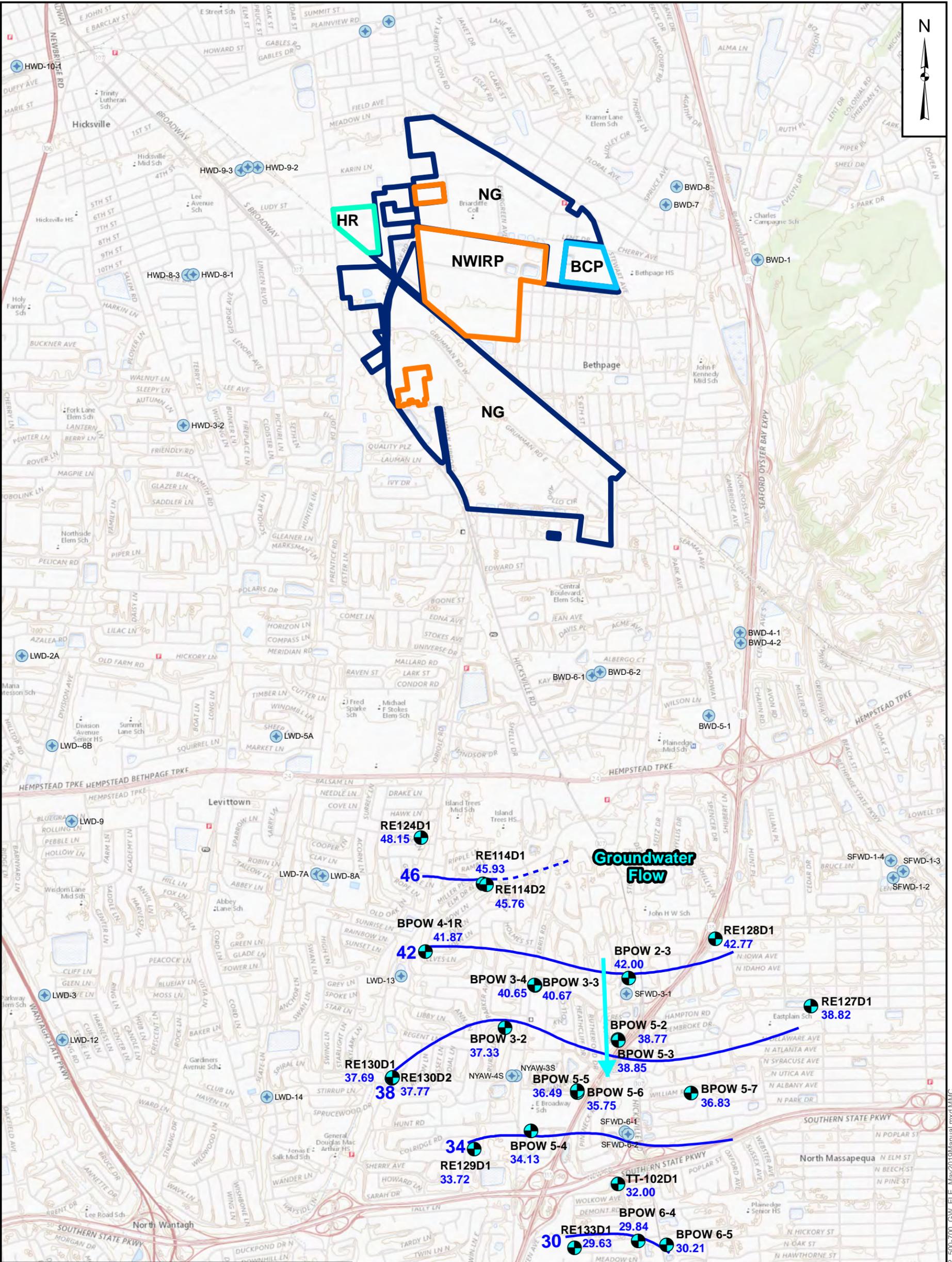
\*The Maximum Contaminant Level for TCE is 5 µg/L



2001, 2006, 2011, & 2019  
 TCE CONCENTRATION  
 IN GROUNDWATER  
 (GREATER THAN 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK

CTO	
N62470-16-D-9008-WE16	DATE
DRAWN BY MC	03/18/20
CHECKED BY BF	DATE 03/18/20
FIGURE NUMBER	
3-8	

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

**Groundwater Contours 500 to 700 feet bgs**

Groundwater Contour Manual Reading (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

28.12 Manual Reading

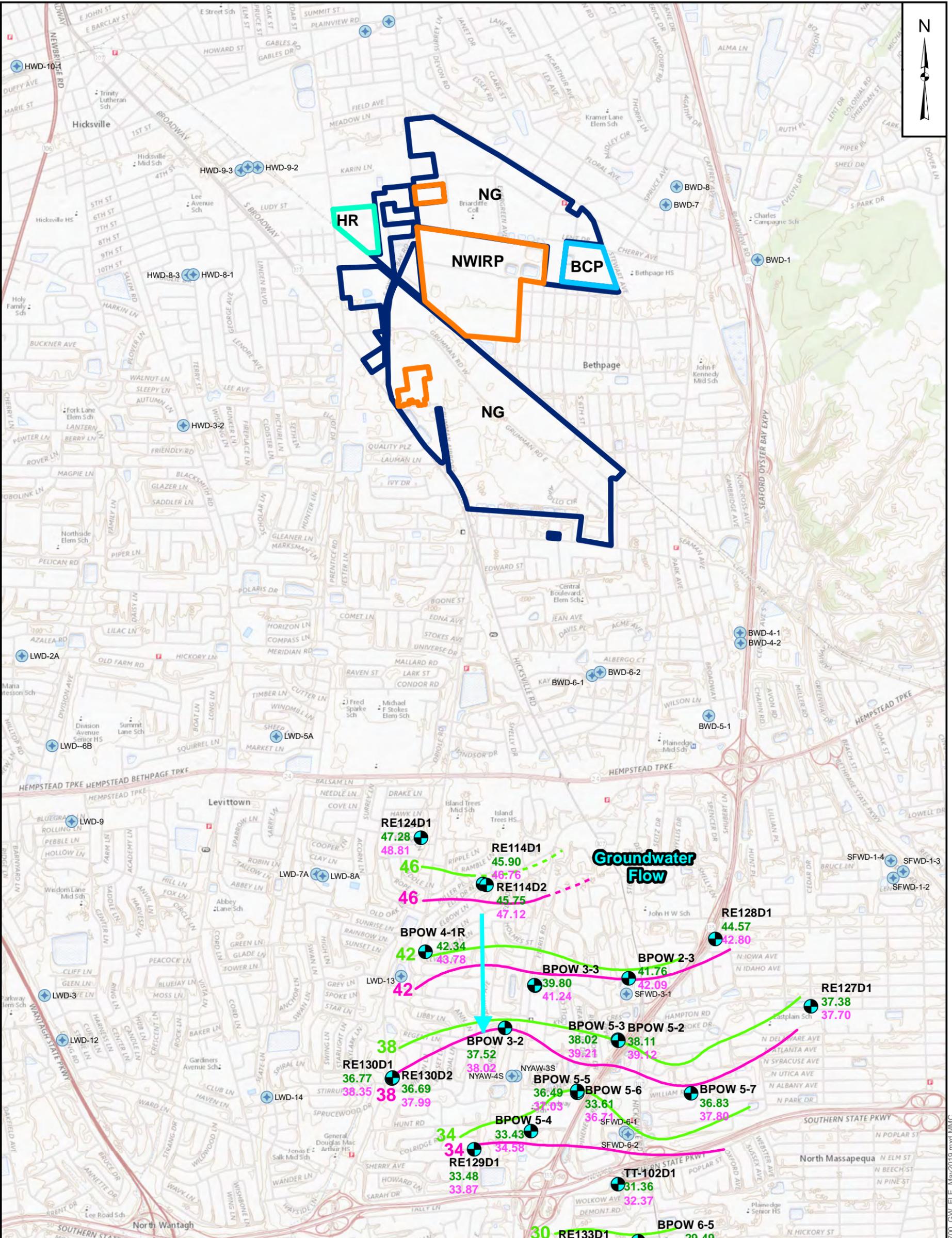


**MAY 2019 MANUAL WATER  
LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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FIGURE NUMBER	3-9

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

- 26.19 Low (Pump On)
- 29.92 High (Pump Off)

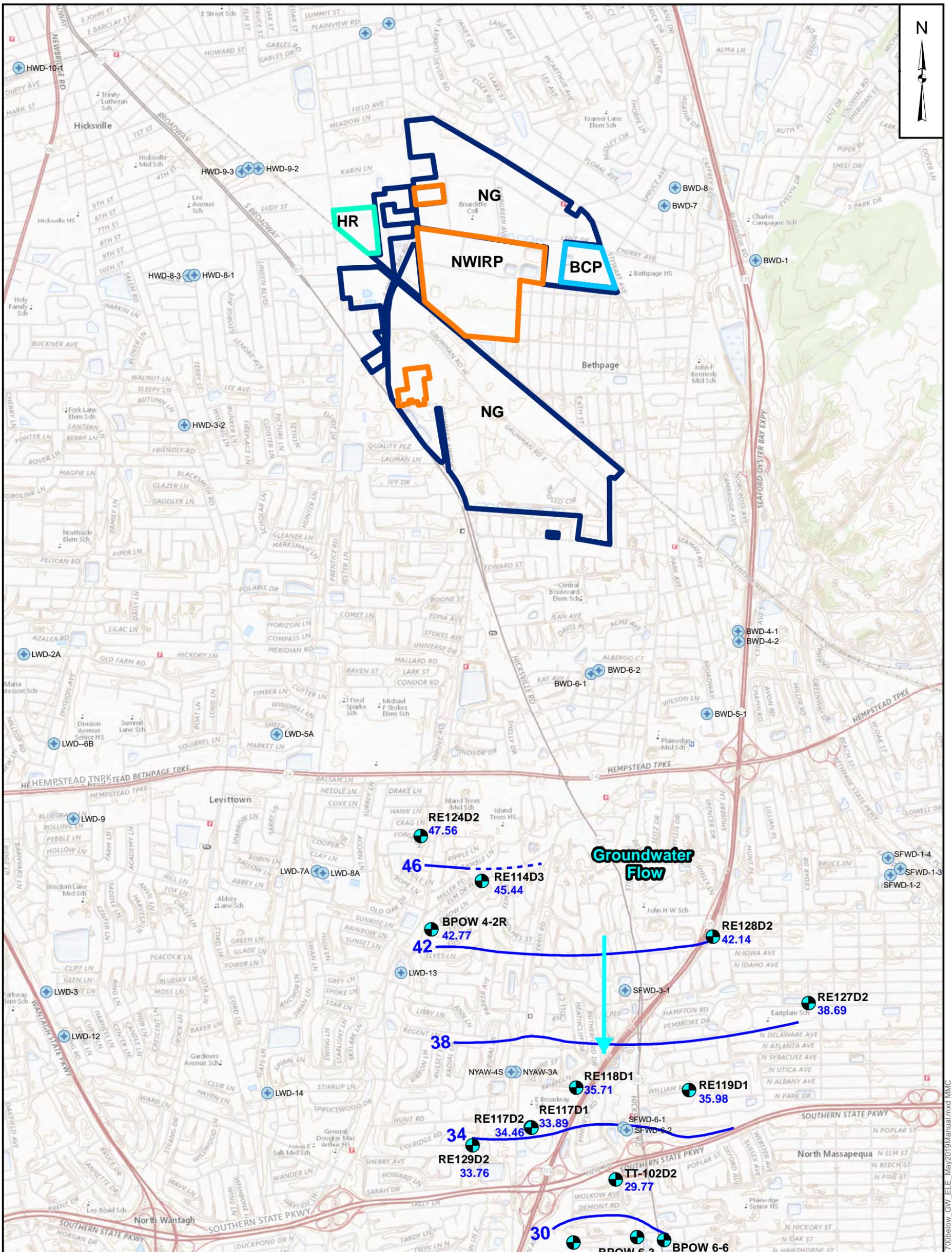


**MAY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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FIGURE NUMBER	3-10

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**Legend**

Monitoring Well (below 700 feet bgs)

Public Water Supply Well

**Groundwater Contours Greater than 700 feet bgs**

Groundwater Contour Manual Reading (feet msl)

**Notes:**

BCP- Bethpage Community Park (OU3)

bgs- below ground surface

BWD- Bethpage Water District

HR- Hooker Ruco Superfund Site

LWD-Levittown Water District

MSL- mean sea level

MWD-Massapequa Water District

NG- Former Northrop Grumman Facility

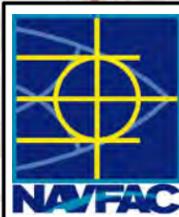
NWIRP- Former Naval Weapons

Industrial Reserve Plant Bethpage Facility

NYAW-New York American Water

SFWD-South Farmingdale Water District

28.12 Manual Reading



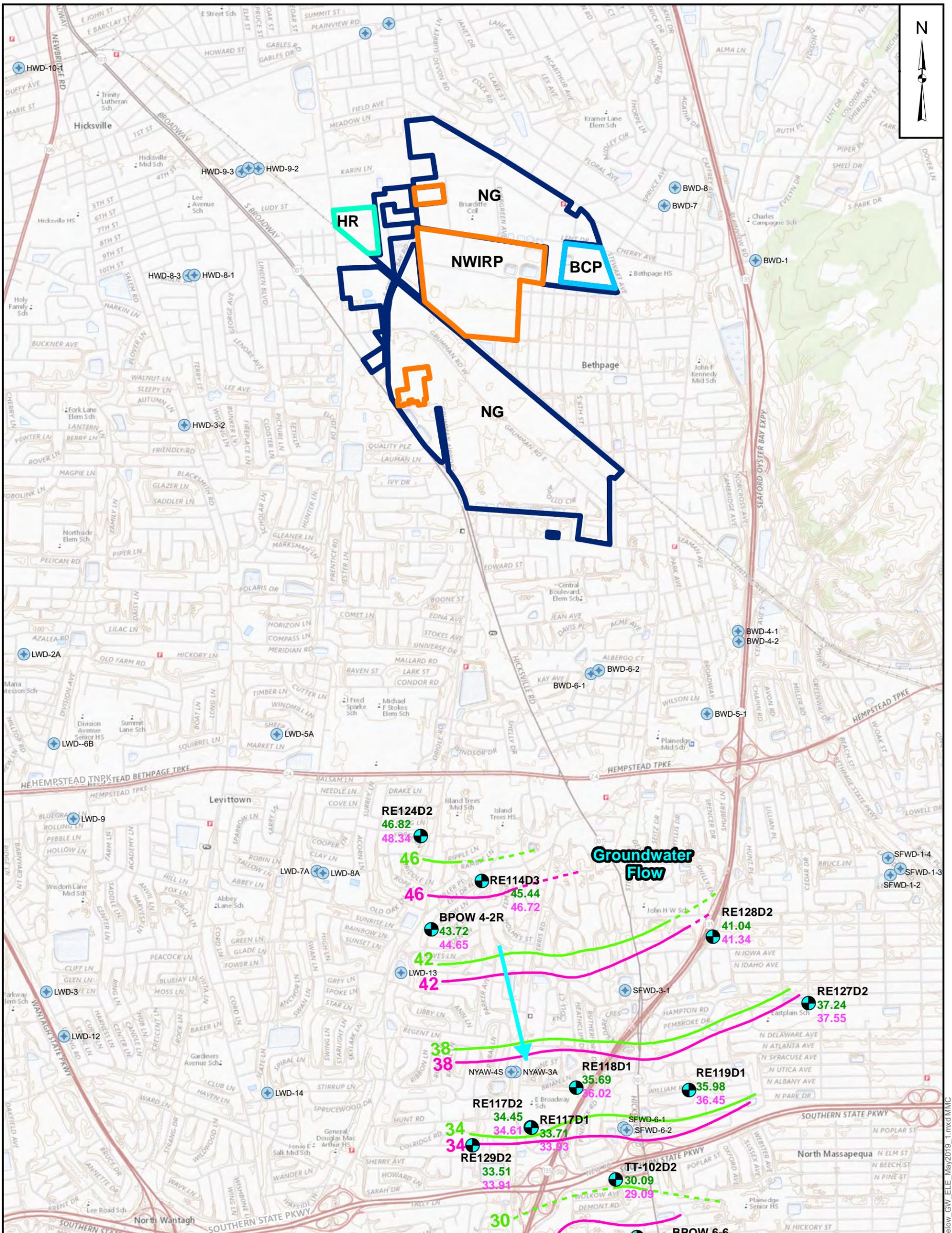
**MAY 2019 MANUAL WATER  
LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(BELOW 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**



CTO	112G08005-WE16
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FIGURE NUMBER	3-11

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**Legend**

- Monitoring Well (below 700 feet bgs)
- Public Water Supply Well

**Groundwater Contours Greater than 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

26.19 Low (Pump On)  
29.92 High (Pump Off)

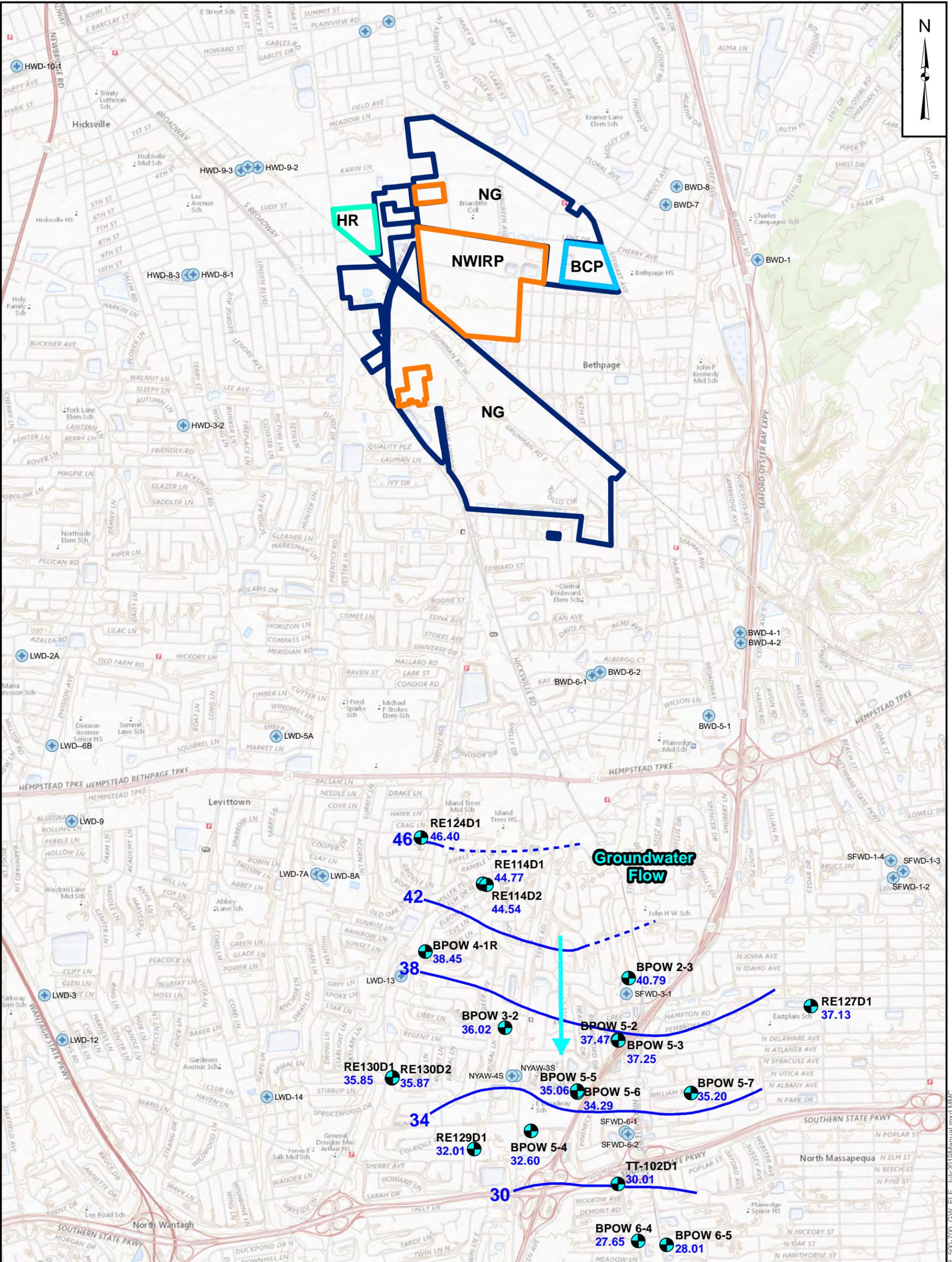


**MAY 2019 TRANSDUCER HIGH AND LOW WATER LEVEL READINGS**  
**GROUNDWATER POTENTIOMETRIC SURFACE MAP**  
**(BELOW 700 FEET BGS)**  
**NWIRP BETHPAGE, NEW YORK**



CTO	112G08005-WE16
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FIGURE NUMBER	3-12

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

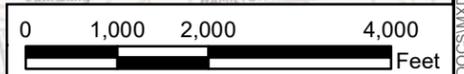
**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour Manual Reading (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

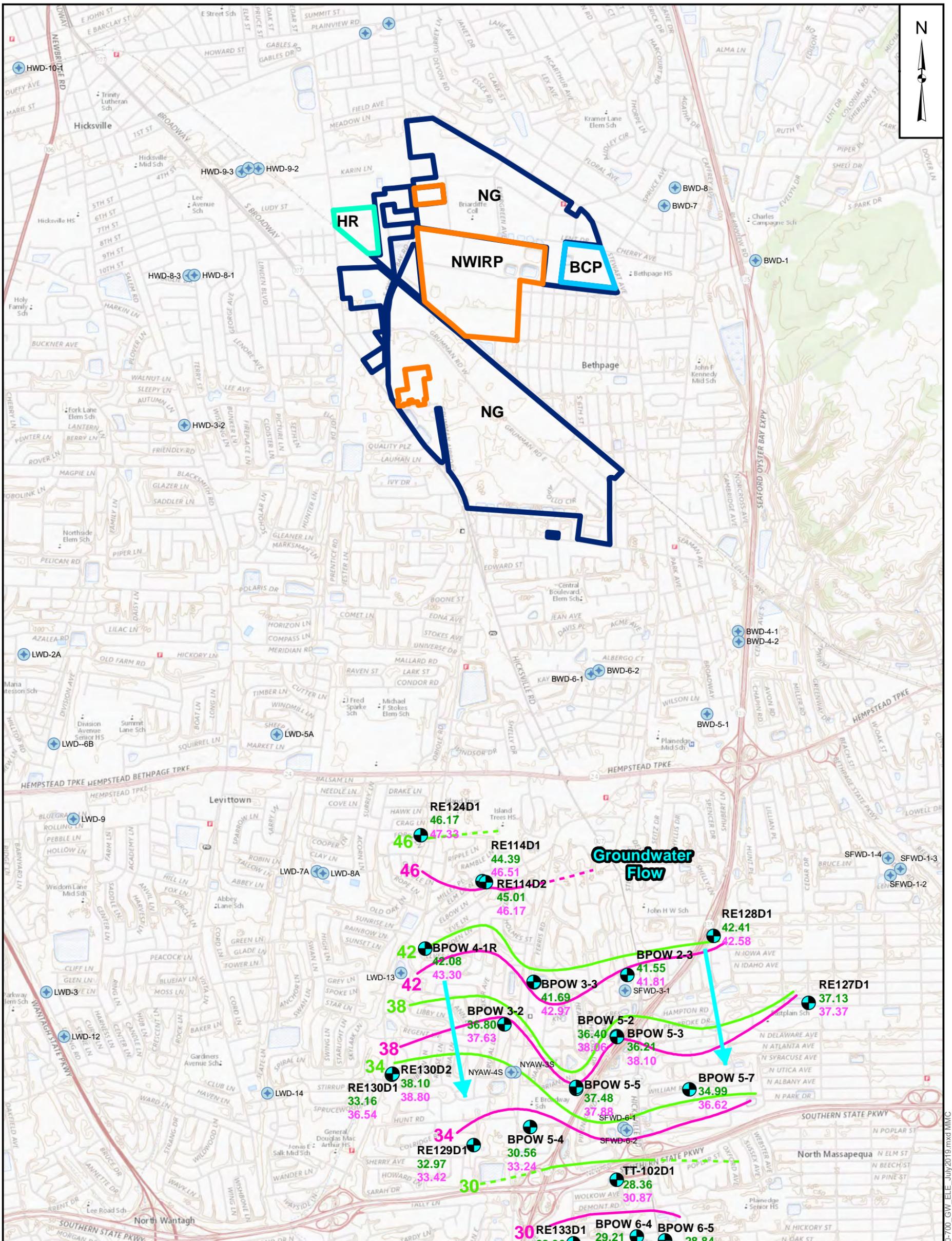
28.12 Manual Reading



**JULY 2019 MANUAL WATER  
LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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FIGURE NUMBER	3-13

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

26.19 Low (Pump On)  
29.92 High (Pump Off)



**JULY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

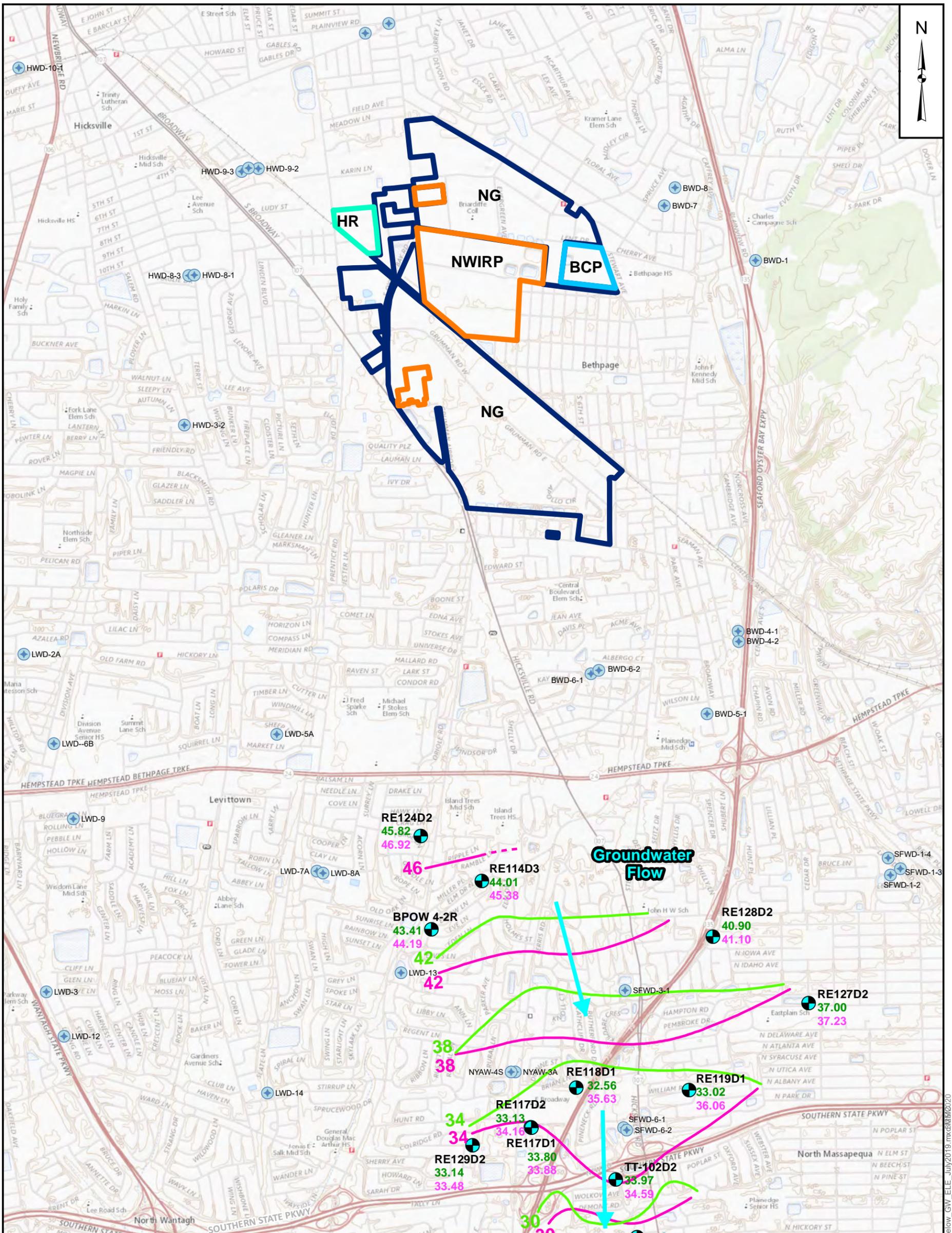
CTO 112G08005-WE16	
DRAWN BY	DATE 03/25/20
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FIGURE NUMBER <b>3-14</b>	

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**Legend**

- Monitoring Well (below 700 feet bgs)
- Public Water Supply Well

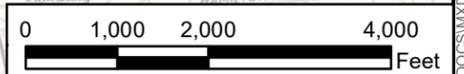
**Groundwater Contours Greater than 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

26.19 Low (Pump On)  
29.92 High (Pump Off)

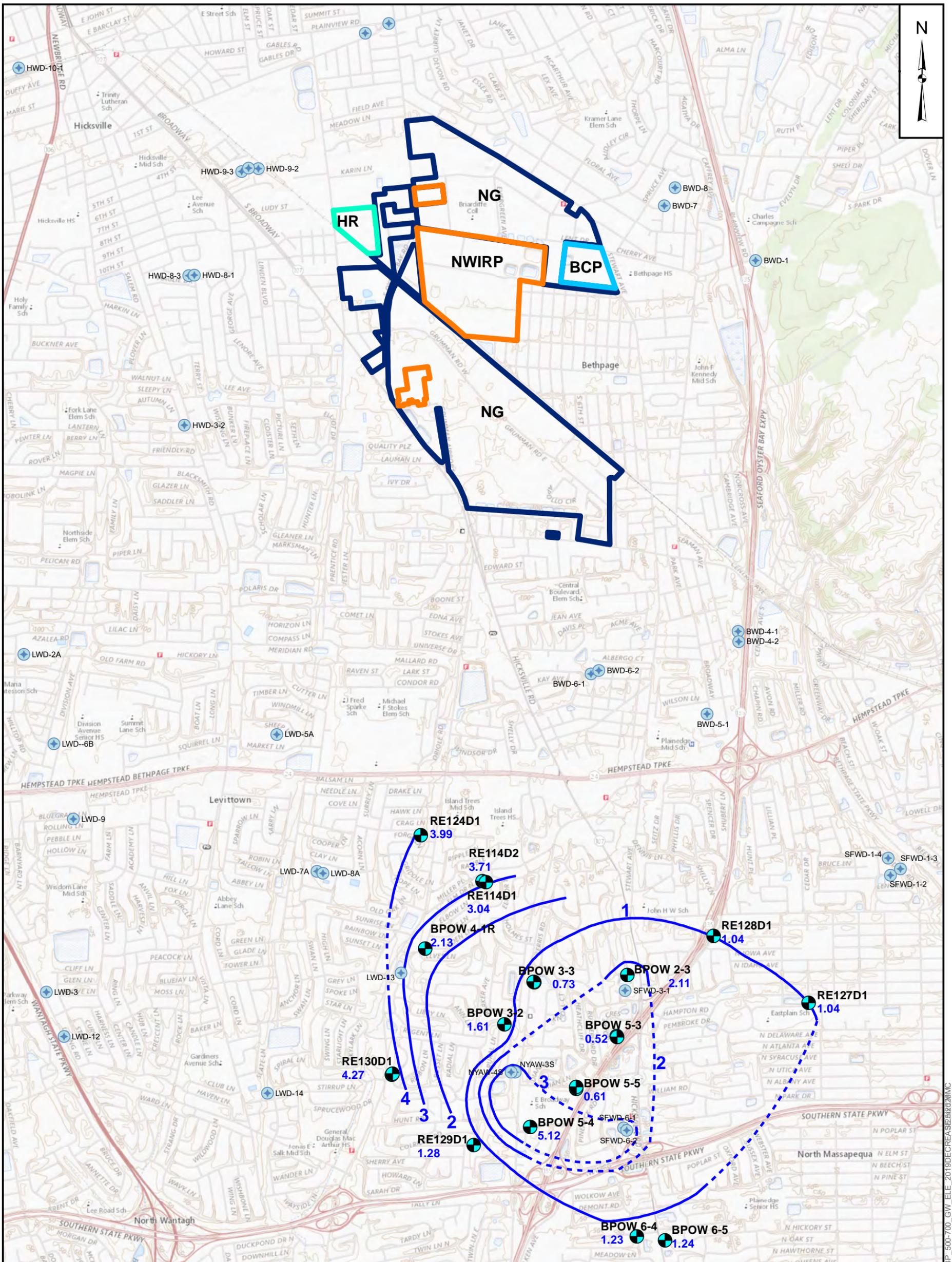


**JULY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(BELOW 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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CHECKED BY	DATE
FIGURE NUMBER	3-16

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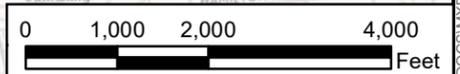
**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well
- Groundwater Contour (feet msl)
- Groundwater Contour Inferred (feet msl)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 HR- Hooker Ruco Superfund Site  
 LWD-Levittown Water District  
 MSL- mean sea level  
 MWD-Massapequa Water District  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW-New York American Water  
 SFWD-South Farmingdale Water District



**POTENTIOMETRIC SURFACE MAP  
 DECREASE FROM  
 5/15/19 TO 10/1/19  
 (500 TO 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**



CTO	112G08005-WE16
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FIGURE NUMBER	3-17

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**Legend**

- Other Nassau County Public Water Supply Well
- Public Water Supply with treatment in place (Pre- Public Water Supply Contingency Plan)
- Public Water Supply identified in the Public Water Supply Contingency Plan with treatment in place
- Public Water Supply with potential future impact
- Groundwater Flow
- Long Island Groundwater Divide
- Potential Groundwater Flow
- 2019 TCE 5 µg/L
- Mile Radius
- Water Districts 2014
- 1997 NWIRP Bethpage Property
- 1997 Northrop Grumman Property

**Notes:**  
 µg/L- microgram per liter  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 TCE- Trichloroethene

<sup>1</sup>From Como, et.al, 2015

Suffolk County Public Water Supply Wells not shown

0 1 2 4 Miles

Atlantic Ocean

2013 ESRI Aerial Imagery

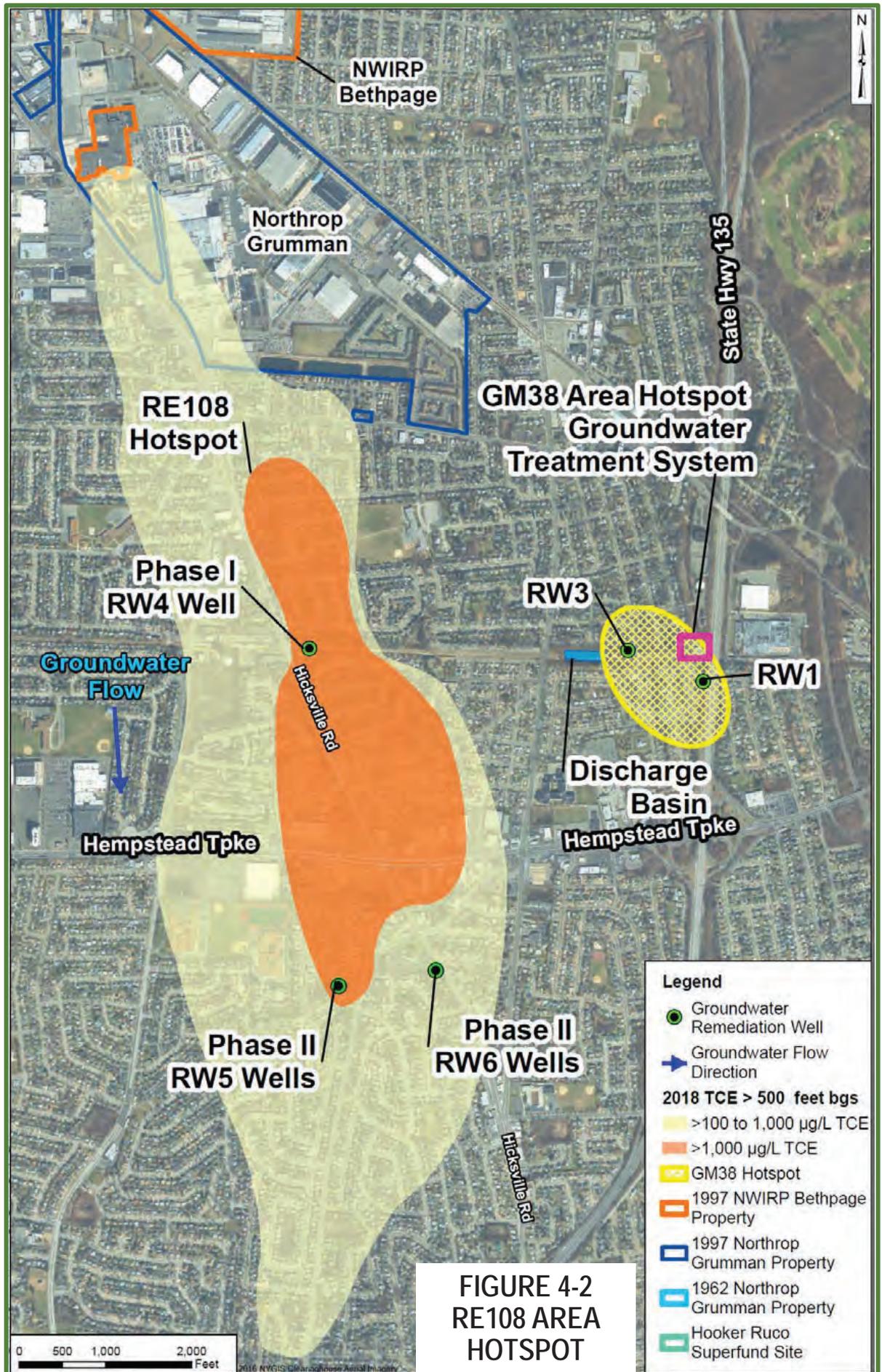
**NAVFAC**  
 Naval Facilities Engineering Command

**10-MILE RADIUS  
 MIGRATION MAP  
 NASSAU COUNTY  
 WATER DISTRICTS  
 NASSAU COUNTY, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	4-1	REV	DATE
			4/16/2019

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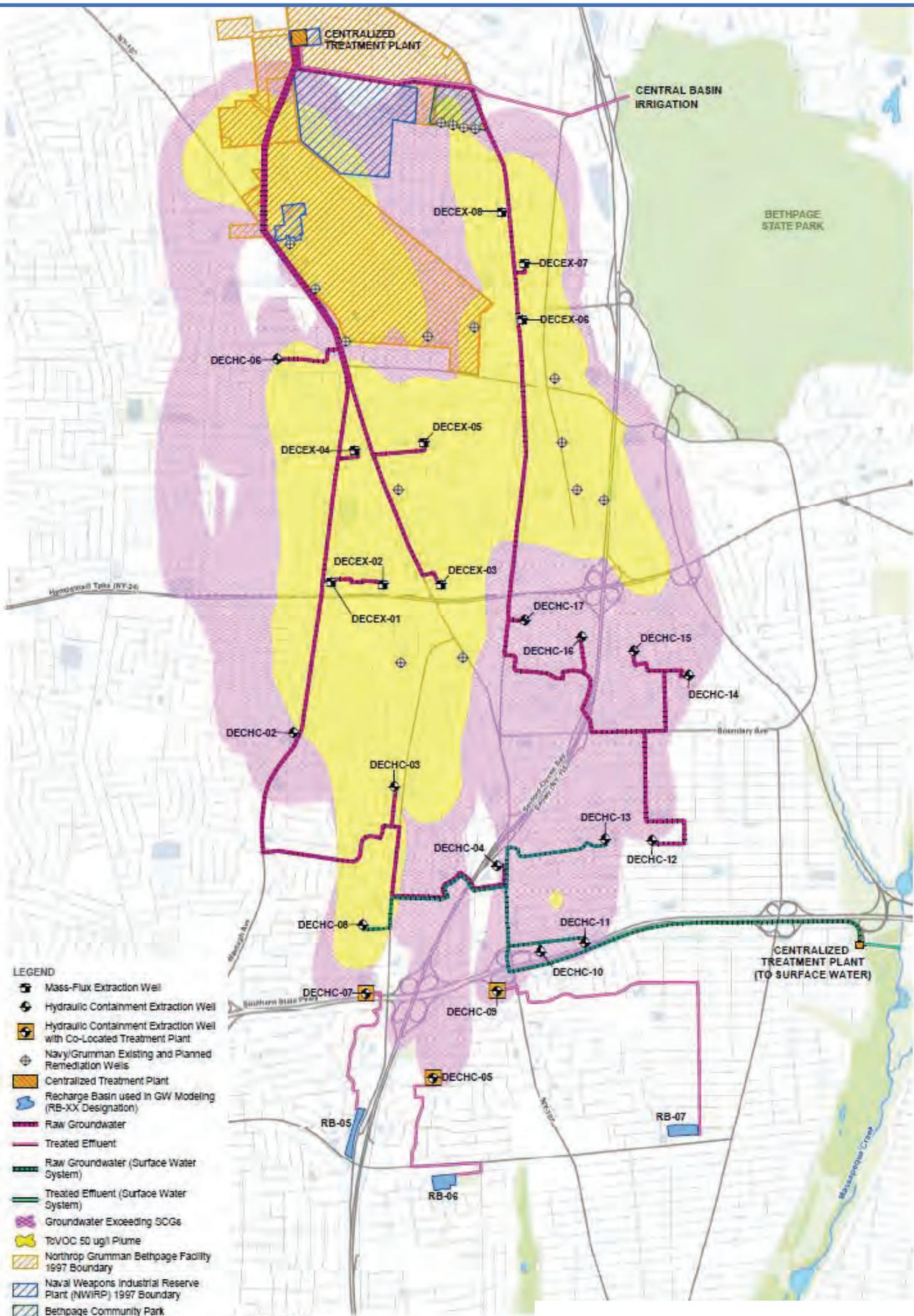
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**FIGURE 4-2  
RE108 AREA  
HOTSPOT**

0 500 1,000 2,000 Feet

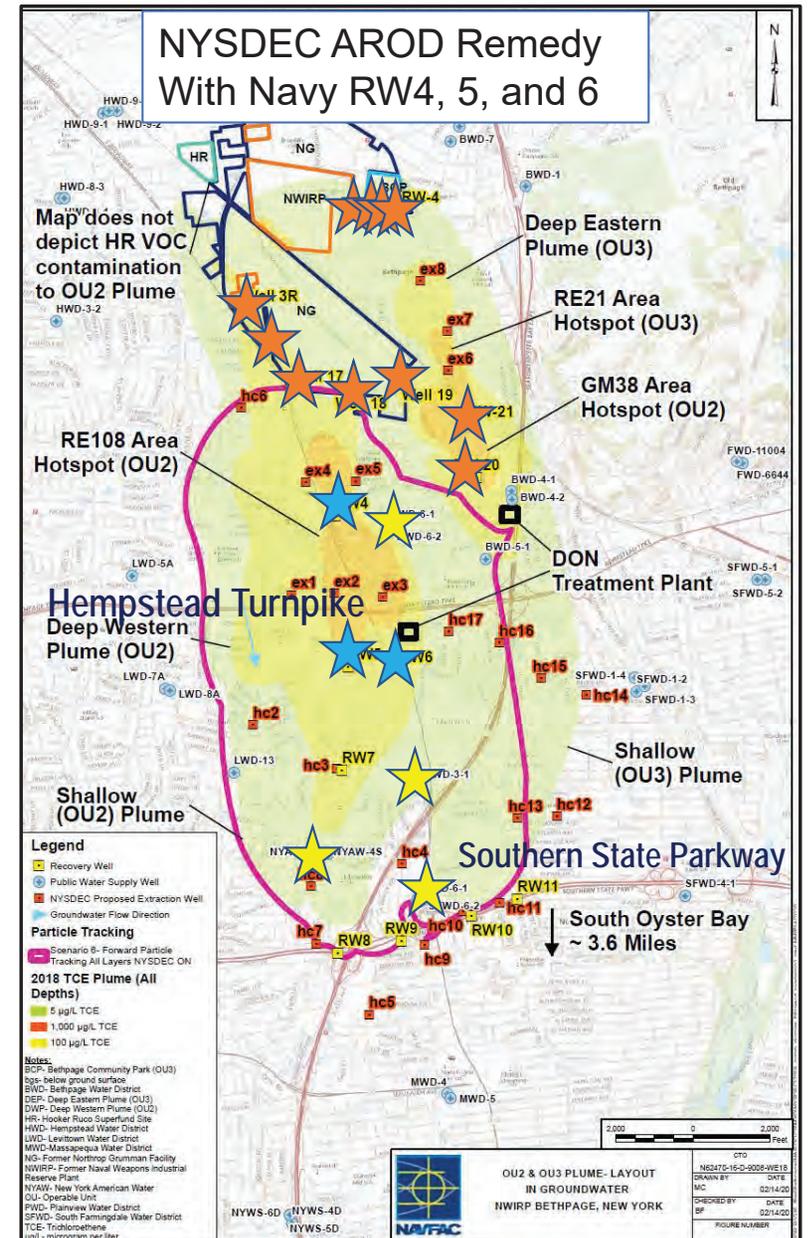
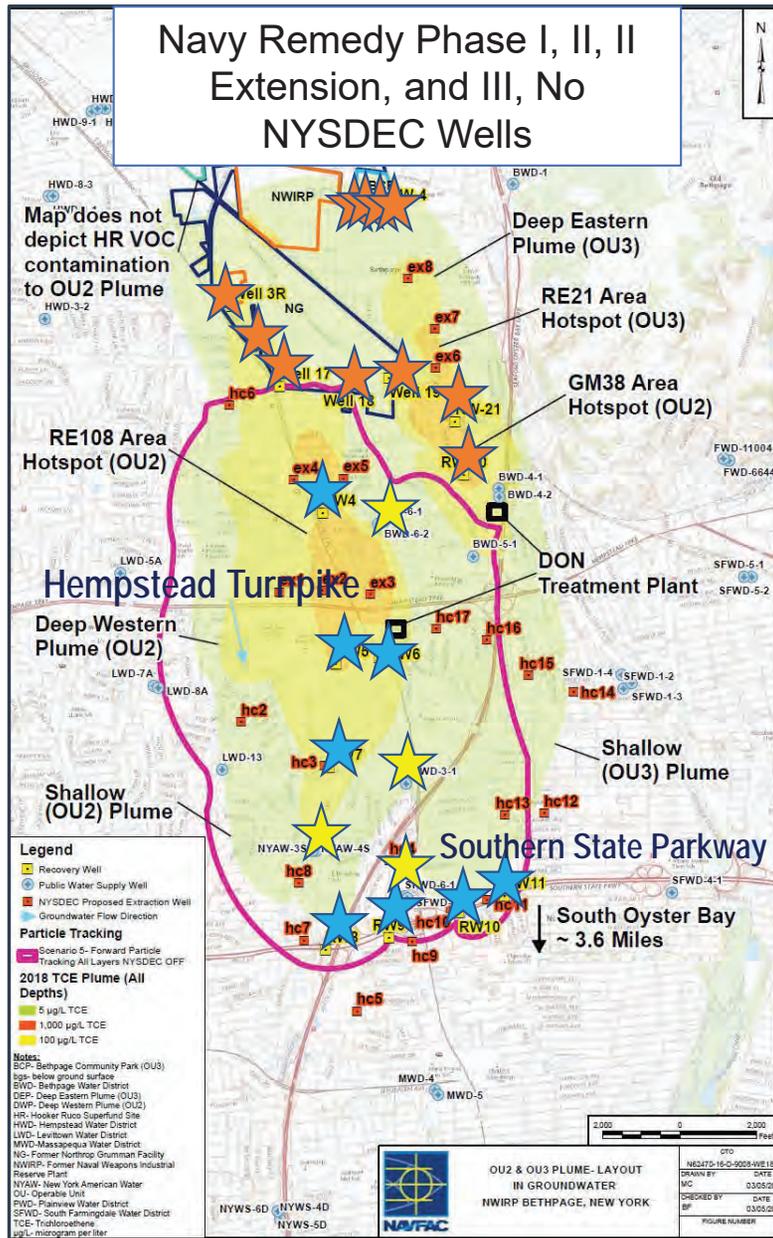
2018 NYGIS © Marsipposse Aerial Imagery



**FIGURE 5-1  
 NYSDEC SELECTED REMEDY  
 ALTERNATIVE 5B**

**FIGURE 5-2  
NAVY REMEDY VERSUS NYSDEC  
AROD OU2 PLUME CAPTURE  
COMPARISON**

-  Public Water Supply Well
-  Navy Recovery Well (Planned and Potential)
-  Northrop Grumman Recovery Well (Planned and Potential)



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## APPENDICES

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APPENDIX A  
CHEMICAL DATA TABLES  
(Provided on CD only)

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**2019 Trichloroethene (TCE) Concentrations  
Groundwater Locations  
Former NWIRP Bethpage, New York  
Page 1 of 13**

LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
B24MW-2	4	7/18/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
B24MW-3	1.3	7/16/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
B30MW-1	ND	7/17/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-4-1	8.9	7/11/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-4-2	37	7/11/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-4-3	ND	7/11/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-6-1	ND	7/15/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-6-2	ND	7/16/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BCPMW-7-1	ND	7/10/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
BPOW-1-1	0.8	10/16/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-13D	17.6	5/13/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-15I	3.9	10/23/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-17D	ND	5/2/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-17I	ND	5/2/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-18D	0.94	4/24/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-18I	ND	10/4/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-20D	0.55	4/25/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-20I	0.68	4/25/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-21D	1.2	4/24/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-21I	ND	4/30/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-21S	ND	4/17/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-36D	ND	5/21/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-37D	10.7	5/3/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-39DA	1.6	10/9/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-74I	0.76	11/18/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED

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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
GM-78I	0.69	4/22/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-78S	ND	4/23/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-79D	20.5	5/7/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-79I	ND	10/10/2019	0-300	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
HN-24IR	7.7	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
HN-24S	0.38	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
HN-27I	ND	6/8/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
HN-29D	1.3	3/10/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
HN-29IR	ND	6/8/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
HN-40I	1.1	4/15/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
HN-40S	ND	4/15/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
HN-42I	ND	4/12/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
HN-42S	ND	4/12/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
MW01	2.4	12/11/2018	0-300	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
MW02	4.6	12/11/2018	0-300	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
MW03	ND	3/15/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-63D1	3	4/24/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-72D1	ND	10/14/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-72D2	8	4/25/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-73D2	1.3	10/14/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-75D2	0.6	4/25/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-77D2	11	4/24/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-85D2	7.4	10/15/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-86D1	2	4/25/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-85I	2.58	11/12/2019	0-300	GHD, 2019. Quarterly Report – Fourth Quarter 2018 (October through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018

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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
MW-86D2	75	4/25/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-89D2	7	4/23/2019	0-300	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-109-3	270	2/4/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-200-1	ND	7/8/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-201-1	0.69	7/8/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-202-1	ND	7/10/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-203-1	2.3	7/9/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-208-1	9.4	7/9/2019	0-300	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
MW-301D	ND	6/5/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-301I	ND	6/5/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-301S	0.91	3/13/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-302D	5.6	3/11/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-302I1	3.8	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-302I2	3.6	6/7/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-302S	0.66	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-303D	1.6	3/13/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-303I1	6.4	6/7/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-303I2	2.3	6/10/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-303S	ND	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-304D	ND	6/4/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-304I1	ND	6/4/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-304I2	ND	6/4/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-304S	ND	6/4/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-305D	530	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-305I	1200	3/13/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED

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MW-305S	ND	6/6/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-306D	7.2	3/11/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-306I	2.7	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-306S	0.69	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-307D	0.89	6/4/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-307I	0.94	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-307S	ND	6/7/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-308D	0.45	12/6/2018	0-300	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
MW-308I	ND	6/9/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-308S	ND	6/9/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-309D	0.56	6/5/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-309I	ND	3/13/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-309S	7.5	3/13/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-310S	ND	6/9/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-311I	1.3	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-311S	ND	6/9/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-312I	ND	3/15/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-312S	0.9	6/7/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-313S	ND	6/5/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-314I	ND	3/14/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
MW-314S	ND	6/5/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
N-10624	0.83	5/1/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
N-10627	ND	5/1/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
N-10631	0.78	5/1/2019	0-300	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
RE132-D1	140	9/11/2019	0-300	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED

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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
TTMW2021	2.7	6/10/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
TTMW202S	ND	6/10/2019	0-300	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW203D	13.7	12/7/2019	0-300	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW203I	ND	6/7/2019	0-300	Tetra Tech, 2018 Preliminary Assessment/Site Inspection (PA/SI) Report for Volatile Organic Compounds (VOCs) and 1,4-Dioxane, Basewide, Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Bethpage, New York; NOT YET PUBLISHED
VPB172	5.8	4/4/2019	0-300	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB174	ND	2/5/2019	0-300	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB176	30	5/30/2019	0-300	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB201	76.3	2/19/2019	0-300	Tetra Tech, 2019. Vertical Profile Boring VPB-201, March 2019, Analytical Data NOT YET PUBLISHED
VPB202	7	5/7/2019	0-300	Tetra Tech, 2019. Vertical Profile Boring VPB-202, May 2019, Analytical Data NOT YET PUBLISHED
VPB203	46.4	7/23/2019	0-300	Tetra Tech, 2019. Vertical Profile Boring VPB-203, July 2019, Analytical Data NOT YET PUBLISHED
BPOW-1-2	0.38	10/16/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-1-3	ND	10/16/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-1-4	ND	10/18/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-2-1	ND	10/21/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-2-2	ND	10/21/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-3-1	ND	10/22/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW 5-1	ND	6/14/2019	300-500	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
GM-15D	0.35	10/23/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-34D	186	5/23/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-37D2	2.5	5/3/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-38D	118	4/29/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-38D2	21.9	4/29/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-39DB	43.3	10/9/2019	300-500	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-70D2	6.6	5/3/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-71D2	10.9	5/6/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED

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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
GM-73D	15.4	4/22/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-74D	2.8	4/23/2019	300-500	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
Hicksville WD 9-2	0.57	12/10/2018	300-500	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
Hicksville WD 9-3	44.3	12/10/2018	300-500	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
MW 3-1	139	6/11/2018	300-500	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells, Second Quarter 2018, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
MW-58D	750	5/8/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-58D1	750	5/8/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-61D2	73	4/26/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-66D2	24	4/23/2019	300-500	GHD, 2019. Quarterly Report – Fourth Quarter 2018 (October through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-67S	1	10/13/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-68D	9.34	11/5/2018	300-500	GHD, 2019. Quarterly Report – Fourth Quarter 2018 (October through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-68S	84	4/23/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-81D1	150	4/25/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-83D1	141	10/16/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-83D2	127	10/16/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-85D1	4	4/23/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-87D2	100	4/26/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-88D2	22	4/24/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-111-4	1280	5/29/2019	300-500	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
RE104-D1	59.3	9/12/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE106-D1	9.8	11/8/2019	300-500	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE125-D1	400	9/10/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE131-D1	270	9/10/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE132-D2	16.9	12/9/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE134-D1	7.4	9/16/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED

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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
RE135-D1	1.1	12/10/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RW1-MW1	95.4	9/26/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW1-MW3	3.34	9/26/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW2-MW1	15.7	9/25/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW3-MW1	21.1	9/25/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW3-MW2	131	9/25/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW3-MW3	176	9/25/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW3-MW4	1.3	9/25/2019	300-500	KGS, 2019. Quarterly Operations Report, Third Quarter 2019, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York
RW-21_MW-4	250	4/3/2018	300-500	Arcadis, 2018 Groundwater Investigation Analytical Results NOT YET PUBLISHED
RW-21_MW-8	287	4/4/2018	300-500	Arcadis, 2018 Groundwater Investigation Analytical Results NOT YET PUBLISHED
SFWD 1-3	ND	12/5/2018	300-500	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-12	ND	10/5/2018	300-500	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
TT101-D	100	9/17/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW201D	110	9/12/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW201D1	4.8	9/12/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW202D	100	9/9/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW202D1	25.5	9/9/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW203D1	5.6	12/7/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TTMW203D2	ND	12/7/2019	300-500	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
GP-3 Well 3 (Well 3R)	333	2/13/2019	300-500	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
Well 18	45,7	5/10/2018	300-500	Arcadis, Concentrations of Constituents in Remedial Wells and Treatment System Effluents, Second Quarter 2018, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
Well 19	125	5/10/2018	300-500	Arcadis, Concentrations of Constituents in Remedial Wells and Treatment System Effluents, Second Quarter 2018, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
VPB172	ND	4/10/2019	300-500	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB174	ND	2/12/2019	300-500	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB176	430	6/5/2019	300-500	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED

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VPB201	240	2/21/2019	300-500	Tetra Tech, 2019. Vertical Profile Boring VPB-201, March 2019, Analytical Data NOT YET PUBLISHED
VPB202	27.5	5/9/2019	300-500	Tetra Tech, 2019. Vertical Profile Boring VPB-202, May 2019, Analytical Data NOT YET PUBLISHED
VPB203	7.9	7/25/2019	300-500	Tetra Tech, 2019. Vertical Profile Boring VPB-203, July 2019, Analytical Data NOT YET PUBLISHED
BPOW-5-1	ND	6/14/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-1-5	ND	10/18/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-2-3	ND	10/21/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-3-2	ND	10/22/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-3-3	ND	10/22/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-3-4	156	10/22/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW 4-1	189	12/3/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
BPOW-4-1R	1.1	10/25/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW-5-2	ND	6/14/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-5-3	ND	10/31/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-5-4	ND	10/28/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-5-5	ND	10/29/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-5-6	ND	10/29/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-5-7	ND	10/28/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-6-1	ND	10/31/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-6-4	ND	10/30/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-6-5	ND	10/30/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
GM-15D2	6.8	5/21/2019	500-700	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-33D2	9.6	10/15/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-34D2	95.7	5/23/2019	500-700	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-35D2	24.9	5/6/2019	500-700	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-36D2	3.2	6/26/2018	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Monitoring Wells, Second Quarter 2018, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED

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GM-73D2	33.7	4/22/2019	500-700	Arcadis, Second Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-73D3	1.8	10/8/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-74D2	6.7	10/7/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-74D3	5.9	10/7/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
GM-75D2	17	11/13/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
Hicksville WD 10-1	ND	9/6/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
HWD-8-3 (Hicksville WD 8-3)	129	12/12/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
Hicksville WD 9-1	ND	12/10/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
Massapequa WD Well 4	ND	7/17/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
MW-58D2	319	4/23/2019	500-700	GHD, 2020. Semiannual Report – 2nd Half 2019 (July through December), Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site, Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018
MW-116-5	4230	10/25/2019	500-700	Arcadis, 2020; Bethpage, Email, Subject: Groundwater Data for OU3; NOT YET PUBLISHED
NYAW-3A	27.3	12/10/2019	500-700	DATA NOT YET PUBLISHED
NYAW-4S	4.1	12/10/2019	500-700	DATA NOT YET PUBLISHED
RE103-D1	1400	9/9/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE103-D2	830	3/8/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE105-D1	120	9/18/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE106-D2	36	11/8/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE106-D3	88	11/8/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE107-D1	13	6/18/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE107-D2	210	11/11/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE107-D3	ND	11/11/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE108-D1	41.8	3/6/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE108-D2	3200	9/18/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE109-D1	28.4	9/17/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE109-D2	50.8	9/17/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED

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RE109-D3	85.8	9/17/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE114-D1	370	11/6/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE114-D2	87	11/6/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE115-D1	150	11/14/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE120-D1	1000	9/17/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE121-D1	35	11/7/2019	500-700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE122-D1	750	9/9/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE122-D2	6300	9/9/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE123D1	12.1	9/12/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE123D2	2.4	9/12/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE124-D1	4.4	6/21/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE125-D2	440	9/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE125-D3	270	9/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE126-D1	40.7	9/12/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE126-D2	540	6/4/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE126-D3	3.2	9/12/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE130-D1	ND	11/4/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE130-D2	ND	11/5/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE131-D2	140	9/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE131-D3	31.1	9/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE132-D3	110	9/11/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE132-D4	270	9/16/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE132-D5	160	9/11/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE132-D6	2600	9/11/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE134-D2	140	9/16/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED

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RE134-D3	180	12/4/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE134-D4	21.7	9/18/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE135-D2	0.56	12/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE135-D3	22	9/10/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE139D1	130	9/18/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RW21-MW1	2.61	9/17/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
SFWD 1-4	ND	12/11/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
SFWD 3-1	ND	12/26/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
SFWD 6-1	ND	11/14/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
SFWD 6-2	ND	11/14/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-13	ND	11/20/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-14	ND	10/5/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-2A	32.6	9/12/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-5A	2.1	11/2/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-6B	2.3	10/18/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-7A	ND	10/30/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
THWD LW-8A	ND	10/30/2018	500-700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
TT101-D1	240	9/17/2019	500-700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TT102-D1	ND	11/5/2019	500-700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
VPB172	9.2	4/19/2019	500-700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB174	ND	2/19/2019	500-700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB176	75	6/6/2019	500-700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB201	ND	3/5/2019	500-700	Tetra Tech, 2019. Vertical Profile Boring VPB-201, March 2019, Analytical Data NOT YET PUBLISHED
VPB202	ND	5/16/2019	500-700	Tetra Tech, 2019. Vertical Profile Boring VPB-202, June 2019, Analytical Data NOT YET PUBLISHED
VPB203	ND	7/31/2019	500-700	Tetra Tech, 2019. Vertical Profile Boring VPB-203, August 2019, Analytical Data NOT YET PUBLISHED

**2019 Trichloroethene (TCE) Concentrations  
Groundwater Locations  
Former NWIRP Bethpage, New York  
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LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
BPOW-1-6	ND	10/21/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW 4-2	357	12/3/2018	> 700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
BPOW-4-2R	2.2	10/24/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
BPOW 6-2	ND	10/31/2019	> 700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-6-3	ND	10/30/2019	> 700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
BPOW-6-6	ND	10/30/2019	> 700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Fourth Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
MWD Well 5	ND	7/17/2018	> 700	Tetra Tech, Fourth Quarter 2018 Groundwater Investigation Analytical Results; NOT YET PUBLISHED
RE103-D3	680	9/9/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE104-D2	88.7	12/4/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE104-D3	ND	12/4/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE105-D2	2000	9/18/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE114-D3	56	6/12/2019	> 700	Arcadis, Concentrations of Volatile Organic Compounds and 1,4 Dioxane in Outpost Wells, Second Quarter 2019, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York; NOT YET PUBLISHED
RE115-D2	610	11/14/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE117-D1	78.4	9/18/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE117-D2	0.72	12/6/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE118-D1	ND	10/29/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE119-D1	ND	10/28/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE120-D2	760	9/17/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE120-D3	200	6/6/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE121-D2	1000	11/7/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE122-D3	14.4	9/9/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE123D3	ND	12/3/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE124-D2	ND	11/7/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE129-D1	ND	11/4/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
RE129-D2	ND	11/4/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED

**2019 Trichloroethene (TCE) Concentrations  
Groundwater Locations  
Former NWIRP Bethpage, New York  
Page 13 of 13**

LOCATION	TCE µg/L	DATE	PLUME DEPTH (ft bgs)	DATA SOURCE
RE132D7	1100	9/11/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
RE139D2	140	9/18/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TT101-D2	1200	9/17/2019	> 700	Tetra Tech, 2019 Annual Groundwater Sampling Data Report, OU2 VOC and 1,4-Dioxane Investigation, Naval Weapons Industrial Reserve Plant, Bethpage, New York; NOT YET PUBLISHED
TT102-D2	ND	11/5/2019	> 700	Arcadis, Fourth Quarter 2019 Form 1s; NOT YET PUBLISHED
VPB172	140	4/23/2019	> 700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB174	ND	2/27/2019	> 700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB176	ND	6/24/2019	> 700	Resolution, 2020; Bethpage, Email, Subject: VPB 172, 174, and 176; NOT YET PUBLISHED
VPB201	ND	3/19/2019	> 700	Tetra Tech, 2019. Vertical Profile Boring VPB-201, April 2019, Analytical Data NOT YET PUBLISHED
VPB202	ND	5/17/2019	> 700	Tetra Tech, 2019. Vertical Profile Boring VPB-202, June 2019, Analytical Data NOT YET PUBLISHED
VPB203	ND	8/8/2019	> 700	Tetra Tech, 2019. Vertical Profile Boring VPB-203, August 2019, Analytical Data NOT YET PUBLISHED

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-1	BPOW 5-2	BPOW 5-3	BPOW 5-4
	Sample ID: Date:	BPOW5-1_20190221 2/21/2019	BPOW5-2_20190221 2/21/2019	BPOW5-3_20190222 2/22/2019	BPOW5-4_20190226 2/26/2019
<b><u>Volatile Organic Compounds (VOCs) <sup>(1)</sup></u></b>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
<b>Total VOCs <sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>1.50 J</b>	<b>&lt; 0.200</b>	<b>1.72</b>	<b>0.837</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-5	BPOW 5-5	BPOW 5-6	BPOW 5-7
	Sample ID:	BPOW5-5_20190227	REP022719LV1	BPOW5-6_20190227	BPOW5-7_20190305
	Date:	2/27/2019	2/27/2019	2/27/2019	3/5/2019
<b><u>Volatile Organic Compounds (VOCs) <sup>(1)</sup></u></b>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
<b>Total VOCs <sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>1.56</b>	<b>1.46</b>	<b>0.243</b>	<b>&lt; 0.200 J</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.  
(2) Total VOCs are rounded to two significant figures.  
(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

Well: Sample ID: Date:	BPOW 6-1 BPOW6-1_20190215 2/15/2019	BPOW 6-2 BPOW6-2_20190215 2/15/2019	BPOW 6-3 BPOW6-3_20190220 2/20/2019	BPOW 6-4 BPOW6-4_20190306 3/6/2019
<b>CONSTITUENT</b> units (ug/L)				
<b><u>Volatile Organic Compounds (VOCs)<sup>(1)</sup></u></b>				
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone	< 2.0	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes	< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)	< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene	< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride	< 0.50	< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>	<b>0.141 J</b>	<b>&lt; 0.200</b>	<b>&lt; 0.200</b>	<b>0.198 J</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT units (ug/L)	Well: Sample ID: Date:	BPOW 6-5 BPOW6-5_20190219 2/19/2019	BPOW 6-6 BPOW6-6_20190226 2/26/2019
<b><u>Volatile Organic Compounds (VOCs)<sup>(1)</sup></u></b>			
1,1,1-Trichloroethane		< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50
Bromoform		< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50
Chloroform		< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50
Toluene		< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>&lt; 0.200</b>	<b>&lt; 0.200</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**First Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
  - (2) Total VOCs are rounded to two significant figures.
  - (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.
- Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-1 <b>Lab Sample ID:</b> JC83152-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 02/18/19 <b>Date Received:</b> 02/19/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B118317.D	1	02/22/19 19:03	BK	n/a	n/a	V1B5710
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide <sup>b</sup>	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-1	<b>Date Sampled:</b> 02/18/19
<b>Lab Sample ID:</b> JC83152-1	<b>Date Received:</b> 02/19/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	BPOW2-2	Date Sampled:	02/18/19
Lab Sample ID:	JC83152-2	Date Received:	02/19/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Navy Wells OU2, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B118318.D	1	02/22/19 19:35	BK	n/a	n/a	V1B5710
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide <sup>b</sup>	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-2	<b>Date Sampled:</b> 02/18/19
<b>Lab Sample ID:</b> JC83152-2	<b>Date Received:</b> 02/19/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-3 <b>Lab Sample ID:</b> JC83152-3 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 02/18/19 <b>Date Received:</b> 02/19/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B118319.D	1	02/22/19 20:06	BK	n/a	n/a	V1B5710
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide <sup>b</sup>	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-3	<b>Date Sampled:</b> 02/18/19
<b>Lab Sample ID:</b> JC83152-3	<b>Date Received:</b> 02/19/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	81%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB021819LV1	Date Sampled: 02/18/19
Lab Sample ID: JC83152-4	Date Received: 02/19/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B118312.D	1	02/22/19 16:26	BK	n/a	n/a	V1B5710
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide <sup>b</sup>	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB021819LV1	<b>Date Sampled:</b> 02/18/19
<b>Lab Sample ID:</b> JC83152-4	<b>Date Received:</b> 02/19/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.4  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC83152X	<b>Date Collected:</b> 02/18/2019 11:55	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 471968001	<b>Date Received:</b> 02/22/2019 09:10	
<b>Client Sample:</b> 1X	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Client ID:</b> BPOW2-1	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Batch ID:</b> 1852214	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Run Date:</b> 02/26/2019 17:55	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Prep Date:</b> 02/26/2019 11:00	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
<b>Data File:</b> s022619.B\s6b2615.D	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.644	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC83152X	Date Collected: 02/18/2019 12:15	Matrix: WATER
Lab Sample ID: 471968002	Date Received: 02/22/2019 09:10	
Client Sample: 2X	Client: ACTL003	Project: ACTL00316
Client ID: BPOW2-2	Method: EPA 522	SOP Ref: GL-OA-E-073
Batch ID: 1852214	Inst: MSD6.I	Dilution: 1
Run Date: 02/26/2019 18:43	Analyst: JMB3	Inj. Vol: 1 uL
Prep Date: 02/26/2019 11:00	Aliquot: 100 mL	Final Volume: 2 mL
Data File: s022619.B\s6b2617.D	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.475	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC83152X	Date Collected: 02/18/2019 16:20	Matrix: WATER
Lab Sample ID: 471968003	Date Received: 02/22/2019 09:10	
Client Sample: 3X	Client: ACTL003	Project: ACTL00316
Client ID: BPOW2-3	Method: EPA 522	SOP Ref: GL-OA-E-073
Batch ID: 1853475	Inst: MSD6.I	Dilution: 1
Run Date: 03/01/2019 23:27	Analyst: JMB3	Inj. Vol: 1 uL
Prep Date: 03/01/2019 11:00	Aliquot: 100 mL	Final Volume: 2 mL
Data File: s030119.B\s6c0126.D	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		3.19	ug/L	0.100	0.100	0.200

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-1	BPOW 5-2	BPOW 5-3
	Sample ID: Date:	BPOW5-1_20190614 6/14/2019	BPOW5-2_20190614 6/14/2019	BPOW5-3_20190624 6/24/2019
<b><u>Volatile Organic Compounds (VOCs)<sup>(1)</sup></u></b>				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>&lt; 0.437 B</b>	<b>&lt; 0.209 B</b>	<b>1.82</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-4	BPOW 5-5	BPOW 5-6
	Sample ID: Date:	BPOW5-4_20190611 6/11/2019	BPOW5-5_20190610 6/10/2019	REP061919DC1 6/19/2019
<b><u>Volatile Organic Compounds (VOCs)<sup>(1)</sup></u></b>				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>1.07</b>	<b>&lt; 2.19 B</b>	<b>0.355</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-6	BPOW 5-7
	Sample ID:	BPOW5-6_20190619	BPOW5-7_20190620
	Date:	6/19/2019	6/20/2019
<b><u>Volatile Organic Compounds (VOCs)<sup>(1)</sup></u></b>			
1,1,1-Trichloroethane		< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50
1,1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0
1,1,1,2-Trichloroethane		< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50
Bromoform		< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50
Chloroform		< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50
Toluene		< 0.50	<b>0.13 J</b>
trans-1,2-Dichloroethene		< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0.13</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>0.349</b>	<b>0.221</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit
B	Contamination found in associated blank

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT units (ug/L)	Well:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4
	Sample ID: Date:	BPOW6-1_20190605 6/5/2019	BPOW6-2_20190605 6/5/2019	BPOW6-3_20190606 6/6/2019	BPOW6-4_20190606 6/6/2019
<b>Volatile Organic Compounds (VOCs)<sup>(1)</sup></b>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>&lt; 0.301 B</b>	<b>&lt; 0.257 B</b>	<b>&lt; 0.221 B</b>	<b>&lt; 0.393 B</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT units (ug/L)	Well:	BPOW 6-5	BPOW 6-6
	Sample ID: Date:	BPOW6-5_20190607 6/7/2019	BPOW6-6_20190607 6/7/2019
<b>Volatile Organic Compounds (VOCs)<sup>(1)</sup></b>			
1,1,1-Trichloroethane		< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50
Bromoform		< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50
Chloroform		< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50
Toluene		< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>		<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>		<b>&lt; 0.278 B</b>	<b>&lt; 0.235 B</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Second Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
  - (2) Total VOCs are rounded to two significant figures.
  - (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.
- Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
<0.50	Constituent not detected above its laboratory detection limit
B	Contamination found in associated blank

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE106D1	RE106D2	RE106D3	RE107D1	RE107D2
	Sample ID:	RE106D1	RE106D2	RE106D3	RE107D1	RE107D2
	Date:	6/13/2019	6/13/2019	6/13/2019	6/18/2019	6/18/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		<b>1.9</b>	<b>8.2</b>	<b>72</b>	<b>0.45 J</b>	<b>39</b>
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	<b>1.0</b>
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	0.60 J	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	<b>0.59J</b>	<b>3.1</b>	< 1.0	<b>3.3</b>
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		<b>1.4</b>	<b>5.8</b>	<b>53</b>	<b>1.6</b>	<b>11</b>
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		<b>9.7</b>	<b>32</b>	<b>82</b>	<b>13</b>	<b>190 D</b>
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		<b>13</b>	<b>47</b>	<b>212</b>	<b>15</b>	<b>244</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>10</b>	<b>12</b>	<b>14</b>	<b>7.8</b>	<b>16</b>

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE107D3	RE109D1	RE109D2	RE109D3	RE114D1
	Sample ID:	RE107D3	RE109D1	RE109D2	RE109D3	RE114D1
	Date:	6/18/2019	6/17/2019	6/17/2019	6/17/2019	6/12/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	<b>0.46 J</b>
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		<b>4.4</b>	< 1.0	<b>1.7</b>	<b>2.8</b>	<b>21</b>
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	<b>1.3</b>
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	<b>1.2</b>
1,1-Dichloroethene		< 1.0	< 1.0	<b>0.35 J</b>	<b>0.58 J</b>	<b>4.9</b>
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	<b>0.68 J</b>	<b>1.9</b>
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	<b>2.5</b>
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	<b>3.5</b>
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	<b>0.40 J</b>	< 1.0	<b>0.40 J</b>	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	<b>23</b>	<b>40</b>	<b>70</b>	<b>320 D</b>
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		<b>4.4</b>	<b>23</b>	<b>42</b>	<b>74</b>	<b>360</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>0.098 J</b>	<b>5.6</b>	<b>6.4</b>	<b>6.3</b>	<b>6.0</b>

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE114D2	RE114D3	RE115D1	RE115D2	RE116D1
	Sample ID:	RE114D2	RE114D3	RE115D1	RE115D2	RE116D1
	Date:	6/12/2019	6/12/2019	6/5/2019	6/5/2019	6/21/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>						
1,1,1-Trichloroethane		<b>0.30 J</b>	<b>0.23 J</b>	<b>0.35 J</b>	<b>1.4</b>	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		<b>14</b>	<b>20</b>	<b>6.8</b>	<b>32 J</b>	< 5.0
1,1,2-Trichloroethane		< 1.0 U	< 1.0 U	<b>0.58 J</b>	<b>0.92 J</b>	< 1.0
1,1-Dichloroethane		<b>0.66 J</b>	< 1.0 U	0.39 J	<b>1.8</b>	< 1.0
1,1-Dichloroethene		<b>1.5</b>	<b>1.6</b>	<b>3.4</b>	<b>17</b>	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		<b>0.32 J</b>	<b>0.39 J</b>	<b>0.51 J</b>	<b>1.8</b>	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		<b>0.66 J</b>	< 1.0 U	<b>2.7</b>	<b>1.3</b>	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0 U	< 1.0 U	< 1.0
cis-1,2-dichloroethene		<b>1.1</b>	<b>0.97 J</b>	<b>1.9</b>	<b>2.8</b>	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		<b>86</b>	<b>56</b>	<b>110</b>	<b>480 D</b>	< 1.0
Vinyl Chloride		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		<b>105</b>	<b>80</b>	<b>130</b>	<b>540</b>	<b>0</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>4.9</b>	<b>4.2</b>	<b>5</b>	<b>8</b>	<b>5.5</b>

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE118D1	RE119D1	RE121D1	RE121D2
	Sample ID:	RE118D1	RE119D1	RE121D1	RE121D2
	Date:	6/19/2019	6/20/2019	6/20/2019	6/20/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>					
1,1,1-Trichloroethane		< 1.0	< 1.0	<b>0.22 J</b>	<b>0.42 J</b>
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0 U	< 2.0 U
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 5.0	< 5.0	<b>8.1 J</b>	<b>9.5 J</b>
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0 U	<b>0.92 J</b>
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0 U	<b>0.77 J</b>
1,1-Dichloroethene		< 1.0	< 1.0	<b>1.9 J</b>	<b>2.9 J</b>
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	<b>2.3 J</b>	<b>5.4 J</b>
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0 U	< 1.0	<b>3.2</b>
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0 U	<b>0.41 J</b>	<b>1.6 J</b>
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0 U	<b>1.1</b>	<b>2.4</b>
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	<b>0.95 J</b>
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0 U	<b>30</b>	<b>810 D</b>
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>44</b>	<b>850</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>&lt; 0.24</b>	<b>&lt; 0.24</b>	<b>10</b>	<b>6.1</b>

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE121D2	RE124D1	RE124D2	RE127D1
	Sample ID:	REP062019MM1	RE124D1	RE124D2	RE127D1
	Date:	6/20/2019	6/21/2019	6/21/2019	6/11/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>					
1,1,1-Trichloroethane		<b>0.48 J</b>	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0 U	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		<b>20 J</b>	<b>87</b>	< 5.0	< 5.0
1,1,2-Trichloroethane		<b>0.64 J</b>	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		<b>0.90 J</b>	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		<b>5.4 J</b>	<b>1.3</b>	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		<b>3.5</b>	<b>0.28 J</b>	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		<b>1.8</b>	< 1.0 U	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		<b>2.3</b>	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	<b>0.98 J</b>	< 1.0	< 1.0
Toluene		<b>1.0</b>	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		<b>860 D</b>	<b>4.4</b>	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		<b>900</b>	<b>94</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>5.4</b>	<b>2.2</b>	<b>&lt; 0.24</b>	<b>0.11 J</b>

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE127D2	RE128D1	RE128D2	RE129D1	RE129D2
	Sample ID:	RE127D2	RE128D1	RE128D2	RE129D1	RE129D2
	Date:	6/11/2019	6/19/2019	6/19/2019	6/14/2019	6/14/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		0	0	0	0	0
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>0.094 J</b>	< 0.24	<b>0.12 J</b>	< 0.24	< 0.24

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**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (Units in µg/L)	Well:	RE130D1	RE130D2	RE133D1	RE133D2
	Sample ID:	RE130D1	RE130D2	RE133D1	RE133D2
	Date:	6/10/2019	6/10/2019	6/6/2019	6/6/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>					
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0
<b>Total VOCs <sup>(2)</sup></b>		0	0	0	0
<b>1,4-Dioxane <sup>(3)</sup></b>		< 0.24	< 0.24	<b>0.19 J</b>	< 0.24

Notes and Abbreviations on last page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells Installed by the Navy**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 8260C.
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
D	Concentration is based on a diluted sample analysis
J	Constituent value is estimated
REP	Blind Duplicate Sample
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**

Constituent (units in µg/L)	Well: Sample ID: Date:	TT-102D TT-102D 6/24/2019	TT-102D REP062419RM1 6/24/2019	TT-102D2 TT-102D2 6/24/2019
<b>Volatile Organic Compounds (VOCs) <sup>(1)</sup></b>				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
2-Hexanone		< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 1.0	< 1.0	< 1.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 2.0	< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
Methylene Chloride		< 0.50	< 0.50	< 0.50
Styrene		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 2.0	< 2.0	< 2.0
<b>Total VOCs <sup>(2)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(3)</sup></b>		<b>0.54</b>	<b>0.46</b>	<b>&lt; 0.24</b>

Notes and Abbreviations on next page.

**Table 1**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2**  
**Second Quarter 2019, Operable Unit 2 (Groundwater)**  
**Bethpage, New York.**



**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit

## Report of Analysis

<b>Client Sample ID:</b> HN-42S <b>Lab Sample ID:</b> JC86340-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 04/12/19 <b>Date Received:</b> 04/12/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L311169.D	1	04/17/19 02:44	BK	n/a	n/a	VL9031
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> HN-42S	<b>Date Sampled:</b> 04/12/19
<b>Lab Sample ID:</b> JC86340-1	<b>Date Received:</b> 04/12/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> HN-42I <b>Lab Sample ID:</b> JC86340-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 04/12/19 <b>Date Received:</b> 04/12/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L311170.D	1	04/17/19 03:11	BK	n/a	n/a	VL9031
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> HN-42I	<b>Date Sampled:</b> 04/12/19
<b>Lab Sample ID:</b> JC86340-2	<b>Date Received:</b> 04/12/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	94%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB041219RM1 <b>Lab Sample ID:</b> JC86340-3 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 04/12/19 <b>Date Received:</b> 04/12/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L311159.D	1	04/16/19 22:13	BK	n/a	n/a	VL9031
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB041219RM1	<b>Date Sampled:</b> 04/12/19
<b>Lab Sample ID:</b> JC86340-3	<b>Date Received:</b> 04/12/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB041219RM1 <b>Lab Sample ID:</b> JC86340-4 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 04/12/19 <b>Date Received:</b> 04/12/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L311160.D	1	04/16/19 22:40	BK	n/a	n/a	VL9031
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB041219RM1	<b>Date Sampled:</b> 04/12/19
<b>Lab Sample ID:</b> JC86340-4	<b>Date Received:</b> 04/12/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	93%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	3.81	9.9	ug/l	JN
	Total TIC, Volatile		9.9	ug/l	J

(a) Associated CCV outside of control limits low.

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3594-1  
**Client ID:** HN-42S  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3594  
**Lab File ID:** G5957.D

**Sample Date:** 12-APR-19  
**Received Date:** 13-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** AC/LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		64.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3594-2  
**Client ID:** HN-42I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3594  
**Lab File ID:** G5958.D

**Sample Date:** 12-APR-19  
**Received Date:** 13-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** AC/LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.48	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		64.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3594-3  
**Client ID:** FB041219RM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3594  
**Lab File ID:** G5959.D

**Sample Date:** 12-APR-19  
**Received Date:** 13-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** AC/LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		63.5	%				

## Report of Analysis

<b>Client Sample ID:</b> FB042319MM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-1	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182546.D	1	04/25/19 22:36	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB042319MM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-1	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	105%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-74D2	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-2	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182549.D	1	04/26/19 00:05	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-74D2	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-2	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	2.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-74D3	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-3	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182550.D	1	04/26/19 00:35	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.0	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-74D3	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-3	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	5.3	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78S	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-4	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182551.D	1	04/26/19 01:05	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-78S	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-4	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78S	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-4	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46618

(2) Prep QC Batch: MP14583

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> GM-78S	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-4F	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46618

(2) Prep QC Batch: MP14583

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB042319RM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-5	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182547.D	1	04/25/19 23:06	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.3	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> FB042319RM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-5	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		81-124%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB042319RM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-5	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/26/19	04/30/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46618

(2) Prep QC Batch: MP14583

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB042319RM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-6	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D182548.D	1	04/25/19 23:35	DG	n/a	n/a	V2D7800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> TB042319RM1	<b>Date Sampled:</b> 04/23/19
<b>Lab Sample ID:</b> JC86930-6	<b>Date Received:</b> 04/24/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		81-124%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	silanol, trimethyl-	8.97	5.6	ug/l	JN
	Total TIC, Volatile		5.6	ug/l	J

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3916-1  
**Client ID:** FB042318MM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3916  
**Lab File ID:** G6046.D

**Sample Date:** 23-APR-19  
**Received Date:** 24-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		64.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3916-2  
**Client ID:** GM-74D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3916  
**Lab File ID:** G6047.D

**Sample Date:** 23-APR-19  
**Received Date:** 24-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.2	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		51.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3916-3  
**Client ID:** GM-74D3  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3916  
**Lab File ID:** G6048.D

**Sample Date:** 23-APR-19  
**Received Date:** 24-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		1.9	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		54.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3917-1  
**Client ID:** GM-78S  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3917  
**Lab File ID:** G6049.D

**Sample Date:** 23-APR-19  
**Received Date:** 24-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.6	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		72.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3917-2  
**Client ID:** FB042319RM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3917  
**Lab File ID:** G6050.D

**Sample Date:** 23-APR-19  
**Received Date:** 24-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		57.8	%				

## Report of Analysis

<b>Client Sample ID:</b> FB050319ALH1	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-1	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169644.D	1	05/07/19 14:05	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	10.5	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050319ALH1	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-1	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-37D	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-2	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169637.D	1	05/07/19 10:40	ED	n/a	n/a	V2B7654
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-37D	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-2	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	10.7	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-37D2	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-3	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169638.D	1	05/07/19 11:10	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	1.4	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.73	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	0.95	1.0	0.90	ug/l	J
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-37D2	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-3	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	2.5	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-70D2	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-4	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169639.D	1	05/07/19 11:39	ED	n/a	n/a	V2B7654
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.6	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-70D2	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-4	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	6.6	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB050319RM1	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-5	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169645.D	1	05/07/19 14:34	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB050319RM1	<b>Date Sampled:</b> 05/03/19
<b>Lab Sample ID:</b> JC87556-5	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.67	15	ug/l	JN
	Total TIC, Volatile		15	ug/l	J

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4328-1  
**Client ID:** FB050319ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4328  
**Lab File ID:** G6184.D

**Sample Date:** 03-MAY-19  
**Received Date:** 04-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		79.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4328-2  
**Client ID:** GM-37D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4328  
**Lab File ID:** G6185.D

**Sample Date:** 03-MAY-19  
**Received Date:** 04-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	B	0.55	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		76.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4328-3  
**Client ID:** GM-37D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4328  
**Lab File ID:** G6186.D

**Sample Date:** 03-MAY-19  
**Received Date:** 04-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	B	0.76	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		71.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4329-1  
**Client ID:** GM-70D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4329  
**Lab File ID:** G6142.D

**Sample Date:** 03-MAY-19  
**Received Date:** 04-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 09-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	B	6.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		74.7	%				

## Report of Analysis

<b>Client Sample ID:</b> TB050619ALH1		<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-1		<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A191366.D	1	05/09/19 16:12	DG	n/a	n/a	V1A8208
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB050619ALH1	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-1	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB050619ALH1	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-2	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A191367.D	1	05/09/19 16:36	DG	n/a	n/a	V1A8208
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050619ALH1	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-2	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-71D2	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-3	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A191368.D	1	05/09/19 17:01	DG	n/a	n/a	V1A8208
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	4.0	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	2.7	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	1.3	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-71D2	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-3	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	10.9	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.54	10	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-35D2	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-4	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A191369.D	1	05/09/19 17:26	DG	n/a	n/a	V1A8208
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.2	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-35D2	<b>Date Sampled:</b> 05/06/19
<b>Lab Sample ID:</b> JC87739-4	<b>Date Received:</b> 05/07/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	24.9	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	3.87	5.5	ug/l	JN
	Total TIC, Volatile		5.5	ug/l	J

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4379-1  
**Client ID:** FB050619ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4379  
**Lab File ID:** G6187.D

**Sample Date:** 06-MAY-19  
**Received Date:** 07-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		77.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4379-2  
**Client ID:** GM-71D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4379  
**Lab File ID:** G6188.D

**Sample Date:** 06-MAY-19  
**Received Date:** 07-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	B	2.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		70.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4379-3  
**Client ID:** GM-35D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4379  
**Lab File ID:** G6191.D

**Sample Date:** 06-MAY-19  
**Received Date:** 07-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 13-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	B	7.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		65.6	%				

## Report of Analysis

<b>Client Sample ID:</b> FB050719ALH1	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-1	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169796.D	1	05/13/19 09:14	ED	n/a	n/a	V2B7663
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050719ALH1	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-1	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) This compound in BS is outside in house QC limits bias high.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-79I		<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-2		<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169804.D	1	05/13/19 13:09	ED	n/a	n/a	V2B7663
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-79I	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-2	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) This compound in BS is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-79D	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-3	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169805.D	1	05/13/19 13:38	ED	n/a	n/a	V2B7663
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-79D	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-3	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	20.5	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) This compound in BS is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB050719ALH1	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-4	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169797.D	1	05/13/19 09:44	ED	n/a	n/a	V2B7663
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB050719ALH1	<b>Date Sampled:</b> 05/07/19
<b>Lab Sample ID:</b> JC87834-4	<b>Date Received:</b> 05/08/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) This compound in BS is outside in house QC limits bias high.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4442-1RE  
**Client ID:** FB050719ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4442  
**Lab File ID:** N3407.D

**Sample Date:** 07-MAY-19  
**Received Date:** 08-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		91.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4442-2RE  
**Client ID:** GM-79I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4442  
**Lab File ID:** N3408.D

**Sample Date:** 07-MAY-19  
**Received Date:** 08-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.0	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		73.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4442-3RE  
**Client ID:** GM-79D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4442  
**Lab File ID:** N3409.D

**Sample Date:** 07-MAY-19  
**Received Date:** 08-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.5	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		69.1	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-13D		<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-1		<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L312182.D	1	05/21/19 21:01	DG	n/a	n/a	VL9082
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	2.4	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	2.3	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	3.9	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	38.2	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-13D	<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-1	<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	17.6	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB051319ALH1		<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-2		<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L312180.D	1	05/21/19 20:02	DG	n/a	n/a	VL9082
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB051319ALH1	<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-2	<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	89%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1825-61-2	Silane, methoxytrimethyl-	3.13	5.7	ug/l	JN
1066-40-6	Silanol, trimethyl-	3.80	8.2	ug/l	JN
	Total TIC, Volatile		13.9	ug/l	J

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB051319RM1	<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-3	<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L312181.D	1	05/21/19 20:29	DG	n/a	n/a	VL9082
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB051319RM1	<b>Date Sampled:</b> 05/13/19
<b>Lab Sample ID:</b> JC88134-3	<b>Date Received:</b> 05/14/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4694-1  
**Client ID:** GM-13D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4694  
**Lab File ID:** N3465.D

**Sample Date:** 13-MAY-19  
**Received Date:** 14-MAY-19  
**Extract Date:** 15-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252861

**Analysis Date:** 17-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 20-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		81.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4694-2  
**Client ID:** FB051319RM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4694  
**Lab File ID:** N3466.D

**Sample Date:** 13-MAY-19  
**Received Date:** 14-MAY-19  
**Extract Date:** 15-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252861

**Analysis Date:** 17-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 20-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		96.2	%				

## Report of Analysis

<b>Client Sample ID:</b> HN-40I	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-1	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B90001.D	1	04/18/19 12:06	CSF	n/a	n/a	V4B3806
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	0.94	1.0	0.90	ug/l	J
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> HN-40I	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-1	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.1	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.57	14	ug/l	J
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> HN-40S	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-2	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B89991.D	1	04/18/19 07:14	JTP	n/a	n/a	V4B3805
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> HN-40S	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-2	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	24	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB041519LV1	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-3	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B89999.D	1	04/18/19 11:10	CSF	n/a	n/a	V4B3806
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
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## Report of Analysis

<b>Client Sample ID:</b> FB041519LV1	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-3	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.57	19	ug/l	J
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB041519LV1		<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-4		<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B90000.D	1	04/18/19 11:37	CSF	n/a	n/a	V4B3806
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB041519LV1	<b>Date Sampled:</b> 04/15/19
<b>Lab Sample ID:</b> JC86482-4	<b>Date Received:</b> 04/16/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	7.97	13	ug/l	JN
	Total TIC, Volatile		13	ug/l	J N

N

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3640-1  
**Client ID:** HN-401  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3640  
**Lab File ID:** G5960.D

**Sample Date:** 15-APR-19  
**Received Date:** 16-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		70.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3640-2  
**Client ID:** HN-40S  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3640  
**Lab File ID:** G5961.D

**Sample Date:** 15-APR-19  
**Received Date:** 16-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		69.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3640-3  
**Client ID:** FB041519LV1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3640  
**Lab File ID:** G5962.D

**Sample Date:** 15-APR-19  
**Received Date:** 16-APR-19  
**Extract Date:** 16-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG250863

**Analysis Date:** 17-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		59.9	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-21S		<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-1		<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B90068.D	1	04/22/19 13:33	MD	n/a	n/a	V4B3809
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
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## Report of Analysis

<b>Client Sample ID:</b> GM-21S	<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-1	<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB041719LV1	<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-2	<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B90076.D	1	04/22/19 17:25	MD	n/a	n/a	V4B3809
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> FB041719LV1	<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-2	<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.57	6.3	ug/l	J
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB041719LV1	<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-3	<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B90077.D	1	04/22/19 17:53	MD	n/a	n/a	V4B3809
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB041719LV1	<b>Date Sampled:</b> 04/17/19
<b>Lab Sample ID:</b> JC86653-3	<b>Date Received:</b> 04/18/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	5.7	ug/l	J
1066-40-6	Silanol, trimethyl-	7.97	21	ug/l	JN
	Total TIC, Volatile		21	ug/l	J N

N

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3734-1  
**Client ID:** GM-21S  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM3734  
**Lab File ID:** G6016.D

**Sample Date:** 17-APR-19  
**Received Date:** 18-APR-19  
**Extract Date:** 22-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251196

**Analysis Date:** 24-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 24-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.4	ug/L	1	.25	0.25	0.086
1,4-Dioxane-D8		70.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3734-2  
**Client ID:** FB041719LV1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM3734  
**Lab File ID:** G6017.D

**Sample Date:** 17-APR-19  
**Received Date:** 18-APR-19  
**Extract Date:** 22-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251196

**Analysis Date:** 24-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 24-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		68.7	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-78I	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-1	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169264.D	1	04/25/19 01:14	DG	n/a	n/a	V2B7633
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78I	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-1	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.69	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78I	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-1	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46589

(2) Prep QC Batch: MP14554

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> GM-78I	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-1F	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46589

(2) Prep QC Batch: MP14554

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB042219LV1	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-2	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169262.D	1	04/25/19 00:15	DG	n/a	n/a	V2B7633
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB042219LV1	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-2	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB042219LV1	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-2	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	04/25/19	04/26/19 RP	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46589

(2) Prep QC Batch: MP14554

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB042219LV1		<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-3		<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169263.D	1	04/25/19 00:45	DG	n/a	n/a	V2B7633
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB042219LV1	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-3	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-73D	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-4	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169265.D	1	04/25/19 01:43	DG	n/a	n/a	V2B7633
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-73D	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-4	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	15.4	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-73D2	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-5	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169266.D	1	04/25/19 02:12	DG	n/a	n/a	V2B7633
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-73D2	<b>Date Sampled:</b> 04/22/19
<b>Lab Sample ID:</b> JC86846-5	<b>Date Received:</b> 04/23/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	33.7	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3877-1  
**Client ID:** GM-78I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3877  
**Lab File ID:** G6040.D

**Sample Date:** 22-APR-19  
**Received Date:** 23-APR-19  
**Extract Date:** 24-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251429

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.7	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		67.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3877-2  
**Client ID:** FB042219LV1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3877  
**Lab File ID:** G6041.D

**Sample Date:** 22-APR-19  
**Received Date:** 23-APR-19  
**Extract Date:** 24-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251429

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		66.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3878-1  
**Client ID:** GM-73D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3878  
**Lab File ID:** G6042.D

**Sample Date:** 22-APR-19  
**Received Date:** 23-APR-19  
**Extract Date:** 24-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251429

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.9	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		65.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3878-2  
**Client ID:** GM-73D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3878  
**Lab File ID:** G6043.D

**Sample Date:** 22-APR-19  
**Received Date:** 23-APR-19  
**Extract Date:** 24-APR-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251429

**Analysis Date:** 26-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 30-APR-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.1	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		68.4	%				

## Report of Analysis

<b>Client Sample ID:</b> FB042419ALH1	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-1	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169330.D	1	04/26/19 20:36	PR	n/a	n/a	V2B7637
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB042419ALH1	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-1	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-74D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-2	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169349.D	1	04/27/19 05:57	PR	n/a	n/a	V2B7637
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-74D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-2	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.2	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-73D3	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-3	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169360.D	1	04/27/19 12:31	PR	n/a	n/a	V2B7638
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-73D3	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-3	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.6	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-21D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-4	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169346.D	1	04/27/19 04:29	PR	n/a	n/a	V2B7637
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
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## Report of Analysis

<b>Client Sample ID:</b> GM-21D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-4	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.2	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-18D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-5	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169345.D	1	04/27/19 03:59	PR	n/a	n/a	V2B7637
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> GM-18D	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-5	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.94	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB042419RM1	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-6	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169331.D	1	04/26/19 21:06	PR	n/a	n/a	V2B7637
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB042419RM1	<b>Date Sampled:</b> 04/24/19
<b>Lab Sample ID:</b> JC87005-6	<b>Date Received:</b> 04/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3986-1  
**Client ID:** GM-21D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3986  
**Lab File ID:** G6086.D

**Sample Date:** 24-APR-19  
**Received Date:** 25-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.1	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		68.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3986-2  
**Client ID:** GM-18D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3986  
**Lab File ID:** G6087.D

**Sample Date:** 24-APR-19  
**Received Date:** 25-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		10	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		66.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3987-1  
**Client ID:** FB042419ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3987  
**Lab File ID:** G6088.D

**Sample Date:** 24-APR-19  
**Received Date:** 25-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		68.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3987-2  
**Client ID:** GM-74D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3987  
**Lab File ID:** G6089.D

**Sample Date:** 24-APR-19  
**Received Date:** 25-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.0	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM3987-3  
**Client ID:** GM-73D3  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM3987  
**Lab File ID:** G6090.D

**Sample Date:** 24-APR-19  
**Received Date:** 25-APR-19  
**Extract Date:** 25-APR-19  
**Extracted By:** JMS  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251606

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.83	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		61.9	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-39DA	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-1	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A194536.D	1	04/29/19 13:01	DG	n/a	n/a	V2A8362
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> GM-39DA	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-1	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.67	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-39DB	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-2	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A194537.D	1	04/29/19 13:29	DG	n/a	n/a	V2A8362
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-39DB	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-2	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	40.2	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	90%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-20D	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-3	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A194538.D	1	04/29/19 13:58	DG	n/a	n/a	V2A8362
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-20D	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-3	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.55	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-20I	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-4	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A194539.D	1	04/29/19 14:27	DG	n/a	n/a	V2A8362
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-20I	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-4	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.68	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB042519RM1	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-5	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A194540.D	1	04/29/19 14:55	DG	n/a	n/a	V2A8362
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
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## Report of Analysis

<b>Client Sample ID:</b> TB042519RM1	<b>Date Sampled:</b> 04/25/19
<b>Lab Sample ID:</b> JC87111-5	<b>Date Received:</b> 04/26/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	8.83	8.6	ug/l	JN
	Total TIC, Volatile		8.6	ug/l	J N

N

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4037-1  
**Client ID:** GM-39DA  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4037  
**Lab File ID:** G6093.D

**Sample Date:** 25-APR-19  
**Received Date:** 26-APR-19  
**Extract Date:** 29-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251720

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		70.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4037-2  
**Client ID:** GM-39DB  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4037  
**Lab File ID:** G6094.D

**Sample Date:** 25-APR-19  
**Received Date:** 26-APR-19  
**Extract Date:** 29-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251720

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		66.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4037-3  
**Client ID:** GM-20D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4037  
**Lab File ID:** G6095.D

**Sample Date:** 25-APR-19  
**Received Date:** 26-APR-19  
**Extract Date:** 29-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251720

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.3	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		62.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4037-4  
**Client ID:** GM-20I  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4037  
**Lab File ID:** G6096.D

**Sample Date:** 25-APR-19  
**Received Date:** 26-APR-19  
**Extract Date:** 29-APR-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251720

**Analysis Date:** 30-APR-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 01-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		61.9	%				

## Report of Analysis

<b>Client Sample ID:</b> FB042919ALH1	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-1	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E152292.D	1	05/02/19 02:01	PR	n/a	n/a	V2E6751
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB042919ALH1	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-1	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	87%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	8.79	5.9	ug/l	JN
	Total TIC, Volatile		5.9	ug/l	J N

N

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-38D	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-2	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E152375.D	1	05/04/19 18:45	PR	n/a	n/a	V2E6756
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	0.94	1.0	0.60	ug/l	J
75-35-4	1,1-Dichloroethene	0.66	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	0.85	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.4	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-38D	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-2	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	118	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-38D2		<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-3		<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E152295.D	1	05/02/19 03:33	PR	n/a	n/a	V2E6751
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.82	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	4.5	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.99	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	0.67	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-38D2	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-3	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	21.9	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	89%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP042919ALH1	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-4	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E152296.D	1	05/02/19 04:04	PR	n/a	n/a	V2E6751
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	0.58	1.0	0.57	ug/l	J
107-06-2	1,2-Dichloroethane	1.0	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.67	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	0.85	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.4	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> REP042919ALH1	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-4	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	119	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB042919ALH1		<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-5		<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E152293.D	1	05/02/19 02:31	PR	n/a	n/a	V2E6751
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB042919ALH1	<b>Date Sampled:</b> 04/29/19
<b>Lab Sample ID:</b> JC87238-5	<b>Date Received:</b> 04/30/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	88%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4105-1  
**Client ID:** FB042919ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4105  
**Lab File ID:** G6107.D

**Sample Date:** 29-APR-19  
**Received Date:** 30-APR-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 02-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 03-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.086
1,4-Dioxane-D8		66.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4105-2  
**Client ID:** GM-38D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4105  
**Lab File ID:** G6108.D

**Sample Date:** 29-APR-19  
**Received Date:** 30-APR-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 02-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 03-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.2	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		66.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4105-3  
**Client ID:** GM-38D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4105  
**Lab File ID:** G6111.D

**Sample Date:** 29-APR-19  
**Received Date:** 30-APR-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 02-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 03-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.2	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		62.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4105-4  
**Client ID:** REP042919ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4105  
**Lab File ID:** G6112.D

**Sample Date:** 29-APR-19  
**Received Date:** 30-APR-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 02-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 03-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.5	%				

## Report of Analysis

<b>Client Sample ID:</b> TB043019RM1	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-1	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93834.D	1	05/04/19 00:02	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> TB043019RM1	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-1	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	9.2	ug/l	J
1066-40-6	Silanol, trimethyl-	10.23	5.1	ug/l	JN
	Total TIC, Volatile		5.1	ug/l	J N

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-211	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-2	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93841.D	1	05/04/19 03:22	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-211	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-2	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	11	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78D	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-3	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93842.D	1	05/04/19 03:50	DG	n/a	n/a	V4D4135
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-78D	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-3	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.3	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.17	18	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78D2	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-4	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93843.D	1	05/04/19 04:19	DG	n/a	n/a	V4D4135
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78D2	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-4	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.89	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	11	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB043019ALH1	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-5	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93835.D	1	05/04/19 00:30	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> FB043019ALH1	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-5	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	9.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-18I		<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-6		<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93844.D	1	05/04/19 04:47	DG	n/a	n/a	V4D4135
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-18I	<b>Date Sampled:</b> 04/30/19
<b>Lab Sample ID:</b> JC87354-6	<b>Date Received:</b> 05/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	104%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	10	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4164-1  
**Client ID:** FB043019ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4164  
**Lab File ID:** G6121.D

**Sample Date:** 30-APR-19  
**Received Date:** 01-MAY-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.086
1,4-Dioxane-D8		55.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4164-2  
**Client ID:** GM-78D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4164  
**Lab File ID:** G6122.D

**Sample Date:** 30-APR-19  
**Received Date:** 01-MAY-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4164-3  
**Client ID:** GM-78D2  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4164  
**Lab File ID:** G6123.D

**Sample Date:** 30-APR-19  
**Received Date:** 01-MAY-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		65.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4165-1  
**Client ID:** GM-21I  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4165  
**Lab File ID:** G6124.D

**Sample Date:** 30-APR-19  
**Received Date:** 01-MAY-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.8	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		66.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4165-2  
**Client ID:** GM-18I  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4165  
**Lab File ID:** G6125.D

**Sample Date:** 30-APR-19  
**Received Date:** 01-MAY-19  
**Extract Date:** 01-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG251874

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.5	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		59.3	%				

## Report of Analysis

<b>Client Sample ID:</b> FB050119ALH1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-1	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93831.D	1	05/03/19 22:36	DG	n/a	n/a	V4D4135
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB050119ALH1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-1	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	9	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10624	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-2	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93838.D	1	05/04/19 01:56	DG	n/a	n/a	V4D4135
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> N-10624	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-2	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.83	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.17	18	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10627	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-3	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93839.D	1	05/04/19 02:24	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> N-10627	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-3	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.15	13	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-4	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93840.D	1	05/04/19 02:53	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-4	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.78	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.17	16	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-4	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	8.3	3.0	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	54.1	10	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46667

(2) Prep QC Batch: MP14814

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-4F	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	6.4	3.0	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	12.1	10	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46667

(2) Prep QC Batch: MP14814

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB050119RM1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-5	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93832.D	1	05/03/19 23:05	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.1	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050119RM1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-5	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	10	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB050119RM1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-5	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
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### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/06/19	05/07/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46667

(2) Prep QC Batch: MP14814

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB050119ALH1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-6	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D93833.D	1	05/03/19 23:33	DG	n/a	n/a	V4D4135
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane <sup>b</sup>	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB050119ALH1	<b>Date Sampled:</b> 05/01/19
<b>Lab Sample ID:</b> JC87441-6	<b>Date Received:</b> 05/02/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
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### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.14	8.7	ug/l	J
1825-61-2	Silane, methoxytrimethyl-	8.91	10	ug/l	JN
1066-40-6	Silanol, trimethyl-	10.23	12	ug/l	JN
	Total TIC, Volatile		22	ug/l	J N

- (a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4215-1  
**Client ID:** FB050119ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4215  
**Lab File ID:** G6126.D

**Sample Date:** 01-MAY-19  
**Received Date:** 02-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		66.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4215-2  
**Client ID:** N-10624  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4215  
**Lab File ID:** G6127.D

**Sample Date:** 01-MAY-19  
**Received Date:** 02-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.1	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		48.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4215-3  
**Client ID:** N-10627  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4215  
**Lab File ID:** G6128.D

**Sample Date:** 01-MAY-19  
**Received Date:** 02-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.6	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		47.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4215-4  
**Client ID:** N-10631  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4215  
**Lab File ID:** G6129.D

**Sample Date:** 01-MAY-19  
**Received Date:** 02-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		61.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4215-5RE  
**Client ID:** FB050119RM1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4215  
**Lab File ID:** G6141.D

**Sample Date:** 01-MAY-19  
**Received Date:** 02-MAY-19  
**Extract Date:** 08-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252299

**Analysis Date:** 09-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		70.6	%				

## Report of Analysis

<b>Client Sample ID:</b> FB050219ALH1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-1	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169646.D	1	05/07/19 15:03	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050219ALH1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-1	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW 3-1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-2	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169671.D	1	05/08/19 11:32	ED	n/a	n/a	V2B7656
Run #2	2B169672.D	10	05/08/19 12:01	ED	n/a	n/a	V2B7656

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.56	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	3.0	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	2.8	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	19.2	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	46.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> MW 3-1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-2	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	229 <sup>a</sup>	10	5.3	ug/l	D
75-01-4	Vinyl chloride	8.0	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	98%	81-124%
2037-26-5	Toluene-D8	97%	97%	80-120%
460-00-4	4-Bromofluorobenzene	93%	94%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-17I		<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-3		<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169640.D	1	05/07/19 12:08	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-17I	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-3	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-17D	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-4	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169677.D	1	05/08/19 14:27	ED	n/a	n/a	V2B7656
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-17D	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-4	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB050219RM1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-5	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169647.D	1	05/07/19 15:33	ED	n/a	n/a	V2B7654
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> FB050219RM1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-5	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> HN-24I		<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-6		<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169678.D	1	05/08/19 14:57	ED	n/a	n/a	V2B7656
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	0.65	1.0	0.57	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	4.9	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> HN-24I	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-6	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	6.5	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB050219RM1		<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-7		<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2B169648.D	1	05/07/19 16:02	ED	n/a	n/a	V2B7654
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> TB050219RM1	<b>Date Sampled:</b> 05/02/19
<b>Lab Sample ID:</b> JC87557-7	<b>Date Received:</b> 05/03/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.67	13	ug/l	JN
	Total TIC, Volatile		13	ug/l	J N

N

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-1  
**Client ID:** FB050219ALH1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6130.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		69.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-2  
**Client ID:** MW 3-1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6131.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.6	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		63.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-3  
**Client ID:** GM-17I  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6132.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		65.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-4  
**Client ID:** GM-17D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6133.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.7	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		66.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-5  
**Client ID:** FB050219RM1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6134.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		67.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4282-6  
**Client ID:** HN-24I  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** SM4282  
**Lab File ID:** G6135.D

**Sample Date:** 02-MAY-19  
**Received Date:** 03-MAY-19  
**Extract Date:** 06-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252158

**Analysis Date:** 07-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 08-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.81	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		62.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4520-1  
**Client ID:** FB050819ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4520  
**Lab File ID:** N3412.D

**Sample Date:** 08-MAY-19  
**Received Date:** 09-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		78.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4520-2  
**Client ID:** PLT1MW-06  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4520  
**Lab File ID:** N3413.D

**Sample Date:** 08-MAY-19  
**Received Date:** 09-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		77.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4520-3  
**Client ID:** PLT1MW-04  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4520  
**Lab File ID:** N3414.D

**Sample Date:** 08-MAY-19  
**Received Date:** 09-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		76.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4520-4  
**Client ID:** MW-1 GF  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4520  
**Lab File ID:** N3415.D

**Sample Date:** 08-MAY-19  
**Received Date:** 09-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.6	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		76.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4520-5  
**Client ID:** REP050819ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4520  
**Lab File ID:** N3416.D

**Sample Date:** 08-MAY-19  
**Received Date:** 09-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		61.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4663-1  
**Client ID:** MW-2GF  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4663  
**Lab File ID:** N3417.D

**Sample Date:** 09-MAY-19  
**Received Date:** 11-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		80.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4663-2  
**Client ID:** PLT1MW-05  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4663  
**Lab File ID:** N3418.D

**Sample Date:** 09-MAY-19  
**Received Date:** 11-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		93.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4663-3  
**Client ID:** FB050919ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4663  
**Lab File ID:** N3419.D

**Sample Date:** 09-MAY-19  
**Received Date:** 11-MAY-19  
**Extract Date:** 14-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG252772

**Analysis Date:** 15-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 16-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		98.3	%				

## Report of Analysis

<b>Client Sample ID:</b> FB050819ALH1	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-1	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-06	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-2	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	106	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-06	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-2F	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	104	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-04	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-3	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-04	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-3F	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-1GF	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-4	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-1GF	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-4F	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> REP050819ALH1	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-5	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.8  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> REP050819ALH1	<b>Date Sampled:</b> 05/08/19
<b>Lab Sample ID:</b> JC87920-5F	<b>Date Received:</b> 05/09/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.9  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/13/19	05/18/19 EAL	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46743

(2) Prep QC Batch: MP14977

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-2GF	<b>Date Sampled:</b> 05/09/19
<b>Lab Sample ID:</b> JC87974-1	<b>Date Received:</b> 05/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	290	10	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46742

(2) Prep QC Batch: MP15022

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-2GF	<b>Date Sampled:</b> 05/09/19
<b>Lab Sample ID:</b> JC87974-1F	<b>Date Received:</b> 05/10/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	326	10	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46742

(2) Prep QC Batch: MP15022

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-05	<b>Date Sampled:</b> 05/09/19
<b>Lab Sample ID:</b> JC87974-2	<b>Date Received:</b> 05/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	866	10	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46742

(2) Prep QC Batch: MP15022

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1MW-05	<b>Date Sampled:</b> 05/09/19
<b>Lab Sample ID:</b> JC87974-2F	<b>Date Received:</b> 05/10/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	862	10	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46742

(2) Prep QC Batch: MP15022

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB050919ALH1	<b>Date Sampled:</b> 05/09/19
<b>Lab Sample ID:</b> JC87974-3	<b>Date Received:</b> 05/10/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	05/15/19	05/17/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46742

(2) Prep QC Batch: MP15022

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-1	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A250003.D	1	05/21/19 06:17	ED	n/a	n/a	VA9657
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.78	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-1	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.16	5.9	ug/l	J
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-1	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	488	10	ug/l	1	05/21/19	05/24/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46783

(2) Prep QC Batch: MP15211

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-1F	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	502	10	ug/l	1	05/21/19	05/24/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46783

(2) Prep QC Batch: MP15211

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB051719RM1	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-2	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A249993.D	1	05/21/19 01:26	ED	n/a	n/a	VA9657
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB051719RM1	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-2	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB051719RM1	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-2	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	05/21/19	05/24/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA46783

(2) Prep QC Batch: MP15211

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB051719RM1		<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-3		<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A249994.D	1	05/21/19 01:55	ED	n/a	n/a	VA9657
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB051719RM1	<b>Date Sampled:</b> 05/17/19
<b>Lab Sample ID:</b> JC88392-3	<b>Date Received:</b> 05/17/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4914-1  
**Client ID:** GM-15SR  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4914  
**Lab File ID:** G6238.D

**Sample Date:** 17-MAY-19  
**Received Date:** 18-MAY-19  
**Extract Date:** 20-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253140

**Analysis Date:** 21-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 27-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.21	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		87.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4914-2  
**Client ID:** FB051719RM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4914  
**Lab File ID:** G6239.D

**Sample Date:** 17-MAY-19  
**Received Date:** 18-MAY-19  
**Extract Date:** 20-MAY-19  
**Extracted By:** AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253140

**Analysis Date:** 21-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 27-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		71.8	%				

## Report of Analysis

<b>Client Sample ID:</b> FB052019RM1	<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-1	<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B154082.D	1	05/26/19 21:03	MD	n/a	n/a	V3B6897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane <sup>a</sup>	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> FB052019RM1	<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-1	<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%		80-120%
17060-07-0	1,2-Dichloroethane-D4	112%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	88%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB052019RM1	<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-2	<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B154083.D	1	05/26/19 21:32	MD	n/a	n/a	V3B6897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane <sup>a</sup>	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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4

## Report of Analysis

<b>Client Sample ID:</b> TB052019RM1	<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-2	<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	89%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.62	19	ug/l	JN
	Total TIC, Volatile		19	ug/l	J N

N

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15I		<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-3		<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D148015.D	1	05/31/19 09:59	BK	n/a	n/a	V3D6332
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK) <sup>a</sup>	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15I	<b>Date Sampled:</b> 05/20/19
<b>Lab Sample ID:</b> JC88524-3	<b>Date Received:</b> 05/21/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	2.2	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	94%		81-124%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.46	21	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4962-1  
**Client ID:** FB052019RM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4962  
**Lab File ID:** G6256.D

**Sample Date:** 20-MAY-19  
**Received Date:** 21-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		58.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM4962-2  
**Client ID:** GM-15I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM4962  
**Lab File ID:** G6257.D

**Sample Date:** 20-MAY-19  
**Received Date:** 21-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.11	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		74.3	%				

## Report of Analysis

<b>Client Sample ID:</b> TB052119RM1	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-1	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D147942.D	1	05/29/19 14:39	DG	n/a	n/a	V3D6328
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	J
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	J
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB052119RM1	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-1	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1825-61-2	Silane, methoxytrimethyl-	3.06	5.3	ug/l	JN
1066-40-6	Silanol, trimethyl-	3.71	8.1	ug/l	JN
107-46-0	Disiloxane, hexamethyl-	4.35	10	ug/l	JN
	Total TIC, Volatile		23.4	ug/l	J N

N

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> WFB052119MM1	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-2	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D147943.D	1	05/29/19 15:04	DG	n/a	n/a	V3D6328
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	J
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	J
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> WFB052119MM1	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-2	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	94%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15D		<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-3		<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D147947.D	1	05/29/19 16:45	DG	n/a	n/a	V3D6328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane <sup>a</sup>	ND	2.0	1.6	ug/l	J
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15D	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-3	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	90%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.48	13	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15D2	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-4	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D148019.D	1	05/31/19 11:40	BK	n/a	n/a	V3D6332
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.61	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK) <sup>a</sup>	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.4	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15D2	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-4	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	6.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	94%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.46	16	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-36D	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-5	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D148020.D	1	05/31/19 12:05	BK	n/a	n/a	V3D6332
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK) <sup>a</sup>	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-36D	<b>Date Sampled:</b> 05/21/19
<b>Lab Sample ID:</b> JC88588-5	<b>Date Received:</b> 05/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	93%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.46	24	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5005-1  
**Client ID:** FB052119MM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5005  
**Lab File ID:** G6258.D

**Sample Date:** 21-MAY-19  
**Received Date:** 22-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		77.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5005-2  
**Client ID:** GM-15D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5005  
**Lab File ID:** G6259.D

**Sample Date:** 21-MAY-19  
**Received Date:** 22-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.087	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		79.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5005-3  
**Client ID:** GM-15D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5005  
**Lab File ID:** G6260.D

**Sample Date:** 21-MAY-19  
**Received Date:** 22-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		67.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5005-4  
**Client ID:** GM-36D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5005  
**Lab File ID:** G6261.D

**Sample Date:** 21-MAY-19  
**Received Date:** 22-MAY-19  
**Extract Date:** 23-MAY-19  
**Extracted By:** PUR/A  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253448

**Analysis Date:** 28-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.96	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		60.3	%				

## Report of Analysis

<b>Client Sample ID:</b> TB052319MM1		<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-1		<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B91158.D	1	05/29/19 22:17	DG	n/a	n/a	V4B3863
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB052319MM1	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-1	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	7.97	53	ug/l	JN
	Total TIC, Volatile		53	ug/l	J N

N

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB052319MM1	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-2	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B91159.D	1	05/29/19 22:45	DG	n/a	n/a	V4B3863
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB052319MM1	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-2	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-34D	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-3	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B91160.D	1	05/29/19 23:13	DG	n/a	n/a	V4B3863
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	1.3	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	6.1	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	5.9	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-34D	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-3	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	186	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	16	ug/l	J
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-34D2		<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-4		<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B91161.D	1	05/29/19 23:41	DG	n/a	n/a	V4B3863
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	1.5	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	6.3	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-34D2	<b>Date Sampled:</b> 05/23/19
<b>Lab Sample ID:</b> JC88779-4	<b>Date Received:</b> 05/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	95.7	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.59	5.2	ug/l	J
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5119-1  
**Client ID:** FB052319MM1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5119  
**Lab File ID:** G6324.D

**Sample Date:** 23-MAY-19  
**Received Date:** 24-MAY-19  
**Extract Date:** 28-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253710

**Analysis Date:** 30-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 31-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		78.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5119-2  
**Client ID:** GM-34D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5119  
**Lab File ID:** G6325.D

**Sample Date:** 23-MAY-19  
**Received Date:** 24-MAY-19  
**Extract Date:** 28-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253710

**Analysis Date:** 30-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 31-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		13	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		75.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** SM5119-3  
**Client ID:** GM-34D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** SM5119  
**Lab File ID:** G6326.D

**Sample Date:** 23-MAY-19  
**Received Date:** 24-MAY-19  
**Extract Date:** 28-MAY-19  
**Extracted By:** LR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG253710

**Analysis Date:** 30-MAY-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 31-MAY-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		9.6	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.8	%				

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-1 <sup>(1)</sup> -- --	BPOW 5-2 <sup>(1)</sup> -- --	BPOW 5-3 BPOW5-3_20190816 8/16/2019
<b><u>Volatile Organic Compounds (VOCs)</u></b> <sup>(2)</sup>				
1,1,1-Trichloroethane		--	--	< 0.50
1,1,1,2-Tetrachloroethane		--	--	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		--	--	< 1.0
1,1,2-Trichloroethane		--	--	< 0.50
1,1-Dichloroethane		--	--	< 0.50
1,1-Dichloroethene		--	--	< 0.50
1,2-Dichloroethane		--	--	< 0.50
1,2-Dichloropropane		--	--	< 0.50
2-Butanone (MEK)		--	--	< 5.0
4-Methyl-2-Pentanone		--	--	< 2.0
Acetone		--	--	< 5.0
Benzene		--	--	< 0.50
Bromodichloromethane		--	--	< 0.50
Bromoform		--	--	< 0.50
Bromomethane		--	--	< 0.50
Carbon Disulfide		--	--	< 0.50
Carbon Tetrachloride		--	--	< 0.50
Chlorobenzene		--	--	< 0.50
Chlorodibromomethane		--	--	< 0.50
Chloroethane		--	--	< 0.50
Chloroform		--	--	< 0.50
Chloromethane		--	--	< 0.50
cis-1,2-Dichloroethene		--	--	< 0.50
cis-1,3-Dichloropropene		--	--	< 0.50
Dichloromethane		--	--	< 0.50
Ethylbenzene		--	--	< 0.50
m&p-Xylenes		--	--	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		--	--	< 2.0
o-Xylene		--	--	< 0.50
Styrene (Monomer)		--	--	< 0.50
Tetrachloroethene		--	--	< 0.50
Toluene		--	--	< 0.50
trans-1,2-Dichloroethene		--	--	< 0.50
trans-1,3-Dichloropropene		--	--	< 0.50
Trichloroethene		--	--	< 0.50
Vinyl chloride		--	--	< 0.50
<b>Total VOCs</b> <sup>(3)</sup>		--	--	0
<b>1,4-Dioxane</b> <sup>(4)</sup>		--	--	<b>2.45</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-3 REP081619DC1 8/16/2019	BPOW 5-4 BPOW5-4_20190815 8/15/2019	BPOW 5-5 BPOW5-5_20190813 8/13/2019
<b><u>Volatile Organic Compounds (VOCs) <sup>(2)</sup></u></b>				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50 J	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50 J	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50 J	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50 J	< 0.50
Bromoform		< 0.50	< 0.50 J	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50 J	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0 J	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50 J	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50
<b>Total VOCs <sup>(3)</sup></b>		<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(4)</sup></b>		<b>1.84</b>	<b>1.05</b>	<b>1.76</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

CONSTITUENT Units (ug/L)	Well:	BPOW 5-6	BPOW 5-7
	Sample ID:	BPOW5-6_20190813	BPOW5-7_20190814
	Date:	8/13/2019	8/14/2019
<b><u>Volatile Organic Compounds (VOCs) <sup>(2)</sup></u></b>			
1,1,1-Trichloroethane		< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50
Bromoform		< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50
Chloroform		< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50
Toluene		< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50
<b>Total VOCs <sup>(3)</sup></b>		<b>0</b>	<b>0</b>
<b>1,4-Dioxane <sup>(4)</sup></b>		<b>0.307</b>	<b>&lt; 0.200</b>

See last page for Notes and Abbreviations

**Table 1.**  
**Concentrations of Volatile Organic Compounds**  
**and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Well paved over. Not sampled this quarter.
- (2) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
- (3) Total VOCs are rounded to two significant figures.
- (4) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
J	Constituent Value is Estimated
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
<0.50	Constituent not detected above its laboratory detection limit

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

Well:	BPOW 6-1	BPOW 6-2	BPOW 6-3
Sample ID:	BPOW6-1_20190819	BPOW6-2_20190819	BPOW6-3_20190821
CONSTITUENT			
units (ug/L)	8/19/2019	8/19/2019	8/21/2019
<b>Volatile Organic Compounds (VOCs)<sup>(1)</sup></b>			
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50
Chlorodibromomethane	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50
Dichloromethane	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50
m&p-Xylenes	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)	< 2.0	< 2.0	< 2.0
o-Xylene	< 0.50	< 0.50	< 0.50
Styrene (Monomer)	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50
Trichloroethene	< 0.50	< 0.50	< 0.50
Vinyl chloride	< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>	<b>0.181 J</b>	<b>&lt; 0.200</b>	<b>&lt; 0.200</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

Well: Sample ID: Date:	BPOW 6-4 BPOW6-4_20190821 8/21/2019	BPOW 6-5 BPOW6-5_20190820 8/20/2019	BPOW 6-6 BPOW6-6_20190820 8/20/2019
CONSTITUENT units (ug/L)			
<b>Volatile Organic Compounds (VOCs)<sup>(1)</sup></b>			
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50
Chlorodibromomethane	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50
Dichloromethane	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50
m&p-Xylenes	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)	< 2.0	< 2.0	< 2.0
o-Xylene	< 0.50	< 0.50	< 0.50
Styrene (Monomer)	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50
Trichloroethene	< 0.50	< 0.50	< 0.50
Vinyl chloride	< 0.50	< 0.50	< 0.50
<b>Total VOCs<sup>(2)</sup></b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1,4-Dioxane<sup>(3)</sup></b>	<b>0.276</b>	<b>&lt; 0.200</b>	<b>&lt; 0.200</b>

See last page for Notes and Abbreviations.

**Table 1.**  
**Concentrations of Volatile Organic Compounds and**  
**1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,**  
**Third Quarter 2019**  
**Operable Unit 2 (Groundwater),**  
**Bethpage, New York**

**Notes and Abbreviations:**

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.  
 (2) Total VOCs are rounded to two significant figures.  
 (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.  
 Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

<b>Bold</b>	Constituent detected
J	Constituent value is estimated
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
<0.50	Constituent not detected above its laboratory detection limit

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-5 <b>Lab Sample ID:</b> JC93261-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120605.D	1	08/20/19 22:42	RS	n/a	n/a	V1B5829
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-5 <b>Lab Sample ID:</b> JC93261-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
---	---

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	83%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	9.49	.6	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-6 <b>Lab Sample ID:</b> JC93261-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120606.D	1	08/20/19 23:13	RS	n/a	n/a	V1B5829
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-6 <b>Lab Sample ID:</b> JC93261-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
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4.2  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.68	4.1	ug/l	J
	unknown	<del>9.49</del>	<del>.57</del>	<del>ug/l</del>	<del>J</del> R
	Total TIC, Volatile		<del>57</del>	<del>ug/l</del>	<del>J</del> R

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB081319DC1 <b>Lab Sample ID:</b> JC93261-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120607.D	1	08/20/19 23:45	RS	n/a	n/a	V1B5829
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081319DC1 <b>Lab Sample ID:</b> JC93261-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/13/19 <b>Date Received:</b> 08/14/19 <b>Percent Solids:</b> n/a
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4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	1	ug/l	J
1066-40-6	Silanol, trimethyl-	9.49	.6	ug/l	JN
	Total TIC, Volatile		.6	ug/l	JN

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC93261X	<b>Date Collected:</b> 08/13/2019 12:25	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 488215001	<b>Date Received:</b> 08/21/2019 08:50	
<b>Client Sample:</b> 1X	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Client ID:</b> BPOW5-5	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Batch ID:</b> 1914286	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Run Date:</b> 09/11/2019 15:08	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Prep Date:</b> 09/10/2019 16:30	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
<b>Data File:</b> s0901119.B\s6i1117.D	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.76	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93261X	Date Collected: 08/13/2019 12:05	Matrix: WATER
Lab Sample ID: 488215002	Date Received: 08/21/2019 08:50	
Client Sample: 2X	Client: ACTL003	Project: ACTL00316
Client ID: BPOW5-6	Method: EPA 522	SOP Ref: GL-OA-E-073
Batch ID: 1914286	Inst: MSD6.I	Dilution: 1
Run Date: 09/11/2019 15:32	Analyst: JMB3	Inj. Vol: 1 uL
Prep Date: 09/10/2019 16:30	Aliquot: 100 mL	Final Volume: 2 mL
Data File: s0901119.B\s6i1118.D	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.307	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-7	<b>Date Sampled:</b> 08/14/19
<b>Lab Sample ID:</b> JC93325-1	<b>Date Received:</b> 08/15/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120620.D	1	08/21/19 15:39	RS	n/a	n/a	V1B5830
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-7	<b>Date Sampled:</b> 08/14/19
<b>Lab Sample ID:</b> JC93325-1	<b>Date Received:</b> 08/15/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	83%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	3	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB081419DC1 <b>Lab Sample ID:</b> JC93325-2 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/14/19 <b>Date Received:</b> 08/15/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120621.D	1	08/21/19 16:10	RS	n/a	n/a	V1B5830
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081419DC1	<b>Date Sampled:</b> 08/14/19
<b>Lab Sample ID:</b> JC93325-2	<b>Date Received:</b> 08/15/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.70	1	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC93325X	<b>Date Collected:</b> 08/14/2019 11:55	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 488210001	<b>Date Received:</b> 08/21/2019 08:50	
<b>Client Sample:</b> 1X	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Client ID:</b> BPOW5-7	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Batch ID:</b> 1914286	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Run Date:</b> 09/11/2019 13:53	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Prep Date:</b> 09/10/2019 16:30	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
<b>Data File:</b> s0901119.B\s6i1114.D	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-4 <b>Lab Sample ID:</b> JC93403-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/15/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120638.D	1	08/22/19 13:46	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	J
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	J
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	J
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	J
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	J
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-4 <b>Lab Sample ID:</b> JC93403-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/15/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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4.1  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	103%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB081519DC1	Date Sampled: 08/15/19
Lab Sample ID: JC93403-2	Date Received: 08/16/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120639.D	1	08/22/19 14:17	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	J
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	J
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	J
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	J
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	J
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081519DC1	<b>Date Sampled:</b> 08/15/19
<b>Lab Sample ID:</b> JC93403-2	<b>Date Received:</b> 08/16/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	.87	ug/l	J
1066-40-6	Silanol, trimethyl-	9.50	6	ug/l	JN
	Total TIC, Volatile		6	ug/l	J N

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC93403X	<b>Date Collected:</b> 08/15/2019 11:25	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 488205001	<b>Date Received:</b> 08/21/2019 08:50	
<b>Client Sample:</b> 1X	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Client ID:</b> BPOW5-4	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Batch ID:</b> 1914286	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Run Date:</b> 09/11/2019 12:41	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Prep Date:</b> 09/10/2019 16:30	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
<b>Data File:</b> s0901119.B\s6i1111.D	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.05	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-3 <b>Lab Sample ID:</b> JC93401-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/16/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120646.D	1	08/22/19 17:57	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-3 <b>Lab Sample ID:</b> JC93401-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/16/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	3.9	ug/l	J
	Silanol, trimethyl-	9.51	.61	ug/l	JN
	Total TIC, Volatile		.61	ug/l	JN

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP081619DC1 <b>Lab Sample ID:</b> JC93401-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/16/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120647.D	1	08/22/19 18:28	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> REP081619DC1	<b>Date Sampled:</b> 08/16/19
<b>Lab Sample ID:</b> JC93401-2	<b>Date Received:</b> 08/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	3.6	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB081619DC1	Date Sampled: 08/16/19
Lab Sample ID: JC93401-3	Date Received: 08/16/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120643.D	1	08/22/19 16:23	BK	n/a	n/a	V1B5831
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081619DC1 <b>Lab Sample ID:</b> JC93401-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/16/19 <b>Date Received:</b> 08/16/19 <b>Percent Solids:</b> n/a
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4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	83%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	.93	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC93401X	<b>Date Collected:</b> 08/16/2019 12:05	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 488207001	<b>Date Received:</b> 08/21/2019 08:50	
<b>Client Sample:</b> 1X	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Client ID:</b> BPOW5-3	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Batch ID:</b> 1914895	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Run Date:</b> 09/12/2019 12:23	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Prep Date:</b> 09/12/2019 08:30	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
<b>Data File:</b> s091219.B\s6i1209.D	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		2.45	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93401X	Date Collected: 08/16/2019 12:00	Matrix: WATER
Lab Sample ID: 488207002	Date Received: 08/21/2019 08:50	
Client Sample: 2X	Client: ACTL003	Project: ACTL00316
Client ID: REP081619DC1	Method: EPA 522	SOP Ref: GL-OA-E-073
Batch ID: 1914895	Inst: MSD6.I	Dilution: 1
Run Date: 09/12/2019 12:47	Analyst: JMB3	Inj. Vol: 1 uL
Prep Date: 09/12/2019 08:30	Aliquot: 100 mL	Final Volume: 2 mL
Data File: s091219.B\s6i1210.D	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.84	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-1 <b>Lab Sample ID:</b> JC93575-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/19/19 <b>Date Received:</b> 08/20/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120651.D	1	08/22/19 20:34	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-1 <b>Lab Sample ID:</b> JC93575-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/19/19 <b>Date Received:</b> 08/20/19 <b>Percent Solids:</b> n/a
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4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	<del>9.50</del>	<del>.75</del>	<del>ug/l</del>	<del>JN</del> R
	Total TIC, Volatile		<del>.75</del>	<del>ug/l</del>	<del>J</del> R

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-2	<b>Date Sampled:</b> 08/19/19
<b>Lab Sample ID:</b> JC93575-2	<b>Date Received:</b> 08/20/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120652.D	1	08/22/19 21:06	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-2	<b>Date Sampled:</b> 08/19/19
<b>Lab Sample ID:</b> JC93575-2	<b>Date Received:</b> 08/20/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB081919DC1	Date Sampled: 08/19/19
Lab Sample ID: JC93575-3	Date Received: 08/20/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120653.D	1	08/22/19 21:37	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB081919DC1 <b>Lab Sample ID:</b> JC93575-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 08/19/19 <b>Date Received:</b> 08/20/19 <b>Percent Solids:</b> n/a
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4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	1	ug/l	J
1066-40-6	Silanol, trimethyl-	9.50	15	ug/l	JN
	Total TIC, Volatile		15	ug/l	JN

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93575X  
 Lab Sample ID: 488530001  
  
 Client ID: BPOW6-1  
 Batch ID: 1914895  
 Run Date: 09/13/2019 11:15  
 Prep Date: 09/12/2019 08:30  
 Data File: s091319.B\s6i1307.D

Date Collected: 08/19/2019 11:40  
 Date Received: 08/23/2019 08:40  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.181	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93575X  
 Lab Sample ID: 488530002  
  
 Client ID: BPOW6-2  
 Batch ID: 1914895  
 Run Date: 09/13/2019 12:54  
 Prep Date: 09/12/2019 08:30  
 Data File: s091319.B\s6i1311.D

Date Collected: 08/19/2019 11:20  
 Date Received: 08/23/2019 08:40  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-5		<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-1		<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120648.D	1	08/22/19 19:00	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-5	<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-1	<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	<del>9.50</del>	<del>.99</del>	<del>ug/l</del>	<del>JN R</del>
	Total TIC, Volatile		<del>.99</del>	<del>ug/l</del>	<del>J R</del>

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-6		<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-2		<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120649.D	1	08/22/19 19:32	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-6	<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-2	<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	83%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	3.3	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB082019DC1		<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-3		<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120650.D	1	08/22/19 20:03	BK	n/a	n/a	V1B5831
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	0.29	2.0	0.22	ug/l	J
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
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## Report of Analysis

<b>Client Sample ID:</b> TB082019DC1	<b>Date Sampled:</b> 08/20/19
<b>Lab Sample ID:</b> JC93665-3	<b>Date Received:</b> 08/21/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.70	.92	ug/l	J
1066-40-6	Silanol, trimethyl-	9.50	37	ug/l	JN
	Total TIC, Volatile		37	ug/l	J N

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC criteria bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93665X  
 Lab Sample ID: 488525001  
  
 Client ID: BPOW6-5  
 Batch ID: 1914895  
 Run Date: 09/13/2019 10:25  
 Prep Date: 09/12/2019 08:30  
 Data File: s091319.B\s6i1305.D

Date Collected: 08/20/2019 11:35  
 Date Received: 08/23/2019 08:40  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93665X  
 Lab Sample ID: 488525002  
  
 Client ID: BPOW6-6  
 Batch ID: 1914895  
 Run Date: 09/13/2019 10:50  
 Prep Date: 09/12/2019 08:30  
 Data File: s091319.B\s6i1306.D

Date Collected: 08/20/2019 11:05  
 Date Received: 08/23/2019 08:40  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

# Report of Analysis

<b>Client Sample ID:</b> BPOW6-3	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-1	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120754.D	1	08/30/19 16:56	BK	n/a	n/a	V1B5837
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-3	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-1	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-4	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-2	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120755.D	1	08/30/19 17:27	BK	n/a	n/a	V1B5837
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-4	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-2	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB082119BW1	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-3	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120756.D	1	08/30/19 17:59	BK	n/a	n/a	V1B5837
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB082119BW1	<b>Date Sampled:</b> 08/21/19
<b>Lab Sample ID:</b> JC93747-3	<b>Date Received:</b> 08/22/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.49	5.6	ug/l	JN
	Total TIC, Volatile		5.6	ug/l	JN

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93747X  
 Lab Sample ID: 488823001  
  
 Client ID: BPOW6-3  
 Batch ID: 1914895  
 Run Date: 09/12/2019 13:12  
 Prep Date: 09/12/2019 08:30  
 Data File: s091219.B\s6i1211.D

Date Collected: 08/21/2019 11:45  
 Date Received: 08/28/2019 09:00  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC93747X  
 Lab Sample ID: 488823002  
  
 Client ID: BPOW6-4  
 Batch ID: 1914895  
 Run Date: 09/13/2019 13:43  
 Prep Date: 09/12/2019 08:30  
 Data File: s091319.B\s6i1312.D

Date Collected: 08/21/2019 11:45  
 Date Received: 08/28/2019 09:00  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.276	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-1	<b>Date Sampled:</b> 09/09/19
<b>Lab Sample ID:</b> JC94722-1	<b>Date Received:</b> 09/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120888.D	1	09/11/19 16:57	BK	n/a	n/a	V1B5844
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b> BPOW2-1	<b>Date Sampled:</b> 09/09/19
<b>Lab Sample ID:</b> JC94722-1	<b>Date Received:</b> 09/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>c</sup>	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Silanol, trimethyl	<del>9.49</del>	<del>2.1</del>	<del>ug/l</del>	<del>J R</del>
	Total TIC, Volatile		<del>2.1</del>	<del>ug/l</del>	<del>J R</del>

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.
- (c) This compound in BS is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-2		<b>Date Sampled:</b> 09/09/19
<b>Lab Sample ID:</b> JC94722-2		<b>Date Received:</b> 09/10/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120889.D	1	09/11/19 17:28	BK	n/a	n/a	V1B5844
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-2	<b>Date Sampled:</b> 09/09/19
<b>Lab Sample ID:</b> JC94722-2	<b>Date Received:</b> 09/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>c</sup>	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.67	7.5	ug/l	J
1066-40-6	Silanol, trimethyl-	<del>9.49</del>	<del>2.4</del>	<del>ug/l</del>	<del>JN</del> R
	Total TIC, Volatile		<del>2.4</del>	<del>ug/l</del>	<del>I</del> R

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.
- (c) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	TB090919BW	<b>Date Sampled:</b>	09/09/19
<b>Lab Sample ID:</b>	JC94722-3	<b>Date Received:</b>	09/10/19
<b>Matrix:</b>	AQ - Trip Blank Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	EPA 524.2 REV 4.1		
<b>Project:</b>	Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120887.D	1	09/11/19 16:25	BK	n/a	n/a	V1B5844
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.5	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	0.78	2.0	0.22	ug/l	J
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB090919BW	<b>Date Sampled:</b> 09/09/19
<b>Lab Sample ID:</b> JC94722-3	<b>Date Received:</b> 09/10/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>c</sup>	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.68	1.2	ug/l	J
1066-40-6	Silanol, trimethyl-	9.49	160	ug/l	JN
	unknown	11.67	.78	ug/l	J N
	Total TIC, Volatile		160.78	ug/l	J N

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) Associated CCV and BS outside of control limits high, sample was ND.
- (c) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC94722X  
 Lab Sample ID: 490388001  
  
 Client ID: BPOW2-1  
 Batch ID: 1917493  
 Run Date: 10/01/2019 13:34  
 Prep Date: 09/30/2019 13:30  
 Data File: s100119.B\s6j0111.D

Date Collected: 09/09/2019 11:35  
 Date Received: 09/17/2019 08:45  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.22	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC94722X  
 Lab Sample ID: 490388002  
  
 Client ID: BPOW2-2  
 Batch ID: 1917493  
 Run Date: 10/01/2019 14:51  
 Prep Date: 09/30/2019 13:30  
 Data File: s100119.B\s6j0114.D

Date Collected: 09/09/2019 12:00  
 Date Received: 09/17/2019 08:45  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.738	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW 2-3		<b>Date Sampled:</b> 09/12/19
<b>Lab Sample ID:</b> JC95055-2		<b>Date Received:</b> 09/13/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120931.D	1	09/18/19 12:59	BK	n/a	n/a	V1B5848
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW 2-3	<b>Date Sampled:</b> 09/12/19
<b>Lab Sample ID:</b> JC95055-2	<b>Date Received:</b> 09/13/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.31	7.3	ug/l	JN
	Total TIC, Volatile		7.3	ug/l	J N

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB091219MW1	<b>Date Sampled:</b> 09/12/19
<b>Lab Sample ID:</b> JC95055-3	<b>Date Received:</b> 09/13/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B120932.D	1	09/18/19 13:31	BK	n/a	n/a	V1B5848
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB091219MW1	<b>Date Sampled:</b> 09/12/19
<b>Lab Sample ID:</b> JC95055-3	<b>Date Received:</b> 09/13/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC95055X  
 Lab Sample ID: 490386001  
  
 Client ID: BPOW 2-3  
 Batch ID: 1917493  
 Run Date: 10/01/2019 13:10  
 Prep Date: 09/30/2019 13:30  
 Data File: s100119.B\s6j0110.D

Date Collected: 09/12/2019 11:15  
 Date Received: 09/17/2019 08:45  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		3.90	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-4 <b>Lab Sample ID:</b> JC97634-1 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/28/19 <b>Date Received:</b> 10/29/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121609.D	1	11/08/19 18:50	BK	n/a	n/a	V1B5882
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-4	<b>Date Sampled:</b> 10/28/19
<b>Lab Sample ID:</b> JC97634-1	<b>Date Received:</b> 10/29/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-7 <b>Lab Sample ID:</b> JC97634-2 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/28/19 <b>Date Received:</b> 10/29/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121610.D	1	11/08/19 19:22	BK	n/a	n/a	V1B5882
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-7 <b>Lab Sample ID:</b> JC97634-2 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/28/19 <b>Date Received:</b> 10/29/19 <b>Percent Solids:</b> n/a
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4.2  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102819BW1 <b>Lab Sample ID:</b> JC97634-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/28/19 <b>Date Received:</b> 10/29/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121608.D	1	11/08/19 18:19	BK	n/a	n/a	V1B5882
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102819BW1	<b>Date Sampled:</b> 10/28/19
<b>Lab Sample ID:</b> JC97634-3	<b>Date Received:</b> 10/29/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
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### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%		
460-00-4	4-Bromofluorobenzene	93%		70-130%		
CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q	
1066-40-6	Silanol, trimethyl-	9.19	.72	ug/l	JN	
	Total TIC, Volatile		.72	ug/l	J N	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP102819BW1 <b>Lab Sample ID:</b> JC97634-4 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/28/19 <b>Date Received:</b> 10/29/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121611.D	1	11/08/19 19:53	BK	n/a	n/a	V1B5882
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> REP102819BW1	<b>Date Sampled:</b> 10/28/19
<b>Lab Sample ID:</b> JC97634-4	<b>Date Received:</b> 10/29/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.4  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97634X  
 Lab Sample ID: 494955001  
  
 Client ID: BPOW5-4  
 Batch ID: 1935556  
 Run Date: 11/09/2019 05:31  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0839.D

Date Collected: 10/28/2019 12:00  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.04	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97634X  
 Lab Sample ID: 494955002  
  
 Client ID: BPOW5-7  
 Batch ID: 1935556  
 Run Date: 11/09/2019 06:23  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0841.D

Date Collected: 10/28/2019 12:35  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97634X  
 Lab Sample ID: 494955003  
  
 Client ID: REP102819BW1  
 Batch ID: 1935556  
 Run Date: 11/09/2019 07:15  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0843.D

Date Collected: 10/28/2019 12:00  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-5 <b>Lab Sample ID:</b> JC97711-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/29/19 <b>Date Received:</b> 10/30/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121455.D	1	11/04/19 11:16	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	J
75-25-2	Bromoform	ND	0.50	0.27	ug/l	J
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	J
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	J
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	J
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	J
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	J
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	J
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	J
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	J
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	J
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-5	<b>Date Sampled:</b> 10/29/19
<b>Lab Sample ID:</b> JC97711-1	<b>Date Received:</b> 10/30/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-6 <b>Lab Sample ID:</b> JC97711-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/29/19 <b>Date Received:</b> 10/30/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121456.D	1	11/04/19 11:47	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

Client Sample ID: BPOW5-6		Date Sampled: 10/29/19
Lab Sample ID: JC97711-2		Date Received: 10/30/19
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 524.2 REV 4.1		
Project: Navy Wells OU2, Bethpage, NY		

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	94%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102919ALH1 <b>Lab Sample ID:</b> JC97711-3 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/29/19 <b>Date Received:</b> 10/30/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121459.D	1	11/04/19 13:20	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102919ALH1	<b>Date Sampled:</b> 10/29/19
<b>Lab Sample ID:</b> JC97711-3	<b>Date Received:</b> 10/30/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97711X  
 Lab Sample ID: 494951001  
  
 Client ID: BPOW5-5  
 Batch ID: 1935556  
 Run Date: 11/09/2019 02:56  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0833.D

Date Collected: 10/29/2019 11:40  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.60	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97711X  
 Lab Sample ID: 494951002  
  
 Client ID: BPOW5-6  
 Batch ID: 1935556  
 Run Date: 11/09/2019 04:39  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0837.D

Date Collected: 10/29/2019 11:12  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.458	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-3 <b>Lab Sample ID:</b> JC97789-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/30/19 <b>Date Received:</b> 10/31/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121633.D	1	11/11/19 11:07	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-3 <b>Lab Sample ID:</b> JC97789-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/30/19 <b>Date Received:</b> 10/31/19 <b>Percent Solids:</b> n/a
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4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	86%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.20	.77	ug/l	JN
	Total TIC, Volatile		.77	ug/l	J N

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound	J = Indicates an estimated value
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## Report of Analysis

<b>Client Sample ID:</b> BPOW6-4 <b>Lab Sample ID:</b> JC97789-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/30/19 <b>Date Received:</b> 10/31/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121634.D	1	11/11/19 11:38	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-4	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-2	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.20	.82	ug/l	JN
	Total TIC, Volatile		.82	ug/l	J N

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-5 <b>Lab Sample ID:</b> JC97789-3 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/30/19 <b>Date Received:</b> 10/31/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121635.D	1	11/11/19 12:09	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-5	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-3	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-6	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-4	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121636.D	1	11/11/19 12:40	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-6	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-4	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.4  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB103019ALH1	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-5	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121632.D	1	11/11/19 10:36	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB103019ALH1	<b>Date Sampled:</b> 10/30/19
<b>Lab Sample ID:</b> JC97789-5	<b>Date Received:</b> 10/31/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.5  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97789X  
 Lab Sample ID: 495312001  
  
 Client ID: BPOW6-3  
 Batch ID: 1937865  
 Run Date: 11/13/2019 13:05  
 Prep Date: 11/12/2019 14:00  
 Data File: s111219b.B\s6k1281.D

Date Collected: 10/30/2019 12:30  
 Date Received: 11/06/2019 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC97789X	<b>Date Collected:</b> 10/30/2019 12:45	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 495312002	<b>Date Received:</b> 11/06/2019 09:20	
<b>Client ID:</b> BPOW6-4	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1937865	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/13/2019 14:21	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/12/2019 14:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s111219b.B\s6k1284.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.323	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC97789X	<b>Date Collected:</b> 10/30/2019 11:40	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 495312003	<b>Date Received:</b> 11/06/2019 09:20	
<b>Client ID:</b> BPOW6-5	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1937865	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/13/2019 14:46	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/12/2019 14:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s111219b.B\s6k1285.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97789X  
 Lab Sample ID: 495312004  
  
 Client ID: BPOW6-6  
 Batch ID: 1937865  
 Run Date: 11/13/2019 15:13  
 Prep Date: 11/12/2019 14:00  
 Data File: s111219b.B\s6k1286.D

Date Collected: 10/30/2019 11:30  
 Date Received: 11/06/2019 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-1	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-1	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121640.D	1	11/11/19 14:45	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-1	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-1	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	85%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-2	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-2	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121641.D	1	11/11/19 15:16	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW6-2	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-2	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	84%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-3	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-3	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121642.D	1	11/11/19 15:47	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW5-3	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-3	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB103119ALH1 <b>Lab Sample ID:</b> JC97872-4 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/31/19 <b>Date Received:</b> 11/01/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121639.D	1	11/11/19 14:14	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB103119ALH1	<b>Date Sampled:</b> 10/31/19
<b>Lab Sample ID:</b> JC97872-4	<b>Date Received:</b> 11/01/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.4  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97872X  
 Lab Sample ID: 495299001  
  
 Client ID: BPOW6-1  
 Batch ID: 1937865  
 Run Date: 11/13/2019 11:51  
 Prep Date: 11/12/2019 14:00  
 Data File: s111219b.B\s6k1278.D

Date Collected: 10/31/2019 12:00  
 Date Received: 11/06/2019 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.221	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97872X	Date Collected: 10/31/2019 11:30	Matrix: WATER
Lab Sample ID: 495299002	Date Received: 11/06/2019 09:20	
Client ID: BPOW6-2	Client: ACTL003	Project: ACTL00316
Batch ID: 1937865	Method: EPA 522	SOP Ref: GL-OA-E-073
Run Date: 11/13/2019 12:15	Inst: MSD6.I	Dilution: 1
Prep Date: 11/12/2019 14:00	Analyst: JMB3	Inj. Vol: 1 uL
Data File: s111219b.B\s6k1279.D	Aliquot: 100 mL	Final Volume: 2 mL
	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97872X  
 Lab Sample ID: 495299003  
  
 Client ID: BPOW5-3  
 Batch ID: 1937865  
 Run Date: 11/13/2019 12:40  
 Prep Date: 11/12/2019 14:00  
 Data File: s111219b.B\s6k1280.D

Date Collected: 10/31/2019 16:30  
 Date Received: 11/06/2019 09:20  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		2.05	ug/L	0.100	0.100	0.200

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-1  
**Client ID:** RE119D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3311.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-1  
**Client ID:** RE119D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3311.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		101.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		115.	%				
Dibromofluoromethane		107.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-2  
**Client ID:** FB102819ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3310.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>		8.6	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-2  
**Client ID:** FB102819ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3310.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		101.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		114.	%				
Dibromofluoromethane		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-3  
**Client ID:** TB102819ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3309.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-3  
**Client ID:** TB102819ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** T3309.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		115.	%				
Dibromofluoromethane		107.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-1  
**Client ID:** RE119D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** G8651.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265425

**Analysis Date:** 04-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		77.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1377-2  
**Client ID:** FB102819ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1377  
**Lab File ID:** G8652.D

**Sample Date:** 28-OCT-19  
**Received Date:** 29-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265425

**Analysis Date:** 04-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.086
1,4-Dioxane-D8		50.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-1  
**Client ID:** RE118D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3312.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-1  
**Client ID:** RE118D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3312.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		116.	%				
Dibromofluoromethane		107.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-2  
**Client ID:** FB102919ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3313.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-2  
**Client ID:** FB102919ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3313.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		114.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-3  
**Client ID:** TB102919BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3307.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
<b>Methylene Chloride</b>	J	1.3	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-3  
**Client ID:** TB102919BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** T3307.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265412

**Analysis Date:** 31-OCT-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		112.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-1  
**Client ID:** RE118D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** G8653.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265425

**Analysis Date:** 04-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		71.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1420-2  
**Client ID:** FB102919ALH1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1420  
**Lab File ID:** G8654.D

**Sample Date:** 29-OCT-19  
**Received Date:** 30-OCT-19  
**Extract Date:** 31-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265425

**Analysis Date:** 04-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 07-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.089
1,4-Dioxane-D8		79.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-1  
**Client ID:** RE133D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3388.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-1  
**Client ID:** RE133D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3388.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		95.9	%				
Toluene-d8		95.7	%				
1,2-Dichloroethane-d4		78.8	%				
Dibromofluoromethane		93.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-2  
**Client ID:** RE133D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3389.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>	<b>5.0</b>	<del>4.0</del>	<b>UB</b>	ug/L	1	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-2  
**Client ID:** RE133D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3389.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		94.0	%				
Toluene-d8		97.0	%				
1,2-Dichloroethane-d4		78.6	%				
Dibromofluoromethane		91.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-3  
**Client ID:** FB103119ALH1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3379.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
<b>Carbon Disulfide</b>	J	0.60	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>	J	3.9	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-3  
**Client ID:** FB103119ALH1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3379.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		99.3	%				
Toluene-d8		99.1	%				
1,2-Dichloroethane-d4		89.0	%				
Dibromofluoromethane		98.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-4  
**Client ID:** REP103119BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3390.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-4  
**Client ID:** REP103119BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3390.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		94.7	%				
Toluene-d8		96.8	%				
1,2-Dichloroethane-d4		79.1	%				
Dibromofluoromethane		92.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-5  
**Client ID:** TB103119SV1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3378.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-5  
**Client ID:** TB103119SV1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** T3378.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG265745

**Analysis Date:** 05-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		98.3	%				
Toluene-d8		98.2	%				
1,2-Dichloroethane-d4		85.6	%				
Dibromofluoromethane		96.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-1  
**Client ID:** RE133D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** G8818.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.25	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8	*	119.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-2  
**Client ID:** RE133D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** G8819.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8	*	118.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-3  
**Client ID:** FB103119ALH1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** G8820.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		68.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1563-4  
**Client ID:** REP103119BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1563  
**Lab File ID:** G8821.D

**Sample Date:** 31-OCT-19  
**Received Date:** 01-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 10-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 11-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.23	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		111.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-1  
**Client ID:** TB110119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3018.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-1  
**Client ID:** TB110119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3018.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		100.	%				
Toluene-d8		99.9	%				
1,2-Dichloroethane-d4		113.	%				
Dibromofluoromethane		101.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-2  
**Client ID:** FB110119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3019.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-2  
**Client ID:** FB110119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3019.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		118.	%				
Dibromofluoromethane		103.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-3  
**Client ID:** RE128D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3027.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-3  
**Client ID:** RE128D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3027.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		100.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		104.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-4  
**Client ID:** RE128D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3044.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-4  
**Client ID:** RE128D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** C3044.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		103.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-2  
**Client ID:** FB110119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** G8794.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		97.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-3  
**Client ID:** RE128D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** G8795.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8	*	117.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1615-4  
**Client ID:** RE128D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1615  
**Lab File ID:** G8796.D

**Sample Date:** 01-NOV-19  
**Received Date:** 02-NOV-19  
**Extract Date:** 05-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265764

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.14	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8	*	123.	%				

## Report of Analysis

Client Sample ID:	TB100119ALH1	Date Sampled:	10/01/19
Lab Sample ID:	JC96045-1	Date Received:	10/02/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149723.D	1	10/14/19 10:38	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB100119ALH1	<b>Date Sampled:</b> 10/01/19
<b>Lab Sample ID:</b> JC96045-1	<b>Date Received:</b> 10/02/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	6.2	ug/l	J
	alkane	1.80	7	ug/l	J
	Total TIC, Volatile		7	ug/l	J

(a) Associated CCV outside of control limits high, sample was ND.

(b) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: FB100119BW1	Date Sampled: 10/01/19
Lab Sample ID: JC96045-2	Date Received: 10/02/19
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149724.D	1	10/14/19 11:03	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	J
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> FB100119BW1	<b>Date Sampled:</b> 10/01/19
<b>Lab Sample ID:</b> JC96045-2	<b>Date Received:</b> 10/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	7.9	ug/l	J
	alkane	1.81	6.8	ug/l	J
	Total TIC, Volatile		6.8	ug/l	J

(a) Associated CCV outside of control limits high, sample was ND.

(b) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-17D	Date Sampled:	10/01/19
Lab Sample ID:	JC96045-3	Date Received:	10/02/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149726.D	1	10/14/19 11:54	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-17D <b>Lab Sample ID:</b> JC96045-3 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/01/19 <b>Date Received:</b> 10/02/19 <b>Percent Solids:</b> n/a
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	J
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	8.2	ug/l	J
	alkane	1.80	6.6	ug/l	J
	Total TIC, Volatile		6.6	ug/l	J

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) MDL from current instrument.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB100119ALH1	Date Sampled:	10/01/19
Lab Sample ID:	JC96045-4	Date Received:	10/02/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149725.D	1	10/14/19 11:29	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	J
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB100119ALH1	<b>Date Sampled:</b> 10/01/19
<b>Lab Sample ID:</b> JC96045-4	<b>Date Received:</b> 10/02/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	6.6	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-17I <b>Lab Sample ID:</b> JC96045-5 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/01/19 <b>Date Received:</b> 10/02/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149727.D	1	10/14/19 12:19	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-17I	<b>Date Sampled:</b> 10/01/19
<b>Lab Sample ID:</b> JC96045-5	<b>Date Received:</b> 10/02/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	8.7	ug/l	J
	alkane	1.81	5.9	ug/l	J
	Total TIC, Volatile		5.9	ug/l	J

(a) Associated CCV outside of control limits high, sample was ND.

(b) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0292-1  
**Client ID:** FB100119BW1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0292  
**Lab File ID:** G8174.D

**Sample Date:** 01-OCT-19  
**Received Date:** 02-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		53.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0292-2  
**Client ID:** GM-17D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0292  
**Lab File ID:** G8175.D

**Sample Date:** 01-OCT-19  
**Received Date:** 02-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		59.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0292-3  
**Client ID:** FB100119ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0292  
**Lab File ID:** G8176.D

**Sample Date:** 01-OCT-19  
**Received Date:** 02-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.12	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		44.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0292-4  
**Client ID:** GM-17I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0292  
**Lab File ID:** G8177.D

**Sample Date:** 01-OCT-19  
**Received Date:** 02-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		53.0	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-18D <b>Lab Sample ID:</b> JC96259-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/04/19 <b>Date Received:</b> 10/04/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97120.D	1	10/13/19 16:52	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-18D	<b>Date Sampled:</b> 10/04/19
<b>Lab Sample ID:</b> JC96259-1	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.65	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	92%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-181 <b>Lab Sample ID:</b> JC96259-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/04/19 <b>Date Received:</b> 10/04/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97121.D	1	10/13/19 17:20	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-18I	<b>Date Sampled:</b> 10/04/19
<b>Lab Sample ID:</b> JC96259-2	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB100419BW1	Date Sampled: 10/04/19
Lab Sample ID: JC96259-3	Date Received: 10/04/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97129.D	1	10/13/19 21:07	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB100419BW1	<b>Date Sampled:</b> 10/04/19
<b>Lab Sample ID:</b> JC96259-3	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	84%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS

**Lab ID:** TM0467-1

**Client ID:** GM-18D

**Project:** OU2-Northrop Grumman, Bethpage, NY

**SDG:** TM0467

**Lab File ID:** G8239.D

**Sample Date:** 04-OCT-19

**Received Date:** 05-OCT-19

**Extract Date:** 10-OCT-19

**Extracted By:** AC/HD

**Extraction Method:** SW846 3520C

**Lab Prep Batch:** WG263792

**Analysis Date:** 11-OCT-19

**Analyst:** JCG

**Analysis Method:** SW846 8270D SIM

**Matrix:** AQ

**% Solids:** NA

**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		9.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0467-2  
**Client ID:** GM-18I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0467  
**Lab File ID:** G8240.D

**Sample Date:** 04-OCT-19  
**Received Date:** 05-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.0	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		58.8	%				

## Report of Analysis

Client Sample ID: GM-73D3	Date Sampled: 10/08/19
Lab Sample ID: JC96493-1	Date Received: 10/09/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 System, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149728.D	1	10/14/19 12:44	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	1.5	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-73D3	<b>Date Sampled:</b> 10/08/19
<b>Lab Sample ID:</b> JC96493-1	<b>Date Received:</b> 10/09/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 System, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	1.8	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	12	ug/l	J
	alkane	1.81	6.2	ug/l	J
	Total TIC, Volatile		6.2	ug/l	J

(a) Associated CCV outside of control limits high, sample was ND.

(b) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-73D2	Date Sampled:	10/08/19
Lab Sample ID:	JC96493-2	Date Received:	10/09/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149729.D	1	10/14/19 13:09	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	J
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	1.6	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-73D2 <b>Lab Sample ID:</b> JC96493-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 System, Bethpage, NY	<b>Date Sampled:</b> 10/08/19 <b>Date Received:</b> 10/09/19 <b>Percent Solids:</b> n/a
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4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	29.6	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	13	ug/l	J
	alkane	1.80	5.8	ug/l	J
	Total TIC, Volatile		5.8	ug/l	J

(a) Associated CCV outside of control limits high, sample was ND.

(b) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: GM-73D	Date Sampled: 10/08/19
Lab Sample ID: JC96493-3	Date Received: 10/09/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 System, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149730.D	1	10/14/19 13:34	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

Client Sample ID: GM-73D	Date Sampled: 10/08/19
Lab Sample ID: JC96493-3	Date Received: 10/09/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 System, Bethpage, NY	

4.3  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	7.3	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	12	ug/l	J
	alkane	1.81	6	ug/l	J
	Total TIC, Volatile		6	ug/l	J

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: FB100819CK1	Date Sampled: 10/08/19
Lab Sample ID: JC96493-4	Date Received: 10/09/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 System, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D149735.D	1	10/14/19 15:39	EH	n/a	n/a	V3D6400
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>b</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>b</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>b</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>b</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>b</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>b</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB100819CK1 <b>Lab Sample ID:</b> JC96493-4 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 System, Bethpage, NY	<b>Date Sampled:</b> 10/08/19 <b>Date Received:</b> 10/09/19 <b>Percent Solids:</b> n/a
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4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	7.7	ug/l	J
	alkane	1.80	6.1	ug/l	J
	Total TIC, Volatile		6.1	ug/l	J

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) MDL from current instrument.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID: TB100819CK1	Date Sampled: 10/08/19
Lab Sample ID: JC96493-5	Date Received: 10/09/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 System, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>b</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>b</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	6.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) MDL from current instrument.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0559-1  
**Client ID:** GM-73D3  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0559  
**Lab File ID:** G8245.D

**Sample Date:** 08-OCT-19  
**Received Date:** 09-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 12-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL
1,4-Dioxane		1.0	ug/L	1	.25	0.23
1,4-Dioxane-D8		65.3	%			

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0559-2  
**Client ID:** GM-73D2  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0559  
**Lab File ID:** G8246.D

**Sample Date:** 08-OCT-19  
**Received Date:** 09-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 12-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL
1,4-Dioxane		2.0	ug/L	1	.25	0.23
1,4-Dioxane-D8		54.6	%			

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0559-3  
**Client ID:** GM-73D  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0559  
**Lab File ID:** G8247.D

**Sample Date:** 08-OCT-19  
**Received Date:** 09-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 12-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL
1,4-Dioxane		2.4	ug/L	1	.25	0.24
1,4-Dioxane-D8		50.0	%			

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0559-4  
**Client ID:** FB100819CK1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0559  
**Lab File ID:** G8248.D

**Sample Date:** 08-OCT-19  
**Received Date:** 09-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 12-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 28-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26
1,4-Dioxane-D8		55.4	%			

## Report of Analysis

<b>Client Sample ID:</b> GM-39DA <b>Lab Sample ID:</b> JC96574-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/09/19 <b>Date Received:</b> 10/10/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A195252.D	1	10/18/19 01:27	DG	n/a	n/a	V1A8406
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-39DA	<b>Date Sampled:</b> 10/09/19
<b>Lab Sample ID:</b> JC96574-1	<b>Date Received:</b> 10/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.6	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-39DB <b>Lab Sample ID:</b> JC96574-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/09/19 <b>Date Received:</b> 10/10/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A195253.D	1	10/18/19 01:52	DG	n/a	n/a	V1A8406
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-39DB	<b>Date Sampled:</b> 10/09/19
<b>Lab Sample ID:</b> JC96574-2	<b>Date Received:</b> 10/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	43.3	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: GM-35D2	Date Sampled: 10/09/19
Lab Sample ID: JC96574-3	Date Received: 10/10/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A195254.D	1	10/18/19 02:16	DG	n/a	n/a	V1A8406
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.4	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-35D2	<b>Date Sampled:</b> 10/09/19
<b>Lab Sample ID:</b> JC96574-3	<b>Date Received:</b> 10/10/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	21.3	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB100919BW1 <b>Lab Sample ID:</b> JC96574-4 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/09/19 <b>Date Received:</b> 10/10/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A195242.D	1	10/17/19 21:20	DG	n/a	n/a	V1A8406
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB100919BW1	<b>Date Sampled:</b> 10/09/19
<b>Lab Sample ID:</b> JC96574-4	<b>Date Received:</b> 10/10/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB100919CK1 <b>Lab Sample ID:</b> JC96574-5 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/09/19 <b>Date Received:</b> 10/10/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A195243.D	1	10/17/19 21:45	DG	n/a	n/a	V1A8406
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB100919CK1	<b>Date Sampled:</b> 10/09/19
<b>Lab Sample ID:</b> JC96574-5	<b>Date Received:</b> 10/10/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0642-1  
**Client ID:** GM-39DA  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0642  
**Lab File ID:** U7211.D

**Sample Date:** 09-OCT-19  
**Received Date:** 10-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		77.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0642-2  
**Client ID:** GM-39DB  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0642  
**Lab File ID:** U7212.D

**Sample Date:** 09-OCT-19  
**Received Date:** 10-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.3	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		75.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0642-3RE  
**Client ID:** GM-35D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0642  
**Lab File ID:** G8306.D

**Sample Date:** 09-OCT-19  
**Received Date:** 10-OCT-19  
**Extract Date:** 16-OCT-19  
**Extracted By:** HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264220

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.5	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		60.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0642-4  
**Client ID:** FB100919BW1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0642  
**Lab File ID:** U7214.D

**Sample Date:** 09-OCT-19  
**Received Date:** 10-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		84.5	%				

## Report of Analysis

Client Sample ID: GM-78D	Date Sampled: 10/10/19
Lab Sample ID: JC96674-1	Date Received: 10/11/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97285.D	1	10/18/19 10:42	JP	n/a	n/a	V4D4301
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-78D	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-1	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.1	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-78D2	Date Sampled:	10/10/19
Lab Sample ID:	JC96674-2	Date Received:	10/11/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97286.D	1	10/18/19 11:10	JP	n/a	n/a	V4D4301
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-78D2	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-2	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.81	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-79D	Date Sampled:	10/10/19
Lab Sample ID:	JC96674-3	Date Received:	10/11/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97287.D	1	10/18/19 11:38	JP	n/a	n/a	V4D4301
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-79D	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-3	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	15.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: GM-79I	Date Sampled: 10/10/19
Lab Sample ID: JC96674-4	Date Received: 10/11/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97319.D	1	10/21/19 16:31	JP	n/a	n/a	V4D4302
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-79I	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-4	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB101019BW1 <b>Lab Sample ID:</b> JC96674-5 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/10/19 <b>Date Received:</b> 10/11/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97317.D	1	10/21/19 15:35	JP	n/a	n/a	V4D4302
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	2.5	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> FB101019BW1	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-5	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: TB101019BW1	Date Sampled: 10/10/19
Lab Sample ID: JC96674-6	Date Received: 10/11/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97318.D	1	10/21/19 16:03	JP	n/a	n/a	V4D4302
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> TB101019BW1	<b>Date Sampled:</b> 10/10/19
<b>Lab Sample ID:</b> JC96674-6	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	92%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

---

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0710-1  
**Client ID:** GM-78D2  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0710  
**Lab File ID:** U7215.D

**Sample Date:** 10-OCT-19  
**Received Date:** 11-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		14	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		77.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0710-2  
**Client ID:** GM-78D  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0710  
**Lab File ID:** U7216.D

**Sample Date:** 10-OCT-19  
**Received Date:** 11-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		84.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0710-3  
**Client ID:** GM-79D  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0710  
**Lab File ID:** U7217.D

**Sample Date:** 10-OCT-19  
**Received Date:** 11-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.5	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		71.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0710-4  
**Client ID:** GM-79I  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0710  
**Lab File ID:** U7218.D

**Sample Date:** 10-OCT-19  
**Received Date:** 11-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.6	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		83.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0710-5  
**Client ID:** FB101019BW1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0710  
**Lab File ID:** U7219.D

**Sample Date:** 10-OCT-19  
**Received Date:** 11-OCT-19  
**Extract Date:** 11-OCT-19  
**Extracted By:** HD/JM  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263896

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.27	ug/L	1	.25	0.27	0.091
1,4-Dioxane-D8		66.4	%				

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW6	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-1	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	147	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW6	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-1F	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	147	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW5	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-2	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	779	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW5	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-2F	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	783	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW4	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-3	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> PLT1-MW4	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-3F	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB101119ARH1	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-4	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> REP101119CK1	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-5	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.8  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	782	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> REP101119CK1	<b>Date Sampled:</b> 10/11/19
<b>Lab Sample ID:</b> JC96673-5F	<b>Date Received:</b> 10/11/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.9  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	769	10	ug/l	1	10/17/19	10/18/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47650

(2) Prep QC Batch: MP17887

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RL = Reporting Limit

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0773-1  
**Client ID:** PLT1-MW6  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0773  
**Lab File ID:** G8300.D

**Sample Date:** 11-OCT-19  
**Received Date:** 12-OCT-19  
**Extract Date:** 15-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264122

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		64.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0773-2  
**Client ID:** PLT1-MW5  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0773  
**Lab File ID:** G8301.D

**Sample Date:** 11-OCT-19  
**Received Date:** 12-OCT-19  
**Extract Date:** 15-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264122

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		69.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0773-3  
**Client ID:** PLT1-MW4  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0773  
**Lab File ID:** G8302.D

**Sample Date:** 11-OCT-19  
**Received Date:** 12-OCT-19  
**Extract Date:** 15-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264122

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.092	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		56.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0773-4  
**Client ID:** FB101119ARH1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0773  
**Lab File ID:** G8307.D

**Sample Date:** 11-OCT-19  
**Received Date:** 12-OCT-19  
**Extract Date:** 16-OCT-19  
**Extracted By:** HD/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264220

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		48.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0773-5  
**Client ID:** REP101119CK1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM0773  
**Lab File ID:** G8308.D

**Sample Date:** 11-OCT-19  
**Received Date:** 12-OCT-19  
**Extract Date:** 16-OCT-19  
**Extracted By:** HD/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264220

**Analysis Date:** 17-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		58.3	%				

## Report of Analysis

Client Sample ID:	FW-03	Date Sampled:	10/14/19
Lab Sample ID:	JC96806-1	Date Received:	10/15/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X184676.D	1	10/21/19 19:19	ED	n/a	n/a	VX7923
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	0.90	1.0	0.57	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane <sup>b</sup>	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	2.3	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	1.3	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FW-03	<b>Date Sampled:</b> 10/14/19
<b>Lab Sample ID:</b> JC96806-1	<b>Date Received:</b> 10/15/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	2.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB101419ALH1	Date Sampled:	10/14/19
Lab Sample ID:	JC96806-2	Date Received:	10/15/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X184672.D	1	10/21/19 17:24	ED	n/a	n/a	VX7923
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	7.2	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	1.1	2.0	0.95	ug/l	J
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane <sup>b</sup>	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB101419ALH1 <b>Lab Sample ID:</b> JC96806-2 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/14/19 <b>Date Received:</b> 10/15/19 <b>Percent Solids:</b> n/a
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4.2  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB101419ALH1	Date Sampled:	10/14/19
Lab Sample ID:	JC96806-3	Date Received:	10/15/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X184673.D	1	10/21/19 17:53	ED	n/a	n/a	VX7923
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform <sup>a</sup>	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane <sup>b</sup>	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB101419ALH1	<b>Date Sampled:</b> 10/14/19
<b>Lab Sample ID:</b> JC96806-3	<b>Date Received:</b> 10/15/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	90%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.10	6.6	ug/l	JN
	Total TIC, Volatile		6.6	ug/l	J

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0808-1  
**Client ID:** FW-03  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0808  
**Lab File ID:** G8360.D

**Sample Date:** 14-OCT-19  
**Received Date:** 15-OCT-19  
**Extract Date:** 17-OCT-19  
**Extracted By:** JR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264322

**Analysis Date:** 18-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 22-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.13	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		62.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0808-2  
**Client ID:** FB101419ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0808  
**Lab File ID:** G8361.D

**Sample Date:** 14-OCT-19  
**Received Date:** 15-OCT-19  
**Extract Date:** 17-OCT-19  
**Extracted By:** JR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264322

**Analysis Date:** 18-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 22-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.25	ug/L	1	.25	0.25	0.086
1,4-Dioxane-D8		52.0	%				

## Report of Analysis

<b>Client Sample ID:</b> TB100219BW1	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-1	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97125.D	1	10/13/19 19:14	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB100219BW1	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-1	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	10.22	6.9	ug/l	JN
	Total TIC, Volatile		6.9	ug/l	J N

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-38D		<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-2		<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97118.D	1	10/13/19 15:55	MD	n/a	n/a	V4D4294
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	0.78	1.0	0.60	ug/l	J
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.60	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	3.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-38D	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-2	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	104	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	87%		81-124%
2037-26-5	Toluene-D8	89%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-38D2	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-3	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97119.D	1	10/13/19 16:24	MD	n/a	n/a	V4D4294
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	0.94	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	5.2	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	1.2	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.55	1.0	0.51	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	0.58	1.0	0.54	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-38D2	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-3	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	11.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	92%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB100219ALH1	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-4	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97126.D	1	10/13/19 19:42	MD	n/a	n/a	V4D4294
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	9.9	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB100219ALH1	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-4	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	85%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW-1GF	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-5	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47599

(2) Prep QC Batch: MP17759

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-1GF		<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-5F		<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Groundwater Filtered		<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

4.6  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47599

(2) Prep QC Batch: MP17759

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-2GF	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-6	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	232	10	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47599

(2) Prep QC Batch: MP17759

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-2GF	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-6F	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.8  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	234	10	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47599

(2) Prep QC Batch: MP17759

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB100219BW1	<b>Date Sampled:</b> 10/02/19
<b>Lab Sample ID:</b> JC96154-7	<b>Date Received:</b> 10/03/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.9  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/08/19	10/10/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47599

(2) Prep QC Batch: MP17759

RL = Reporting Limit

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-1  
**Client ID:** MW-1GF  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8178.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.2	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		73.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-2  
**Client ID:** MW-2GF  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8179.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		9.5	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		68.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-3  
**Client ID:** FB100219BW1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8180.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		66.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-4  
**Client ID:** GM-38D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8181.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.6	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		65.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-5  
**Client ID:** GM-38D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8182.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.8	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		54.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0357-6  
**Client ID:** FB100219ALH1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0357  
**Lab File ID:** G8183.D

**Sample Date:** 02-OCT-19  
**Received Date:** 03-OCT-19  
**Extract Date:** 03-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263228

**Analysis Date:** 08-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 09-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		54.1	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-33D2	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-1	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E156882.D	1	10/23/19 17:58	ED	n/a	n/a	V2E6961
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	2.1	5.0	1.9	ug/l	J
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-33D2	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-1	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	9.6	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10631		<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-2		<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E156945.D	1	10/25/19 10:04	ED	n/a	n/a	V2E6965
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane <sup>a</sup>	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> N-10631 <b>Lab Sample ID:</b> JC96946-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 10/15/19 <b>Date Received:</b> 10/16/19 <b>Percent Solids:</b> n/a
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4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.68	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-2	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	4.4	3.0	ug/l	1	10/22/19	10/23/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/22/19	10/23/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47687

(2) Prep QC Batch: MP17972

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> N-10631	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-2F	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/22/19	10/23/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/22/19	10/23/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47687

(2) Prep QC Batch: MP17972

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> FB101519TD1	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-3	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E156880.D	1	10/23/19 16:57	ED	n/a	n/a	V2E6961
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> FB101519TD1	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-3	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		80-120%
17060-07-0	1,2-Dichloroethane-D4	90%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB101519TD1	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-3	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/28/19	10/29/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>
Chromium	< 10	10	ug/l	1	10/28/19	10/29/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47716

(2) Prep QC Batch: MP18042

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB101519TD1		<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-4		<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E156881.D	1	10/23/19 17:28	ED	n/a	n/a	V2E6961
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB101519TD1	<b>Date Sampled:</b> 10/15/19
<b>Lab Sample ID:</b> JC96946-4	<b>Date Received:</b> 10/16/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0858-1  
**Client ID:** GM-33D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0858  
**Lab File ID:** U7349.D

**Sample Date:** 15-OCT-19  
**Received Date:** 16-OCT-19  
**Extract Date:** 18-OCT-19  
**Extracted By:** HD/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264391

**Analysis Date:** 22-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		13	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		73.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0858-2  
**Client ID:** N-10631  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0858  
**Lab File ID:** U7352.D

**Sample Date:** 15-OCT-19  
**Received Date:** 16-OCT-19  
**Extract Date:** 18-OCT-19  
**Extracted By:** HD/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264391

**Analysis Date:** 22-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.0	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		62.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0858-3  
**Client ID:** FB101519TD1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0858  
**Lab File ID:** U7353.D

**Sample Date:** 15-OCT-19  
**Received Date:** 16-OCT-19  
**Extract Date:** 18-OCT-19  
**Extracted By:** HD/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG264391

**Analysis Date:** 22-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		62.4	%				

## Report of Analysis

Client Sample ID:	MW3-1	Date Sampled:	10/03/19
Lab Sample ID:	JC96264-1	Date Received:	10/04/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A198348.D	1	10/17/19 11:08	DG	n/a	n/a	V2A8567
Run #2	2A198349.D	10	10/17/19 11:36	DG	n/a	n/a	V2A8567

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	1.4	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	1.6	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	13.2	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	57.4	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> MW3-1	<b>Date Sampled:</b> 10/03/19
<b>Lab Sample ID:</b> JC96264-1	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	230 <sup>b</sup>	10	5.3	ug/l	D
75-01-4	Vinyl chloride	4.9	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	95%	96%	81-124%
2037-26-5	Toluene-D8	98%	98%	80-120%
460-00-4	4-Bromofluorobenzene	98%	97%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

(b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

Client Sample ID: <del>GW-34D</del> GM-34D	Date Sampled: 10/03/19
Lab Sample ID: JC96264-2	Date Received: 10/04/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97142.D	1	10/14/19 09:46	JP	n/a	n/a	V4D4295
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.86	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	4.3	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	6.8	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: <del>CW-34D</del> GM-34D Lab Sample ID: JC96264-2 Matrix: AQ - Ground Water Method: <del>SW846 8260C</del> Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	Date Sampled: 10/03/19 Date Received: 10/04/19 Percent Solids: n/a
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	159	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	84%		81-124%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) This compound in BS is outside in house QC limits bias high. Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB100319BW1	Date Sampled:	10/03/19
Lab Sample ID:	JC96264-3	Date Received:	10/04/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97132.D	1	10/13/19 22:32	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis



<b>Client Sample ID:</b> FB100319BW1	<b>Date Sampled:</b> 10/03/19
<b>Lab Sample ID:</b> JC96264-3	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	85%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB100319TD1	Date Sampled:	10/03/19
Lab Sample ID:	JC96264-4	Date Received:	10/04/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D97133.D	1	10/13/19 23:00	MD	n/a	n/a	V4D4294
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB100319TD1	<b>Date Sampled:</b> 10/03/19
<b>Lab Sample ID:</b> JC96264-4	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	86%		81-124%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	REP100319TD1	Date Sampled:	10/03/19
Lab Sample ID:	JC96264-5	Date Received:	10/04/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A198350.D	1	10/17/19 12:04	DG	n/a	n/a	V2A8567
Run #2	2A198351.D	10	10/17/19 12:33	DG	n/a	n/a	V2A8567

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	1.3	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	1.6	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	13.1	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	55.5	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP100319TD1	<b>Date Sampled:</b> 10/03/19
<b>Lab Sample ID:</b> JC96264-5	<b>Date Received:</b> 10/04/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	229 <sup>b</sup>	10	5.3	ug/l	D
75-01-4	Vinyl chloride	4.5	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	98%	81-124%
2037-26-5	Toluene-D8	98%	96%	80-120%
460-00-4	4-Bromofluorobenzene	96%	99%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits low.
- (b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0416-1RA  
**Client ID:** MW3-1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** TM0416  
**Lab File ID:** G8252.D

**Sample Date:** 03-OCT-19  
**Received Date:** 04-OCT-19  
**Extract Date:** 07-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263544

**Analysis Date:** 14-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		10	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		59.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0416-2  
**Client ID:** GM-34D  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** TM0416  
**Lab File ID:** G8234.D

**Sample Date:** 03-OCT-19  
**Received Date:** 04-OCT-19  
**Extract Date:** 07-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263544

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		14	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		69.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0416-3  
**Client ID:** FB100319BW1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** TM0416  
**Lab File ID:** G8235.D

**Sample Date:** 03-OCT-19  
**Received Date:** 04-OCT-19  
**Extract Date:** 07-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263544

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		61.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0416-4  
**Client ID:** REP100319BW1  
**Project:** OU2-Northrop Grumman, Bethpage NY  
**SDG:** TM0416  
**Lab File ID:** G8236.D

**Sample Date:** 03-OCT-19  
**Received Date:** 04-OCT-19  
**Extract Date:** 07-OCT-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263544

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		10	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		63.7	%				

## Report of Analysis

Client Sample ID: TB100719BW1	Date Sampled: 10/07/19
Lab Sample ID: JC96403-1	Date Received: 10/08/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B95049.D	1	10/17/19 21:48	EH	n/a	n/a	V4B4049
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TB100719BW1	<b>Date Sampled:</b> 10/07/19
<b>Lab Sample ID:</b> JC96403-1	<b>Date Received:</b> 10/08/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	110%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: <del>GW-74D</del> GM-74D	Date Sampled: 10/07/19
Lab Sample ID: JC96403-2	Date Received: 10/08/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B95061.D	1	10/18/19 03:18	EH	n/a	n/a	V4B4049
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

Client Sample ID: <del>GW-74D</del> GM-74D	Date Sampled: 10/07/19
Lab Sample ID: JC96403-2	Date Received: 10/08/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	1.1	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	109%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	17	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB100719SV1	Date Sampled:	10/07/19
Lab Sample ID:	JC96403-3	Date Received:	10/08/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B95050.D	1	10/17/19 22:15	EH	n/a	n/a	V4B4049
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB100719SV1	<b>Date Sampled:</b> 10/07/19
<b>Lab Sample ID:</b> JC96403-3	<b>Date Received:</b> 10/08/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	111%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: <del>CW-74D2</del> GM-74D2	Date Sampled: 10/07/19
Lab Sample ID: JC96403-4	Date Received: 10/08/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: <del>SW846 8260C</del>	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B95062.D	1	10/18/19 03:45	EH	n/a	n/a	V4B4049
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	0.61	1.0	0.57	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	0.64	1.0	0.59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.9	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
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## Report of Analysis

Client Sample ID: <del>CW-74D2</del> <span style="color: red;">GM-74D2</span> Lab Sample ID: JC96403-4 Matrix: AQ - Ground Water Method: <del>SW846 8260C</del> Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	Date Sampled: 10/07/19 Date Received: 10/08/19 Percent Solids: n/a
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4.4  
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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	6.7	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	110%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	22	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: <del>GW-74D3</del> GM-74D3	Date Sampled: 10/07/19
Lab Sample ID: JC96403-6	Date Received: 10/08/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4B95063.D	1	10/18/19 04:13	EH	n/a	n/a	V4B4049
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) <sup>a</sup>	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	4.7	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

Client Sample ID: <del>GW-74D3</del> GM-74D3	Date Sampled: 10/07/19
Lab Sample ID: JC96403-6	Date Received: 10/08/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	5.9	1.0	0.53	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	108%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.58	16	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0504-1  
**Client ID:** GM-74D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0504  
**Lab File ID:** G8241.D

**Sample Date:** 07-OCT-19  
**Received Date:** 08-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.9	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		59.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0504-2  
**Client ID:** FB100719SV1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0504  
**Lab File ID:** G8242.D

**Sample Date:** 07-OCT-19  
**Received Date:** 08-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		55.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0504-3  
**Client ID:** GM-74D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0504  
**Lab File ID:** G8243.D

**Sample Date:** 07-OCT-19  
**Received Date:** 08-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 11-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.2	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		58.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM0504-5  
**Client ID:** GM-74D3  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM0504  
**Lab File ID:** G8244.D

**Sample Date:** 07-OCT-19  
**Received Date:** 08-OCT-19  
**Extract Date:** 10-OCT-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG263792

**Analysis Date:** 12-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 14-OCT-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.3	ug/L	1	.25	0.27	0.093
1,4-Dioxane-D8		61.0	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-15D		<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-1		<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150222.D	1	10/31/19 09:00	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15D	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-1	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.1  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	0.35	0.50	0.20	ug/l	J
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	18	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15D2		<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-2		<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150223.D	1	10/31/19 09:25	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	0.45	0.50	0.23	ug/l	J
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	0.23	0.50	0.20	ug/l	J
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	0.53	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	2.5	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15D2	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-2	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	6.5	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	12	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB102319TD1	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-3	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150236.D	1	10/31/19 14:56	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	9.6	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> FB102319TD1	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-3	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.3  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	10	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15I		<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-4		<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150224.D	1	10/31/19 09:50	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	J
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15I	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-4	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	3.9	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	17	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-5	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150225.D	1	10/31/19 10:16	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	0.54	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-5	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	4.4	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	20	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-5	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	498	10	ug/l	1	10/30/19	10/31/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47724

(2) Prep QC Batch: MP18096

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> GM-15SR	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-5F	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Groundwater Filtered	<b>Percent Solids:</b> n/a
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.6  
4

### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	430	10	ug/l	1	10/30/19	10/31/19 ND	SW846 6010D <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA47724

(2) Prep QC Batch: MP18096

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> TB102319TD1		<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-6		<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150237.D	1	10/31/19 15:21	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.7  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102319TD1	<b>Date Sampled:</b> 10/23/19
<b>Lab Sample ID:</b> JC97377-6	<b>Date Received:</b> 10/24/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.7  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	7.3	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1212-1  
**Client ID:** GM-15D  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1212  
**Lab File ID:** G8588.D

**Sample Date:** 23-OCT-19  
**Received Date:** 24-OCT-19  
**Extract Date:** 28-OCT-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265204

**Analysis Date:** 30-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		61.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1212-2  
**Client ID:** GM-15D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1212  
**Lab File ID:** G8596.D

**Sample Date:** 23-OCT-19  
**Received Date:** 24-OCT-19  
**Extract Date:** 28-OCT-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265204

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		77.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1212-3  
**Client ID:** FB102319TD1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1212  
**Lab File ID:** G8597.D

**Sample Date:** 23-OCT-19  
**Received Date:** 24-OCT-19  
**Extract Date:** 28-OCT-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265204

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		45.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1212-4  
**Client ID:** GM-15I  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1212  
**Lab File ID:** G8598.D

**Sample Date:** 23-OCT-19  
**Received Date:** 24-OCT-19  
**Extract Date:** 28-OCT-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265204

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.27	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		53.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1212-5  
**Client ID:** GM-15SR  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1212  
**Lab File ID:** G8599.D

**Sample Date:** 23-OCT-19  
**Received Date:** 24-OCT-19  
**Extract Date:** 28-OCT-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265204

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 04-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.11	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		50.5	%				

## Report of Analysis

<b>Client Sample ID:</b> GM-34D2	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-1	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150226.D	1	10/31/19 10:41	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	0.61	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	J
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	1.5	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	5.0	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-34D2	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-1	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	76.2	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.43	11	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102419CK1	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-2	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150238.D	1	10/31/19 15:46	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102419CK1	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-2	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	7.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB102419TD1	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-3	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D150239.D	1	10/31/19 16:11	EH	n/a	n/a	V3D6420
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	10.4	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform <sup>a</sup>	ND	0.50	0.31	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene <sup>a</sup>	ND	0.50	0.23	ug/l	
156-59-2	cis-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
156-60-5	trans-1,2-Dichloroethene <sup>a</sup>	ND	0.50	0.26	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 <sup>a</sup>	ND	0.50	0.41	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride <sup>a</sup>	ND	0.50	0.35	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene <sup>a</sup>	ND	0.50	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane <sup>a</sup>	ND	0.50	0.24	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> FB102419TD1	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97497-3	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene <sup>a</sup>	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride <sup>a</sup>	ND	0.50	0.19	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.44	7.8	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) MDL from current instrument.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1272-1  
**Client ID:** GM-34D2  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1272  
**Lab File ID:** G8608.D

**Sample Date:** 24-OCT-19  
**Received Date:** 25-OCT-19  
**Extract Date:** 29-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265251

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		68.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1272-2  
**Client ID:** FB102419TD1  
**Project:** OU2-Northrop Grumman, Bethpage, NY  
**SDG:** TM1272  
**Lab File ID:** G8609.D

**Sample Date:** 24-OCT-19  
**Received Date:** 25-OCT-19  
**Extract Date:** 29-OCT-19  
**Extracted By:** AC/MR  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265251

**Analysis Date:** 31-OCT-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		54.8	%				

## Report of Analysis

Client Sample ID: TB111319CK1	Date Sampled: 11/13/19
Lab Sample ID: JC98586-1	Date Received: 11/14/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186882.D	1	11/18/19 14:44	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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## Report of Analysis

<b>Client Sample ID:</b> TB111319CK1	<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-1	<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB111319CK1 <b>Lab Sample ID:</b> JC98586-2 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 11/13/19 <b>Date Received:</b> 11/14/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186883.D	1	11/18/19 15:13	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> FB111319CK1	<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-2	<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.2  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-20D <b>Lab Sample ID:</b> JC98586-3 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 11/13/19 <b>Date Received:</b> 11/14/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186884.D	1	11/18/19 15:42	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-20D		<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-3		<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C		
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY		

4.3  
4

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: GM-21D2	Date Sampled: 11/13/19
Lab Sample ID: JC98586-4	Date Received: 11/14/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186886.D	1	11/18/19 16:52	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.0	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> GM-21D2	<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-4	<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.4  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	5.8	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

---

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-75D2	Date Sampled:	11/13/19
Lab Sample ID:	JC98586-5	Date Received:	11/14/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186887.D	1	11/18/19 17:21	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-75D2	<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-5	<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

4.5  
4

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	17.0	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP111319CK1 <b>Lab Sample ID:</b> JC98586-6 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8260C <b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	<b>Date Sampled:</b> 11/13/19 <b>Date Received:</b> 11/14/19 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D186888.D	1	11/18/19 17:50	PR	n/a	n/a	V2D8046
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone <sup>a</sup>	ND	10	6.0	ug/l	J
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	1.1	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

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4

## Report of Analysis

<b>Client Sample ID:</b> REP111319CK1	<b>Date Sampled:</b> 11/13/19
<b>Lab Sample ID:</b> JC98586-6	<b>Date Received:</b> 11/14/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	6.1	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		81-124%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2080-1  
**Client ID:** FB111319CK1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2080  
**Lab File ID:** G8987.D

**Sample Date:** 13-NOV-19  
**Received Date:** 14-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.28	ug/L	1	.25	0.28	0.095
1,4-Dioxane-D8		72.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2080-2  
**Client ID:** GM-21D2  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2080  
**Lab File ID:** G8988.D

**Sample Date:** 13-NOV-19  
**Received Date:** 14-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.1	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		90.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2080-3  
**Client ID:** GM-75D2  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2080  
**Lab File ID:** G8989.D

**Sample Date:** 13-NOV-19  
**Received Date:** 14-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	7.0	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		66.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2080-4  
**Client ID:** REP111319CK1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2080  
**Lab File ID:** G8990.D

**Sample Date:** 13-NOV-19  
**Received Date:** 14-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.4	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		68.1	%				

## Report of Analysis

Client Sample ID: TB111819DC1	Date Sampled: 11/18/19
Lab Sample ID: JC98819-1	Date Received: 11/19/19
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260C	
Project: Northrop Grumman, OU2 Hydro, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B157247.D	1	11/25/19 12:46	JP	n/a	n/a	V3B7071
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone <sup>a</sup>	ND	5.0	2.0	ug/l	J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
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## Report of Analysis

<b>Client Sample ID:</b> TB111819DC1	<b>Date Sampled:</b> 11/18/19
<b>Lab Sample ID:</b> JC98819-1	<b>Date Received:</b> 11/19/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	97%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	FB111819DC1	Date Sampled:	11/18/19
Lab Sample ID:	JC98819-2	Date Received:	11/19/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B157248.D	1	11/25/19 13:16	JP	n/a	n/a	V3B7071
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone <sup>a</sup>	ND	5.0	2.0	ug/l	J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB111819DC1	<b>Date Sampled:</b> 11/18/19
<b>Lab Sample ID:</b> JC98819-2	<b>Date Received:</b> 11/19/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		81-124%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	GM-74I	Date Sampled:	11/18/19
Lab Sample ID:	JC98819-3	Date Received:	11/19/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Northrop Grumman, OU2 Hydro, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B157256.D	1	11/25/19 17:12	JP	n/a	n/a	V3B7071
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 GW List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.95	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	1.9	ug/l	
591-78-6	2-Hexanone <sup>a</sup>	ND	5.0	2.0	ug/l	J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.70	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> GM-74I	<b>Date Sampled:</b> 11/18/19
<b>Lab Sample ID:</b> JC98819-3	<b>Date Received:</b> 11/19/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C	
<b>Project:</b> Northrop Grumman, OU2 Hydro, Bethpage, NY	

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**VOA OU2 GW List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	0.76	1.0	0.53	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		81-124%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2249-1  
**Client ID:** FB111819DC1  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2249  
**Lab File ID:** G9058.D

**Sample Date:** 18-NOV-19  
**Received Date:** 19-NOV-19  
**Extract Date:** 20-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266950

**Analysis Date:** 26-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 26-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		65.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2249-2  
**Client ID:** GM-74I  
**Project:** OU2 NG ONCT Monitoring Wells  
**SDG:** TM2249  
**Lab File ID:** G9059.D

**Sample Date:** 18-NOV-19  
**Received Date:** 19-NOV-19  
**Extract Date:** 20-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266950

**Analysis Date:** 26-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 26-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.5	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		59.3	%				

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-1		<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-1		<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B121309.D	1	10/22/19 19:26	BK	n/a	n/a	V1B5865
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	0.20	0.50	0.19	ug/l	J
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-1	<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-1	<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	0.80	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	85%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1634-04-4	Propane, 2-methoxy-2-methyl-	8.02	.97	ug/l	J N
1066-40-6	Silanol, trimethyl-	9.23	1.2	ug/l	JN
	Total TIC, Volatile		2.17	ug/l	J N

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-2	<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-2	<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B121310.D	1	10/22/19 19:57	BK	n/a	n/a	V1B5865
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-2	<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-2	<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	0.38	0.50	0.20	ug/l	J
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	84%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1634-04-4	Propane, 2-methoxy-2-methyl-	8.02	.98	ug/l	JN
	Total TIC, Volatile		.98	ug/l	J N

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-3	<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-3	<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121311.D	1	10/22/19 20:29	BK	n/a	n/a	V1B5865
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-3	<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-3	<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	82%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB101619TD1		<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-4		<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121302.D	1	10/22/19 15:47	BK	n/a	n/a	V1B5865
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> TB101619TD1		<b>Date Sampled:</b> 10/16/19
<b>Lab Sample ID:</b> JC96991-4		<b>Date Received:</b> 10/17/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

4.4  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	84%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC96991X	<b>Date Collected:</b> 10/16/2019 11:30	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 493936001	<b>Date Received:</b> 10/23/2019 09:05	
<b>Client ID:</b> BPOW1-1	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1932716	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/07/2019 01:07	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/06/2019 11:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s110619a.B\s6k0637.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.130	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC96991X	Date Collected: 10/16/2019 11:30	Matrix: WATER
Lab Sample ID: 493936002	Date Received: 10/23/2019 09:05	
Client ID: BPOW1-2	Client: ACTL003	Project: ACTL00316
Batch ID: 1932716	Method: EPA 522	SOP Ref: GL-OA-E-073
Run Date: 11/07/2019 01:53	Inst: MSD6.I	Dilution: 1
Prep Date: 11/06/2019 11:00	Analyst: JMB3	Inj. Vol: 1 uL
Data File: s110619a.B\s6k0639.D	Aliquot: 100 mL	Final Volume: 2 mL
	Rtx-624	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC96991X  
 Lab Sample ID: 493936003  
  
 Client ID: BPOW1-3  
 Batch ID: 1932716  
 Run Date: 11/07/2019 02:39  
 Prep Date: 11/06/2019 11:00  
 Data File: s110619a.B\s6k0641.D

Date Collected: 10/16/2019 13:00  
 Date Received: 10/23/2019 09:05  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.106	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-5		<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-1		<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121328.D	1	10/24/19 12:56	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-5	<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-1	<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	90%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-4		<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-2		<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121329.D	1	10/24/19 13:27	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-4	<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-2	<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB101819TD1		<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-3		<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121334.D	1	10/24/19 16:04	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TB101819TD1	<b>Date Sampled:</b> 10/18/19
<b>Lab Sample ID:</b> JC97114-3	<b>Date Received:</b> 10/18/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	90%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC97114X	<b>Date Collected:</b> 10/18/2019 11:55	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 493939001	<b>Date Received:</b> 10/23/2019 09:05	
<b>Client ID:</b> BPOW1-5	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1932716	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/07/2019 03:26	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/06/2019 11:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s110619a.B\s6k0643.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC97114X	<b>Date Collected:</b> 10/18/2019 12:15	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 493939002	<b>Date Received:</b> 10/23/2019 09:05	
<b>Client ID:</b> BPOW1-4	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1932716	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/07/2019 04:12	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/06/2019 11:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s110619a.B\s6k0645.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.104	ug/L	0.100	0.100	0.200

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-1 <b>Lab Sample ID:</b> JC97211-1 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/21/19 <b>Date Received:</b> 10/22/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121330.D	1	10/24/19 13:59	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-1	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-1	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-2	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-2	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121331.D	1	10/24/19 14:30	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-2	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-2	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	85%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-3 <b>Lab Sample ID:</b> JC97211-3 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/21/19 <b>Date Received:</b> 10/22/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121336.D	1	10/24/19 17:07	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW2-3	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-3	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	85%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	BPOW1-6	Date Sampled:	10/21/19
Lab Sample ID:	JC97211-4	Date Received:	10/22/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Navy Wells OU2, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121337.D	1	10/24/19 17:38	BK	n/a	n/a	V1B5867
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW1-6	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-4	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.4  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	84%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102119SV1 <b>Lab Sample ID:</b> JC97211-5 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/21/19 <b>Date Received:</b> 10/22/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121335.D	1	10/24/19 16:35	BK	n/a	n/a	V1B5867
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102119SV1	<b>Date Sampled:</b> 10/21/19
<b>Lab Sample ID:</b> JC97211-5	<b>Date Received:</b> 10/22/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.5  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	83%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97211X  
 Lab Sample ID: 494534001  
  
 Client ID: BPOW2-1  
 Batch ID: 1935556  
 Run Date: 11/08/2019 16:06  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0807.D

Date Collected: 10/21/2019 10:10  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.797	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97211X  
 Lab Sample ID: 494534002  
  
 Client ID: BPOW2-2  
 Batch ID: 1935556  
 Run Date: 11/08/2019 16:56  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0809.D

Date Collected: 10/21/2019 10:15  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.641	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97211X  
 Lab Sample ID: 494534003  
  
 Client ID: BPOW2-3  
 Batch ID: 1935556  
 Run Date: 11/08/2019 17:46  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0811.D

Date Collected: 10/21/2019 10:50  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		3.89	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97211X  
 Lab Sample ID: 494534004  
  
 Client ID: BPOW1-6  
 Batch ID: 1935556  
 Run Date: 11/08/2019 18:34  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0813.D

Date Collected: 10/21/2019 14:50  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

Client Sample ID:	BPOW3-1	Date Sampled:	10/22/19
Lab Sample ID:	JC97347-1	Date Received:	10/23/19
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Navy Wells OU2, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121390.D	1	10/29/19 17:49	BK	n/a	n/a	V1B5870
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-1	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-1	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-2	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-2	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121391.D	1	10/29/19 18:20	BK	n/a	n/a	V1B5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-2	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-2	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	103%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	BPOW3-3	Date Sampled:	10/22/19
Lab Sample ID:	JC97347-3	Date Received:	10/23/19
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Navy Wells OU2, Bethpage, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121392.D	1	10/29/19 18:51	BK	n/a	n/a	V1B5870
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-3	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-3	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-4 <b>Lab Sample ID:</b> JC97347-4 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/22/19 <b>Date Received:</b> 10/23/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121404.D	1	10/30/19 13:18	BK	n/a	n/a	V1B5871
Run #2 <sup>a</sup>	1B121411.D	10	10/30/19 16:58	BK	n/a	n/a	V1B5871

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	0.50	<del>0.43</del>	<del>0.50</del>	<del>0.18</del>	<del>J</del> UB
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	1.2	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	2.3	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	0.50	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	3.9	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.9	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	3.2	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	0.38	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	1.1	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW3-4 <b>Lab Sample ID:</b> JC97347-4 <b>Matrix:</b> AQ - Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/22/19 <b>Date Received:</b> 10/23/19 <b>Percent Solids:</b> n/a
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4.4  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	156 <sup>b</sup>	5.0	2.0	ug/l	D
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%	97%	70-130%
460-00-4	4-Bromofluorobenzene	93%	92%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

(b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102219TD1 <b>Lab Sample ID:</b> JC97347-5 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/22/19 <b>Date Received:</b> 10/23/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121394.D	1	10/29/19 19:54	BK	n/a	n/a	V1B5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.5  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102219TD1	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-5	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.5  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1066-40-6	Silanol, trimethyl-	9.20	1.3	ug/l	JN
	Total TIC, Volatile		1.3	ug/l	JN

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> REP102219ARH1	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-6	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121405.D	1	10/30/19 13:49	BK	n/a	n/a	V1B5871
Run #2 <sup>a</sup>	1B121406.D	10	10/30/19 14:21	BK	n/a	n/a	V1B5871

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	0.50	<del>0.37</del>	<del>0.50</del>	<del>0.18</del>	<del>J</del> UB
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	1.3	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	2.2	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	0.49	0.50	0.22	ug/l	J
75-35-4	1,1-Dichloroethylene	3.9	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.9	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	3.1	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	0.37	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	1.1	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.6  
4

## Report of Analysis

<b>Client Sample ID:</b> REP102219ARH1	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-6	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.6  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	161 <sup>b</sup>	5.0	2.0	ug/l	D
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%	101%	70-130%
460-00-4	4-Bromofluorobenzene	91%	94%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

(b) Result is from Run# 2

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> FB102219SV1 <b>Lab Sample ID:</b> JC97347-8 <b>Matrix:</b> AQ - Field Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/22/19 <b>Date Received:</b> 10/23/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121389.D	1	10/29/19 17:17	BK	n/a	n/a	V1B5870
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	9.4	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform <sup>b</sup>	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	0.20	0.50	0.18	ug/l	J
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride <sup>b</sup>	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.8  
4

## Report of Analysis

<b>Client Sample ID:</b> FB102219SV1	<b>Date Sampled:</b> 10/22/19
<b>Lab Sample ID:</b> JC97347-8	<b>Date Received:</b> 10/23/19
<b>Matrix:</b> AQ - Field Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.8  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97347X  
 Lab Sample ID: 494538001  
  
 Client ID: BPOW3-1  
 Batch ID: 1935556  
 Run Date: 11/08/2019 20:14  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0817.D

Date Collected: 10/22/2019 12:20  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		0.699	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97347X  
 Lab Sample ID: 494538002  
  
 Client ID: BPOW3-2  
 Batch ID: 1935556  
 Run Date: 11/08/2019 21:05  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0819.D

Date Collected: 10/22/2019 16:15  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		3.75	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> JC97347X	<b>Date Collected:</b> 10/22/2019 12:45	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 494538003	<b>Date Received:</b> 10/29/2019 08:55	
<b>Client ID:</b> BPOW3-3	<b>Client:</b> ACTL003	<b>Project:</b> ACTL00316
<b>Batch ID:</b> 1935556	<b>Method:</b> EPA 522	<b>SOP Ref:</b> GL-OA-E-073
<b>Run Date:</b> 11/08/2019 21:55	<b>Inst:</b> MSD6.I	<b>Dilution:</b> 1
<b>Prep Date:</b> 11/08/2019 08:00	<b>Analyst:</b> JMB3	<b>Inj. Vol:</b> 1 uL
<b>Data File:</b> s110819.B\s6k0821.D	<b>Aliquot:</b> 100 mL	<b>Final Volume:</b> 2 mL
	<b>Rtx-624</b>	



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		6.80	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97347X  
 Lab Sample ID: 494538004  
  
 Client ID: BPOW3-4  
 Batch ID: 1935556  
 Run Date: 11/08/2019 22:45  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0823.D

Date Collected: 10/22/2019 14:00  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		6.70	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97347X  
 Lab Sample ID: 494538005  
  
 Client ID: REP102219ARH1  
 Batch ID: 1935556  
 Run Date: 11/09/2019 00:23  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0827.D

Date Collected: 10/22/2019 12:00  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		6.14	ug/L	0.100	0.100	0.200

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97347X  
 Lab Sample ID: 494538006  
  
 Client ID: FB102219SV1  
 Batch ID: 1935556  
 Run Date: 11/09/2019 01:14  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0829.D

Date Collected: 10/22/2019 17:40  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

## Report of Analysis

Client Sample ID: BPOW4-2R	Date Sampled: 10/24/19
Lab Sample ID: JC97498-1	Date Received: 10/25/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121461.D	1	11/04/19 14:23	BK	n/a	n/a	V1B5875
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	0.51	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.17	0.50	0.14	ug/l	J
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	18.8	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	0.49	0.50	0.23	ug/l	J
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW4-2R	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97498-1	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	2.2	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	94%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102419SV1 <b>Lab Sample ID:</b> JC97498-2 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/24/19 <b>Date Received:</b> 10/25/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121462.D	1	11/04/19 14:54	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102419SV1	<b>Date Sampled:</b> 10/24/19
<b>Lab Sample ID:</b> JC97498-2	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	84%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97498X  
 Lab Sample ID: 494537001  
  
 Client ID: BPOW4-2R  
 Batch ID: 1935556  
 Run Date: 11/08/2019 19:25  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0815.D

Date Collected: 10/24/2019 17:25  
 Date Received: 10/29/2019 08:55  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		2.14	ug/L	0.100	0.100	0.200

## Report of Analysis

Client Sample ID: BPOW4-1R	Date Sampled: 10/25/19
Lab Sample ID: JC97485-1	Date Received: 10/25/19
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 524.2 REV 4.1	
Project: Navy Wells OU2, Bethpage, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121468.D	1	11/04/19 18:02	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	0.23	0.50	0.17	ug/l	J
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	0.30	0.50	0.24	ug/l	J
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	0.80	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31	0.50	0.14	ug/l	J
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	30.7	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> BPOW4-1R	<b>Date Sampled:</b> 10/25/19
<b>Lab Sample ID:</b> JC97485-1	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	1.1	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB102519ARH1 <b>Lab Sample ID:</b> JC97485-2 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> EPA 524.2 REV 4.1 <b>Project:</b> Navy Wells OU2, Bethpage, NY	<b>Date Sampled:</b> 10/25/19 <b>Date Received:</b> 10/25/19 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121469.D	1	11/04/19 18:33	BK	n/a	n/a	V1B5875
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.2  
4

## Report of Analysis

<b>Client Sample ID:</b> TB102519ARH1	<b>Date Sampled:</b> 10/25/19
<b>Lab Sample ID:</b> JC97485-2	<b>Date Received:</b> 10/25/19
<b>Matrix:</b> AQ - Trip Blank Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.2  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

SDG Number: JC97485X  
 Lab Sample ID: 494949001  
  
 Client ID: BPOW4-1R  
 Batch ID: 1935556  
 Run Date: 11/09/2019 02:05  
 Prep Date: 11/08/2019 08:00  
 Data File: s110819.B\s6k0831.D

Date Collected: 10/25/2019 11:35  
 Date Received: 11/01/2019 09:15  
 Client: ACTL003  
 Method: EPA 522  
 Inst: MSD6.I  
 Analyst: JMB3  
 Aliquot: 100 mL  
 Rtx-624

Matrix: WATER  
  
 Project: ACTL00316  
 SOP Ref: GL-OA-E-073  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 2 mL



CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		4.05	ug/L	0.100	0.100	0.200

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-1  
**Client ID:** TB110519CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3454.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
<b>Carbon Disulfide</b>	JB	0.30	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-1  
**Client ID:** TB110519CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3454.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		100.	%				
Toluene-d8		98.2	%				
1,2-Dichloroethane-d4		103.	%				
Dibromofluoromethane		102.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-2  
**Client ID:** FB110519CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3455.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
<b>Carbon Disulfide</b>	JB	0.54	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-2  
**Client ID:** FB110519CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3455.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		100.	%				
Toluene-d8		99.5	%				
1,2-Dichloroethane-d4		107.	%				
Dibromofluoromethane		104.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-5  
**Client ID:** RE127D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3456.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-5  
**Client ID:** RE127D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3456.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		108.	%				
Dibromofluoromethane		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-6  
**Client ID:** RE127D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3457.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-6  
**Client ID:** RE127D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3457.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		107.	%				
Dibromofluoromethane		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-7  
**Client ID:** RE130D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3458.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-7  
**Client ID:** RE130D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** T3458.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266067

**Analysis Date:** 08-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 13-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		101.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		110.	%				
Dibromofluoromethane		106.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-2  
**Client ID:** FB110519CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8855.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 13-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-3  
**Client ID:** TT102D  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8856.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.50	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		69.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-4  
**Client ID:** TT102D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8857.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U J	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8	*	21.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-5  
**Client ID:** RE127D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8858.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		80.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-6  
**Client ID:** RE127D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8859.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		103.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1773-7  
**Client ID:** RE130D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1773  
**Lab File ID:** G8860.D

**Sample Date:** 05-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 15-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.21	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8	*	117.	%				

## Report of Analysis

<b>Client Sample ID:</b> TT102D		<b>Date Sampled:</b> 11/05/19
<b>Lab Sample ID:</b> JC98067-1		<b>Date Received:</b> 11/06/19
<b>Matrix:</b> AQ - Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121649.D	1	11/11/19 19:26	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> TT102D	<b>Date Sampled:</b> 11/05/19
<b>Lab Sample ID:</b> JC98067-1	<b>Date Received:</b> 11/06/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.1  
4

**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	TB110519ARH1	<b>Date Sampled:</b>	11/05/19
<b>Lab Sample ID:</b>	JC98067-2	<b>Date Received:</b>	11/06/19
<b>Matrix:</b>	AQ - Trip Blank Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	EPA 524.2 REV 4.1		
<b>Project:</b>	Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121648.D	1	11/11/19 18:55	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TB110519ARH1		<b>Date Sampled:</b> 11/05/19
<b>Lab Sample ID:</b> JC98067-2		<b>Date Received:</b> 11/06/19
<b>Matrix:</b> AQ - Trip Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

4.2  
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**VOA OU2 Outpost List**

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> TT102D2		<b>Date Sampled:</b> 11/05/19
<b>Lab Sample ID:</b> JC98067-3		<b>Date Received:</b> 11/06/19
<b>Matrix:</b> AQ - Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1		
<b>Project:</b> Navy Wells OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	1B121650.D	1	11/11/19 19:57	RS	n/a	n/a	V1B5884
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
76-13-1	Freon 113	ND	1.0	0.34	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.3  
4

## Report of Analysis

<b>Client Sample ID:</b> TT102D2	<b>Date Sampled:</b> 11/05/19
<b>Lab Sample ID:</b> JC98067-3	<b>Date Received:</b> 11/06/19
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 524.2 REV 4.1	
<b>Project:</b> Navy Wells OU2, Bethpage, NY	

4.3  
4

### VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	90%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

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ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-1  
**Client ID:** TB110419BW1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3016.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-1  
**Client ID:** TB110419BW1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3016.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 06-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265837

**Analysis Date:** 06-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		114.	%				
Dibromofluoromethane		102.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-2RA  
**Client ID:** FB110419BW1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3041.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>		8.8	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-2RA  
**Client ID:** FB110419BW1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3041.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		118.	%				
Dibromofluoromethane		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-3  
**Client ID:** RE129D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3046.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-3  
**Client ID:** RE129D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3046.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		102.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-4  
**Client ID:** RE129D2  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3047.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-4  
**Client ID:** RE129D2  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3047.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		106.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-5  
**Client ID:** RE130D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3048.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-5  
**Client ID:** RE130D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** C3048.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG265955

**Analysis Date:** 07-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		99.0	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		118.	%				
Dibromofluoromethane		104.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-2  
**Client ID:** FB110419BW1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** G8808.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265969

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.088
1,4-Dioxane-D8		92.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-3  
**Client ID:** RE129D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** G8809.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265969

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		74.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-4  
**Client ID:** RE129D2  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** G8810.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265969

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		101.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1651-5  
**Client ID:** RE130D1  
**Project:** OU2-Navy Wells  
**SDG:** TM1651  
**Lab File ID:** G8811.D

**Sample Date:** 04-NOV-19  
**Received Date:** 05-NOV-19  
**Extract Date:** 07-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG265969

**Analysis Date:** 09-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 12-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.12	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		86.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-1RA  
**Client ID:** TB110619CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** C3111.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266228

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-1RA  
**Client ID:** TB110619CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** C3111.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266228

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		110.	%				
Dibromofluoromethane		100.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-2RA  
**Client ID:** FB110619CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** C3112.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266228

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>		8.8	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-2RA  
**Client ID:** FB110619CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** C3112.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266228

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		110.	%				
Dibromofluoromethane		99.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-3  
**Client ID:** RE116D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3501.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-3  
**Client ID:** RE116D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3501.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		101.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		99.3	%				
Dibromofluoromethane		104.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4  
**Client ID:** RE114D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3508.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		3.6	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		19	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
<b>1,1-Dichloroethane</b>		1.2	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		4.2	ug/L	1	1	1.0	0.21
<b>Chloroform</b>		2.3	ug/L	1	1	1.0	0.32
<b>Carbon Tetrachloride</b>		2.2	ug/L	1	1	1.0	0.22
<b>1,1,1-Trichloroethane</b>	J	0.48	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>	370 E	<del>400</del>	D ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
<b>1,1,2-Trichloroethane</b>		1.3	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4  
**Client ID:** RE114D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3508.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		107.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4DL  
**Client ID:** RE114D1  
**Project:** QU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3500.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	10	ug/L	10	1	10.	3.6
Vinyl Chloride	U	10	ug/L	10	1	10.	2.5
Bromomethane	U	20	ug/L	10	2	20.	4.9
Chloroethane	U	10	ug/L	10	1	10.	5.5
<b>1,1-Dichloroethene</b>	J	3.6	ug/L	10	1	10.	3.5
Carbon Disulfide	U	10	ug/L	10	1	10.	2.5
<b>Freon-113</b>		18	ug/L	10	1	10.	3.1
Methylene Chloride	U	50	ug/L	10	5	50.	11.
Acetone	U	50	ug/L	10	5	50.	22.
trans-1,2-Dichloroethene	U	10	ug/L	10	1	10.	2.5
1,1-Dichloroethane	U	10	ug/L	10	1	10.	2.1
<b>cis-1,2-Dichloroethene</b>	J	3.7	ug/L	10	1	10.	2.1
Chloroform	U	10	ug/L	10	1	10.	3.2
Carbon Tetrachloride	U	10	ug/L	10	1	10.	2.2
1,1,1-Trichloroethane	U	10	ug/L	10	1	10.	2.0
2-Butanone	U	50	ug/L	10	5	50.	13.
Benzene	U	10	ug/L	10	1	10.	2.6
1,2-Dichloroethane	U	10	ug/L	10	1	10.	2.0
<b>Trichloroethene</b>		370	ug/L	10	1	10.	2.8
1,2-Dichloropropane	U	10	ug/L	10	1	10.	2.5
Bromodichloromethane	U	10	ug/L	10	1	10.	3.3
cis-1,3-Dichloropropene	U	10	ug/L	10	1	10.	1.9
Toluene	U	10	ug/L	10	1	10.	2.7
4-Methyl-2-Pentanone	U	50	ug/L	10	5	50.	13.
Tetrachloroethene	U	10	ug/L	10	1	10.	4.0
trans-1,3-Dichloropropene	U	10	ug/L	10	1	10.	2.0
1,1,2-Trichloroethane	U	10	ug/L	10	1	10.	3.3
Dibromochloromethane	U	10	ug/L	10	1	10.	3.0
2-Hexanone	U	50	ug/L	10	5	50.	17.
Chlorobenzene	U	10	ug/L	10	1	10.	2.2
Ethylbenzene	U	10	ug/L	10	1	10.	2.1
m+p-Xylenes	U	20	ug/L	10	2	20.	5.9
o-Xylene	U	10	ug/L	10	1	10.	2.5
Styrene	U	10	ug/L	10	1	10.	2.3
Bromoform	U	10	ug/L	10	1	10.	2.3

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4DL  
**Client ID:** RE114DI  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3500.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	10	ug/L	10	1	10.	3.8
P-Bromofluorobenzene		102.	%				
Toluene-d8		99.9	%				
1,2-Dichloroethane-d4		100.	%				
Dibromofluoromethane		102.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-5  
**Client ID:** RE114D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3502.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		1.4	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		13	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		1.3	ug/L	1	1	1.0	0.21
<b>Chloroform</b>	J	0.50	ug/L	1	1	1.0	0.32
<b>Carbon Tetrachloride</b>	J	0.46	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		87	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-5  
**Client ID:** RE114D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3502.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		100.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		106.	%				
Dibromofluoromethane		103.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-6  
**Client ID:** RE114D3  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3503.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		1.2	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		14	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		1.3	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		49	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-6  
**Client ID:** RE114D3  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3503.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		107.	%				
Dibromofluoromethane		106.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-7  
**Client ID:** REP110619BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3504.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		4.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		23	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
<b>1,1-Dichloroethane</b>		1.1	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		4.3	ug/L	1	1	1.0	0.21
<b>Chloroform</b>		2.3	ug/L	1	1	1.0	0.32
<b>Carbon Tetrachloride</b>		2.4	ug/L	1	1	1.0	0.22
<b>1,1,1-Trichloroethane</b>	J	0.40	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>	400 E	<del>410</del>	D ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-7  
**Client ID:** REP110619BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3504.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		107.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		111.	%				
Dibromofluoromethane		105.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-7DL  
**Client ID:** REP110619BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3521.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	5.0	ug/L	5	1	5.0	1.8
Vinyl Chloride	U	5.0	ug/L	5	1	5.0	1.2
Bromomethane	U	10	ug/L	5	2	10.	2.4
Chloroethane	U	5.0	ug/L	5	1	5.0	2.8
<b>1,1-Dichloroethene</b>	J	3.8	ug/L	5	1	5.0	1.8
Carbon Disulfide	U	5.0	ug/L	5	1	5.0	1.2
<b>Freon-113</b>		22	ug/L	5	1	5.0	1.6
Methylene Chloride	U	25	ug/L	5	5	25.	5.6
Acetone	U	25	ug/L	5	5	25.	11.
trans-1,2-Dichloroethene	U	5.0	ug/L	5	1	5.0	1.2
1,1-Dichloroethane	U	5.0	ug/L	5	1	5.0	1.0
<b>cis-1,2-Dichloroethene</b>	J	3.4	ug/L	5	1	5.0	1.0
Chloroform	U	5.0	ug/L	5	1	5.0	1.6
<b>Carbon Tetrachloride</b>	J	1.9	ug/L	5	1	5.0	1.1
1,1,1-Trichloroethane	U	5.0	ug/L	5	1	5.0	1.0
2-Butanone	U	25	ug/L	5	5	25.	6.6
Benzene	U	5.0	ug/L	5	1	5.0	1.3
1,2-Dichloroethane	U	5.0	ug/L	5	1	5.0	1.0
<b>Trichloroethene</b>		400	ug/L	5	1	5.0	1.4
1,2-Dichloropropane	U	5.0	ug/L	5	1	5.0	1.2
Bromodichloromethane	U	5.0	ug/L	5	1	5.0	1.6
cis-1,3-Dichloropropene	U	5.0	ug/L	5	1	5.0	0.95
Toluene	U	5.0	ug/L	5	1	5.0	1.4
4-Methyl-2-Pentanone	U	25	ug/L	5	5	25.	6.6
Tetrachloroethene	U	5.0	ug/L	5	1	5.0	2.0
trans-1,3-Dichloropropene	U	5.0	ug/L	5	1	5.0	1.0
1,1,2-Trichloroethane	U	5.0	ug/L	5	1	5.0	1.6
Dibromochloromethane	U	5.0	ug/L	5	1	5.0	1.5
2-Hexanone	U	25	ug/L	5	5	25.	8.5
Chlorobenzene	U	5.0	ug/L	5	1	5.0	1.1
Ethylbenzene	U	5.0	ug/L	5	1	5.0	1.0
m+p-Xylenes	U	10	ug/L	5	2	10.	3.0
o-Xylene	U	5.0	ug/L	5	1	5.0	1.2
Styrene	U	5.0	ug/L	5	1	5.0	1.2
Bromoform	U	5.0	ug/L	5	1	5.0	1.2

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-7DL  
**Client ID:** REP110619BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** T3521.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	5	1	5.0	1.9
P-Bromofluorobenzene		109.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		124.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-2  
**Client ID:** FB110619CK1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8861.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		85.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-3  
**Client ID:** RE116D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8862.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.7	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		99.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4  
**Client ID:** RE114D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8863.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8	*	0.00	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-4RE  
**Client ID:** RE114D1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8984.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	7.3	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		78.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-5  
**Client ID:** RE114D2  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8864.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.2	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		86.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-6  
**Client ID:** RE114D3  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8865.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.9	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		83.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1774-7  
**Client ID:** REP110619BW1  
**Project:** OU2 Navy Wells  
**SDG:** TM1774  
**Lab File ID:** G8866.D

**Sample Date:** 06-NOV-19  
**Received Date:** 07-NOV-19  
**Extract Date:** 08-NOV-19  
**Extracted By:** MR/AC  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266085

**Analysis Date:** 14-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.9	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-1  
**Client ID:** TB110719CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1367.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-1  
**Client ID:** TB110719CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1367.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		107.	%				
Dibromofluoromethane		91.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-2  
**Client ID:** FB110719CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1368.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
<b>Acetone</b>		8.4	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-2  
**Client ID:** FB110719CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1368.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		104.	%				
Dibromofluoromethane		91.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-3  
**Client ID:** RE124D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1375.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
<b>Vinyl Chloride</b>	J	0.49	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		1.4	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		86	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>	J	0.96	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		4.1	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>	J	0.91	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-3  
**Client ID:** RE124D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1375.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		104.	%				
Dibromofluoromethane		90.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-4  
**Client ID:** RE124D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1376.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-4  
**Client ID:** RE124D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1376.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		104.	%				
Dibromofluoromethane		89.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-5  
**Client ID:** RE121D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1377.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		1.7	ug/L	1	1	1.0	0.35
<b>Carbon Disulfide</b>	J	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		9.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		1.2	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		35	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-5  
**Client ID:** RE121D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1377.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		104.	%				
Dibromofluoromethane		87.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-6DL  
**Client ID:** RE121D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1370.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	20	ug/L	20	1	20.	7.2
Vinyl Chloride	U	20	ug/L	20	1	20.	5.0
Bromomethane	U	40	ug/L	20	2	40.	9.8
Chloroethane	U	20	ug/L	20	1	20.	11.
1,1-Dichloroethene	U	20	ug/L	20	1	20.	7.0
Carbon Disulfide	U	20	ug/L	20	1	20.	5.0
<b>Freon-113</b>	J	19	ug/L	20	1	20.	6.2
Methylene Chloride	U	100	ug/L	20	5	100	23.
Acetone	U	100	ug/L	20	5	100	44.
trans-1,2-Dichloroethene	U	20	ug/L	20	1	20.	5.0
1,1-Dichloroethane	U	20	ug/L	20	1	20.	4.2
cis-1,2-Dichloroethene	U	20	ug/L	20	1	20.	4.2
Chloroform	U	20	ug/L	20	1	20.	6.4
Carbon Tetrachloride	U	20	ug/L	20	1	20.	4.4
1,1,1-Trichloroethane	U	20	ug/L	20	1	20.	4.0
2-Butanone	U	100	ug/L	20	5	100	26.
Benzene	U	20	ug/L	20	1	20.	5.2
1,2-Dichloroethane	U	20	ug/L	20	1	20.	4.0
<b>Trichloroethene</b>		1000	ug/L	20	1	20.	5.6
1,2-Dichloropropane	U	20	ug/L	20	1	20.	5.0
Bromodichloromethane	U	20	ug/L	20	1	20.	6.6
cis-1,3-Dichloropropene	U	20	ug/L	20	1	20.	3.8
Toluene	U	20	ug/L	20	1	20.	5.4
4-Methyl-2-Pentanone	U	100	ug/L	20	5	100	26.
Tetrachloroethene	U	20	ug/L	20	1	20.	8.0
trans-1,3-Dichloropropene	U	20	ug/L	20	1	20.	4.0
1,1,2-Trichloroethane	U	20	ug/L	20	1	20.	6.6
Dibromochloromethane	U	20	ug/L	20	1	20.	6.0
2-Hexanone	U	100	ug/L	20	5	100	34.
Chlorobenzene	U	20	ug/L	20	1	20.	4.4
Ethylbenzene	U	20	ug/L	20	1	20.	4.2
m+p-Xylenes	U	40	ug/L	20	2	40.	12.
o-Xylene	U	20	ug/L	20	1	20.	5.0
Styrene	U	20	ug/L	20	1	20.	4.6
Bromoform	U	20	ug/L	20	1	20.	4.6

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-6DL  
**Client ID:** RE121D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1370.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	20	ug/L	20	1	20.	7.6
P-Bromofluorobenzene		104.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		106.	%				
Dibromofluoromethane		90.7	%				

## Report of Analytical Results

Client: ARCADIS  
 Lab ID: TM1848-6DL2  
 Client ID: RE121D2  
 Project: OU2-Navy Wells, Bethpage, NY  
 SDG: TM1848  
 Lab File ID: W1379.D

Sample Date: 07-NOV-19  
 Received Date: 08-NOV-19  
 Extract Date: 11-NOV-19  
 Extracted By: JSS/CR  
 Extraction Method: SW846 5030C  
 Lab Prep Batch: WG266231

Analysis Date: 11-NOV-19  
 Analyst: JSS/CR  
 Analysis Method: SW846 8260C  
 Matrix: AQ  
 % Solids: NA  
 Report Date: 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	2.0	ug/L	2	1	2.0	0.72
<b>Vinyl Chloride</b>	J	1.9	ug/L	2	1	2.0	0.50
Bromomethane	U	4.0	ug/L	2	2	4.0	0.98
Chloroethane	U	2.0	ug/L	2	1	2.0	1.1
<b>1,1-Dichloroethene</b>		4.3	ug/L	2	1	2.0	0.70
<b>Carbon Disulfide</b>	J	2.1	ug/L	2	1	2.0	0.50
<b>Freon-113</b>		18	ug/L	2	1	2.0	0.62
Methylene Chloride	U	10	ug/L	2	5	10.	2.3
Acetone	U	10	ug/L	2	5	10.	4.4
trans-1,2-Dichloroethene	U	2.0	ug/L	2	1	2.0	0.50
1,1-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.42
<b>cis-1,2-Dichloroethene</b>		4.7	ug/L	2	1	2.0	0.42
<b>Chloroform</b>	J	1.2	ug/L	2	1	2.0	0.64
<b>Carbon Tetrachloride</b>		5.8	ug/L	2	1	2.0	0.44
1,1,1-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.40
2-Butanone	U	10	ug/L	2	5	10.	2.6
Benzene	U	2.0	ug/L	2	1	2.0	0.52
1,2-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.40
<b>Trichloroethene</b>	D	<del>E 1100</del> 1000	ug/L	2	1	2.0	0.56
1,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50
Bromodichloromethane	U	2.0	ug/L	2	1	2.0	0.66
cis-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.38
Toluene	U	2.0	ug/L	2	1	2.0	0.54
4-Methyl-2-Pentanone	U	10	ug/L	2	5	10.	2.6
<b>Tetrachloroethene</b>	J	1.0	ug/L	2	1	2.0	0.80
trans-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.40
1,1,2-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.66
Dibromochloromethane	U	2.0	ug/L	2	1	2.0	0.60
2-Hexanone	U	10	ug/L	2	5	10.	3.4
Chlorobenzene	U	2.0	ug/L	2	1	2.0	0.44
Ethylbenzene	U	2.0	ug/L	2	1	2.0	0.42
m+p-Xylenes	U	4.0	ug/L	2	2	4.0	1.2
o-Xylene	U	2.0	ug/L	2	1	2.0	0.50
Styrene	U	2.0	ug/L	2	1	2.0	0.46
Bromoform	U	2.0	ug/L	2	1	2.0	0.46

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-6DL2  
**Client ID:** RE121D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** W1379.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266231

**Analysis Date:** 11-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.76
P-Bromofluorobenzene		105.	%				
Toluene-d8		104.	%				
1,2-Dichloroethane-d4		102.	%				
Dibromofluoromethane		83.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-2  
**Client ID:** FB110719CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** G8928.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 15-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		72.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-3  
**Client ID:** RE124D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** G8929.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 15-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.9	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		70.2	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-4  
**Client ID:** RE124D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** G8930.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 15-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		86.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-5  
**Client ID:** RE121D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** G8931.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		59.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1848-6  
**Client ID:** RE121D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1848  
**Lab File ID:** G8932.D

**Sample Date:** 07-NOV-19  
**Received Date:** 08-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.9	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		91.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-1  
**Client ID:** TB110819CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3518.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-1  
**Client ID:** TB110819CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3518.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		108.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-2  
**Client ID:** FB110819CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3519.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-2  
**Client ID:** FB110819CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3519.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		107.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-3RA  
**Client ID:** RE106D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3520.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		2.1	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		9.8	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		1.5	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-3RA  
**Client ID:** RE106D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3520.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 12-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266313

**Analysis Date:** 12-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		108.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-4  
**Client ID:** RE106D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3506.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		9.4	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>	J	0.80	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		36	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		8.5	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-4  
**Client ID:** RE106D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3506.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		106.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		116.	%				
Dibromofluoromethane		109.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-5  
**Client ID:** RE106D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3507.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>	J	0.98	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>	J	68	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		3.2	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		88	ug/L	1	1	1.0	0.28
<b>1,2-Dichloropropane</b>	J	0.84	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		78	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-5  
**Client ID:** RE106D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** T3507.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 11-NOV-19  
**Extracted By:** HG/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266230

**Analysis Date:** 11-NOV-19  
**Analyst:** HG/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		106.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		118.	%				
Dibromofluoromethane		109.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-2  
**Client ID:** FB110819CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** G8933.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.28	ug/L	1	.25	0.28	0.094
1,4-Dioxane-D8		51.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-3  
**Client ID:** RE106D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** G8934.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		11	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		57.4	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-4  
**Client ID:** RE106D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** G8935.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		11	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		94.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1924-5  
**Client ID:** RE106D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1924  
**Lab File ID:** G8936.D

**Sample Date:** 08-NOV-19  
**Received Date:** 09-NOV-19  
**Extract Date:** 13-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266448

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 18-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		77.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-1  
**Client ID:** RE107D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3609.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		12	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		1.9	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-1  
**Client ID:** RE107D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3609.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		102.	%				
Toluene-d8		99.8	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-2  
**Client ID:** RE107D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3610.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		48	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		2.7	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>	D	<del>E 220</del> 210	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		12	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-2  
**Client ID:** RE107D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3610.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		105.	%				
Toluene-d8		103.	%				
1,2-Dichloroethane-d4		126.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-2DL  
**Client ID:** RE107D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3626.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 18-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266775

**Analysis Date:** 18-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	2.0	ug/L	2	1	2.0	0.72
Vinyl Chloride	U	2.0	ug/L	2	1	2.0	0.50
Bromomethane	U	4.0	ug/L	2	2	4.0	0.98
Chloroethane	U	2.0	ug/L	2	1	2.0	1.1
1,1-Dichloroethene	U	2.0	ug/L	2	1	2.0	0.70
Carbon Disulfide	U	2.0	ug/L	2	1	2.0	0.50
<b>Freon-113</b>		40	ug/L	2	1	2.0	0.62
Methylene Chloride	U	10	ug/L	2	5	10.	2.3
Acetone	U	10	ug/L	2	5	10.	4.4
trans-1,2-Dichloroethene	U	2.0	ug/L	2	1	2.0	0.50
1,1-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.42
<b>cis-1,2-Dichloroethene</b>		3.0	ug/L	2	1	2.0	0.42
Chloroform	U	2.0	ug/L	2	1	2.0	0.64
Carbon Tetrachloride	U	2.0	ug/L	2	1	2.0	0.44
1,1,1-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.40
2-Butanone	U	10	ug/L	2	5	10.	2.6
Benzene	U	2.0	ug/L	2	1	2.0	0.52
1,2-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.40
<b>Trichloroethene</b>		210	ug/L	2	1	2.0	0.56
1,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50
Bromodichloromethane	U	2.0	ug/L	2	1	2.0	0.66
cis-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.38
Toluene	U	2.0	ug/L	2	1	2.0	0.54
4-Methyl-2-Pentanone	U	10	ug/L	2	5	10.	2.6
<b>Tetrachloroethene</b>		11	ug/L	2	1	2.0	0.80
trans-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.40
1,1,2-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.66
Dibromochloromethane	U	2.0	ug/L	2	1	2.0	0.60
2-Hexanone	U	10	ug/L	2	5	10.	3.4
Chlorobenzene	U	2.0	ug/L	2	1	2.0	0.44
Ethylbenzene	U	2.0	ug/L	2	1	2.0	0.42
m+p-Xylenes	U	4.0	ug/L	2	2	4.0	1.2
o-Xylene	U	2.0	ug/L	2	1	2.0	0.50
Styrene	U	2.0	ug/L	2	1	2.0	0.46
Bromoform	U	2.0	ug/L	2	1	2.0	0.46

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-2DL  
**Client ID:** RE107D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3626.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 18-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266775

**Analysis Date:** 18-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.76
P-Bromofluorobenzene		105.	%				
Toluene-d8		99.9	%				
1,2-Dichloroethane-d4		128.	%				
Dibromofluoromethane		115.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-3  
**Client ID:** RE107D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** C3191.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266629

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U J	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		3.2	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>	J	0.78	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U J	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-3  
**Client ID:** RE107D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** C3191.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030C  
**Lab Prep Batch:** WG266629

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		106.	%				
Toluene-d8		107.	%				
1,2-Dichloroethane-d4		105.	%				
Dibromofluoromethane		103.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-4  
**Client ID:** FB111119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3599.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
<b>Methylene Chloride</b>	J	2.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
<b>Toluene</b>	J	0.57	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-4  
**Client ID:** FB111119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3599.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		107.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-5  
**Client ID:** TB111119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3600.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-5  
**Client ID:** TB111119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** T3600.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		97.6	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-1  
**Client ID:** RE107D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** G8941.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 14-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266527

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		10	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		76.7	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-2DL  
**Client ID:** RE107D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** G8986.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 14-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266527

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		21	ug/L	2	.25	0.47	0.16
1,4-Dioxane-D8		62.5	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-3  
**Client ID:** RE107D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** G8943.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 14-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266527

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	J	0.091	ug/L	1	.25	0.25	0.085
1,4-Dioxane-D8		80.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM1961-4  
**Client ID:** FB111119BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM1961  
**Lab File ID:** G8944.D

**Sample Date:** 11-NOV-19  
**Received Date:** 12-NOV-19  
**Extract Date:** 14-NOV-19  
**Extracted By:** AC/HD  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266527

**Analysis Date:** 16-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 19-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.089
1,4-Dioxane-D8		76.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-1  
**Client ID:** TB111219CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3601.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-1  
**Client ID:** TB111219CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3601.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		121.	%				
Dibromofluoromethane		106.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-2  
**Client ID:** FB111219CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3602.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
<b>Methylene Chloride</b>	J	1.7	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
<b>Toluene</b>	J	0.40	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-2  
**Client ID:** FB111219CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3602.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		98.2	%				
1,2-Dichloroethane-d4		123.	%				
Dibromofluoromethane		111.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-3  
**Client ID:** RE109D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3606.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		25	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>		1.2	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-3  
**Client ID:** RE109D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3606.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		125.	%				
Dibromofluoromethane		109.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-4  
**Client ID:** RE109D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3607.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		1.7	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>	J	0.29	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		45	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
<b>Tetrachloroethene</b>	J	0.67	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-4  
**Client ID:** RE109D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3607.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		104.	%				
Toluene-d8		100.	%				
1,2-Dichloroethane-d4		123.	%				
Dibromofluoromethane		108.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-5  
**Client ID:** RE109D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3608.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		3.3	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		71	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-5  
**Client ID:** RE109D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** T3608.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266632

**Analysis Date:** 15-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 06-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		103.	%				
Toluene-d8		97.7	%				
1,2-Dichloroethane-d4		128.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-2  
**Client ID:** FB111219CK1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** G8991.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.090
1,4-Dioxane-D8		60.9	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-3  
**Client ID:** RE109D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** G8992.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.6	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-4  
**Client ID:** RE109D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** G8993.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.8	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		73.8	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2005-5  
**Client ID:** RE109D3  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2005  
**Lab File ID:** G8994.D

**Sample Date:** 12-NOV-19  
**Received Date:** 13-NOV-19  
**Extract Date:** 15-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266618

**Analysis Date:** 19-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 05-DEC-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.6	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		83.1	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-1  
**Client ID:** TB111419BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3647.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-1  
**Client ID:** TB111419BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3647.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		108.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		120.	%				
Dibromofluoromethane		106.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-2  
**Client ID:** FB111419BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3648.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
Freon-113	U	1.0	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21
Chloroform	U	1.0	ug/L	1	1	1.0	0.32
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
<b>Toluene</b>	J	0.34	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-2  
**Client ID:** FB111419BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3648.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		110.	%				
Toluene-d8		101.	%				
1,2-Dichloroethane-d4		124.	%				
Dibromofluoromethane		109.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-3  
**Client ID:** RE115D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3657.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		4.3	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		9.8	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		1.6	ug/L	1	1	1.0	0.21
<b>Chloroform</b>		2.5	ug/L	1	1	1.0	0.32
<b>Carbon Tetrachloride</b>	J	0.98	ug/L	1	1	1.0	0.22
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>		150	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
<b>1,1,2-Trichloroethane</b>	J	0.60	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-3  
**Client ID:** RE115D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3657.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266857

**Analysis Date:** 19-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		108.	%				
Toluene-d8		99.3	%				
1,2-Dichloroethane-d4		116.	%				
Dibromofluoromethane		104.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-4DL  
**Client ID:** RE115D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3671.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 20-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266931

**Analysis Date:** 20-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	10	ug/L	10	1	10.	3.6
Vinyl Chloride	U	10	ug/L	10	1	10.	2.5
Bromomethane	U	20	ug/L	10	2	20.	4.9
Chloroethane	U	10	ug/L	10	1	10.	5.5
<b>1,1-Dichloroethene</b>		17	ug/L	10	1	10.	3.5
Carbon Disulfide	U	10	ug/L	10	1	10.	2.5
<b>Freon-113</b>		44	ug/L	10	1	10.	3.1
Methylene Chloride	U	50	ug/L	10	5	50.	11.
Acetone	U	50	ug/L	10	5	50.	22.
trans-1,2-Dichloroethene	U	10	ug/L	10	1	10.	2.5
1,1-Dichloroethane	U	10	ug/L	10	1	10.	2.1
cis-1,2-Dichloroethene	U	10	ug/L	10	1	10.	2.1
Chloroform	U	10	ug/L	10	1	10.	3.2
Carbon Tetrachloride	U	10	ug/L	10	1	10.	2.2
1,1,1-Trichloroethane	U	10	ug/L	10	1	10.	2.0
2-Butanone	U	50	ug/L	10	5	50.	13.
Benzene	U	10	ug/L	10	1	10.	2.6
1,2-Dichloroethane	U	10	ug/L	10	1	10.	2.0
<b>Trichloroethene</b>		610	ug/L	10	1	10.	2.8
1,2-Dichloropropane	U	10	ug/L	10	1	10.	2.5
Bromodichloromethane	U	10	ug/L	10	1	10.	3.3
cis-1,3-Dichloropropene	U	10	ug/L	10	1	10.	1.9
Toluene	U	10	ug/L	10	1	10.	2.7
4-Methyl-2-Pentanone	U	50	ug/L	10	5	50.	13.
Tetrachloroethene	U	10	ug/L	10	1	10.	4.0
trans-1,3-Dichloropropene	U	10	ug/L	10	1	10.	2.0
1,1,2-Trichloroethane	U	10	ug/L	10	1	10.	3.3
Dibromochloromethane	U	10	ug/L	10	1	10.	3.0
2-Hexanone	U	50	ug/L	10	5	50.	17.
Chlorobenzene	U	10	ug/L	10	1	10.	2.2
Ethylbenzene	U	10	ug/L	10	1	10.	2.1
m+p-Xylenes	U	20	ug/L	10	2	20.	5.9
o-Xylene	U	10	ug/L	10	1	10.	2.5
Styrene	U	10	ug/L	10	1	10.	2.3
Bromoform	U	10	ug/L	10	1	10.	2.3

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-4DL  
**Client ID:** RE115D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3671.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 20-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266931

**Analysis Date:** 20-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	10	ug/L	10	1	10.	3.8
P-Bromofluorobenzene		110.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		122.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

Client: ARCADIS  
 Lab ID: TM2141-4RA  
 Client ID: RE115D2  
 Project: OU2-Navy Wells, Bethpage, NY  
 SDG: TM2141  
 Lab File ID: T3681.D

Sample Date: 14-NOV-19  
 Received Date: 15-NOV-19  
 Extract Date: 20-NOV-19  
 Extracted By: JSS/CR  
 Extraction Method: SW846 5030  
 Lab Prep Batch: WG266931

Analysis Date: 20-NOV-19  
 Analyst: JSS/CR  
 Analysis Method: SW846 8260C  
 Matrix: AQ  
 % Solids: NA  
 Report Date: 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
Chloromethane	U	1.0	ug/L	1	1	1.0	0.36
Vinyl Chloride	U	1.0	ug/L	1	1	1.0	0.25
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49
Chloroethane	U	1.0	ug/L	1	1	1.0	0.55
<b>1,1-Dichloroethene</b>		18	ug/L	1	1	1.0	0.35
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25
<b>Freon-113</b>		39	ug/L	1	1	1.0	0.31
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1
Acetone	U	5.0	ug/L	1	5	5.0	2.2
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25
<b>1,1-Dichloroethane</b>		1.9	ug/L	1	1	1.0	0.21
<b>cis-1,2-Dichloroethene</b>		3.2	ug/L	1	1	1.0	0.21
<b>Chloroform</b>		1.4	ug/L	1	1	1.0	0.32
<b>Carbon Tetrachloride</b>		2.8	ug/L	1	1	1.0	0.22
<b>1,1,1-Trichloroethane</b>		1.5	ug/L	1	1	1.0	0.20
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3
Benzene	U	1.0	ug/L	1	1	1.0	0.26
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20
<b>Trichloroethene</b>	D	<del>E 640</del> 610	ug/L	1	1	1.0	0.28
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19
Toluene	U	1.0	ug/L	1	1	1.0	0.27
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20
<b>1,1,2-Trichloroethane</b>	J	0.89	ug/L	1	1	1.0	0.33
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25
Styrene	U	1.0	ug/L	1	1	1.0	0.23
Bromoform	U	1.0	ug/L	1	1	1.0	0.23

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-4RA  
**Client ID:** RE115D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** T3681.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 20-NOV-19  
**Extracted By:** JSS/CR  
**Extraction Method:** SW846 5030  
**Lab Prep Batch:** WG266931

**Analysis Date:** 20-NOV-19  
**Analyst:** JSS/CR  
**Analysis Method:** SW846 8260C  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38
P-Bromofluorobenzene		112.	%				
Toluene-d8		102.	%				
1,2-Dichloroethane-d4		130.	%				
Dibromofluoromethane		110.	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-2  
**Client ID:** FB111419BW1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** G9012.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266864

**Analysis Date:** 21-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.26	ug/L	1	.25	0.26	0.087
1,4-Dioxane-D8		62.0	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-3  
**Client ID:** RE115D1  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** G9013.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266864

**Analysis Date:** 21-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		8.9	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		72.3	%				

## Report of Analytical Results

**Client:** ARCADIS  
**Lab ID:** TM2141-4  
**Client ID:** RE115D2  
**Project:** OU2-Navy Wells, Bethpage, NY  
**SDG:** TM2141  
**Lab File ID:** G9014.D

**Sample Date:** 14-NOV-19  
**Received Date:** 15-NOV-19  
**Extract Date:** 19-NOV-19  
**Extracted By:** MP  
**Extraction Method:** SW846 3520C  
**Lab Prep Batch:** WG266864

**Analysis Date:** 21-NOV-19  
**Analyst:** JCG  
**Analysis Method:** SW846 8270D SIM  
**Matrix:** AQ  
**% Solids:** NA  
**Report Date:** 25-NOV-19

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		11	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		54.6	%				

Arcadis 2019 OU3 Groundwater Quality Data

		Location ID: Date: Type Sample ID:			B24MW-2 7/18/2019 N B24MW-2_20190718	B24MW-3 7/16/2019 N B24MW-3_20190716	B30MW-1 7/17/2019 N B30MW-1_20190717	BCPMW-4-1 7/11/2019 N BCPMW-4-1_20190711	BCPMW-4-2 7/11/2019 N BCPMW-4-2_20190711
BASE_METHOD	RESULT_TYPE_CODE	Constituents (units in µg/L)	CAS_RN	Units					
SVOcs SIM	TRG	1,4-Dioxane	123-91-1	ug/l	<b>0.29</b>	< 0.24 U	< 0.24 U	<b>7.4</b>	<b>0.77</b>
VOCs	TRG	1,1,1-Trichloroethane	71-55-6	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,1,2,2-Tetrachloroethane	79-34-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	1,1,2-Trichloroethane	79-00-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,1-Dichloroethane	75-34-3	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	<b>0.73 J</b>	<b>0.97 J</b>
VOCs	TRG	1,1-Dichloroethene	75-35-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,2-Dichloroethane	107-06-2	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,2-Dichloropropane	78-87-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	1,3-Butadiene	106-99-0	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	1-Chloro-1,1-difluoroethane	75-68-3	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	2-Butanone (MEK)	78-93-3	ug/l	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
VOCs	TRG	4-Methyl-2-Pentanone	108-10-1	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	Acetone	67-64-1	ug/l	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
VOCs	TRG	Benzene	71-43-2	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
VOCs	TRG	Bromodichloromethane	75-27-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Bromoform	75-25-2	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Bromomethane	74-83-9	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
VOCs	TRG	Carbon Disulfide	75-15-0	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
VOCs	TRG	Carbon Tetrachloride	56-23-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	CFC-11	75-69-4	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
VOCs	TRG	CFC-12	75-71-8	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
VOCs	TRG	Chlorobenzene	108-90-7	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Chlorodibromomethane	124-48-1	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Chlorodifluoromethane	75-45-6	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	Chloroethane	75-00-3	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Chloroform	67-66-3	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Chloromethane	74-87-3	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	cis-1,2-Dichloroethene	156-59-2	ug/l	< 1.0 U	<b>3.2</b>	< 1.0 U	<b>20.7</b>	<b>68.5</b>
VOCs	TRG	cis-1,3-Dichloropropene	10061-01-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Dichloromethane	75-09-2	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
VOCs	TRG	Ethylbenzene	100-41-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	m&p-Xylenes	ARC-mpXyl	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
VOCs	TRG	Methyl-tert-butylether	1634-04-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	o-Xylene	95-47-6	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Styrene (Monomer)	100-42-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Tetrachloroethene	127-18-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Toluene	108-88-3	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	trans-1,2-Dichloroethene	156-60-5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	trans-1,3-Dichloropropene	10061-02-6	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VOCs	TRG	Trichloroethene	79-01-6	ug/l	<b>4.0</b>	<b>1.3</b>	< 1.0 U	<b>8.9</b>	<b>37.0</b>
VOCs	TRG	Vinyl chloride	75-01-4	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
		TVOC		ug/l	4	4.5	0	30.33	106.47

Arcadis 2019 OU3 Groundwater Quality Data

BCPMW-4-3 7/11/2019 N BCPMW-4-3_20190711	BCPMW-6-1 7/15/2019 N BCPMW-6-1_20190715	BCPMW-6-2 7/16/2019 N BCPMW-6-2_20190716	BCPMW-7-1 7/10/2019 N BCPMW-7-1_20190710	MW-109-3 2/4/2019 N MW-109-3_20190204	MW-109-3 5/29/2019 N MW-109-3_20190529	MW-109-3 5/29/2019 FD REPO52919MM1	MW-109-3 9/25/2019 N MW-109-3_20190925	MW-109-3 11/19/2019 N MW-109-3_20191119	MW-111-4 2/4/2019 N MW-111-4_20190204
<b>0.41</b>	< 0.23 U	<b>0.096 J</b>	< 0.24 U	<b>5.1</b>	<b>3.7</b>	<b>4.6</b>	<b>5.6</b>	<b>4.2</b>	<b>20</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>1.9</b>	<b>2.3 J</b>	<b>2.6 J</b>	<b>2.6</b>	<b>2.3</b>	<b>7.6</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>0.64 J</b>	<b>0.60 J</b>	<b>0.66 J</b>	<b>0.73 J</b>	<b>0.66 J</b>	<b>5.4</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>0.82 J</b>	<b>0.88 J</b>	<b>0.94 J</b>	<b>1.0</b>	<b>0.99 J</b>	<b>2.7 J</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	--	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	--
< 10 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 10 UJ	< 10 UJ	< 10 U	< 10 U	< 25 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 25 U
< 10 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 10 UJ	< 10 UJ	< 10 U	< 10 U	< 25 U
< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 5.0 U
< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	--	--	--	--	< 5.0 U
< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	<b>1.1</b>	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 5.0 U	<b>4.1 J</b>	< 5.0 U	< 5.0 U	--	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	--
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>4.4</b>	<b>4.9 J</b>	<b>5.3 J</b>	<b>5.9</b>	<b>5.6</b>	<b>2.6 J</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	<b>0.92 J</b>	< 1.0 U	<b>150</b>	<b>164 J</b>	<b>180 J</b>	<b>171</b>	<b>156</b>	<b>660</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 25 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>0.55 J</b>	--	--	--	--	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>1.7</b>	<b>1.3 J</b>	<b>1.3 J</b>	<b>1.4</b>	<b>1.2</b>	<b>6.6</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>0.65 J</b>	<b>1.0 J</b>	<b>1.2 J</b>	<b>1.5</b>	<b>0.91 J</b>	<b>2.1 J</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<b>270</b>	<b>241 DJ</b>	<b>235 DJ</b>	<b>268</b>	<b>253</b>	<b>1200</b>
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U
0	4.1	0.92	0	431.76	415.98	427	452.13	420.66	1887

Arcadis 2019 OU3 Groundwater Quality Data

MW-111-4 5/29/2019 N MW-111-4_20190529	MW-111-4 9/25/2019 N MW-111-4_20190925	MW-111-4 9/25/2019 FD REP092519ALH1	MW-111-4 11/19/2019 N MW-111-4_20191119	MW-116-5 9/23/2019 N MW-116-5_20190923	MW-116-5 10/25/2019 N MW-116-5_20191025	MW-116-5 11/19/2019 N MW-116-5_20191119	MW-116-5 12/3/2019 N MW-116-5_20191203	MW-200-1 7/8/2019 N MW-200-1_20190708	MW-201-1 7/8/2019 N MW-201-1_20190708
<b>18</b>	<b>15</b>	<b>14</b>	<b>20</b>	<b>61</b>	<b>74</b>	<b>58</b>	<b>93</b>	<b>0.26</b>	<b>0.30</b>
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	<b>3.6 J</b>	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	<b>4.3 J</b>	< 1.0 U	< 1.0 U
<b>9.2 J</b>	<b>8.8</b>	<b>8.2</b>	<b>8.9 J</b>	<b>13.2 J</b>	<b>14.8</b>	< 25 U	<b>13.5</b>	< 1.0 U	< 1.0 U
< 10 UJ	<b>3.5 J</b>	<b>3.6 J</b>	< 10 U	<b>14.2 J</b>	<b>17.5</b>	<b>15.5 J</b>	<b>16.9</b>	< 1.0 U	< 1.0 U
< 10 UJ	<b>3.8 J</b>	<b>3.1 J</b>	< 10 U	<b>31.2</b>	<b>30.2</b>	<b>31.8</b>	<b>29.5</b>	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	<b>9.7 J</b>	< 25 U	<b>9.3</b>	< 1.0 U	< 1.0 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
< 100 UJ	< 50 U	< 50 U	< 100 U	< 200 U	< 100 U	< 250 U	< 50 U	< 10 U	< 10 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
< 100 UJ	< 50 U	< 50 U	< 100 U	< 200 U	< 100 U	< 250 U	< 50 U	< 10 U	< 10 U
< 5.0 UJ	< 2.5 U	< 2.5 U	< 5.0 U	< 10 U	< 5.0 U	< 13 U	< 2.5 U	< 0.50 U	< 0.50 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 20 UJ	< 10 U	< 10 U	< 20 U	< 40 U	< 20 U	< 50 U	< 10 U	< 2.0 U	< 2.0 U
< 20 UJ	< 10 U	< 10 U	< 20 U	< 40 U	< 20 U	< 50 U	< 10 U	< 2.0 U	< 2.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	<b>3.7 J</b>	< 1.0 U	< 1.0 U
--	--	--	--	--	--	--	--	< 2.0 U	< 2.0 U
< 20 UJ	< 10 U	< 10 U	< 20 U	< 40 U	< 20 U	< 50 U	< 10 U	< 2.0 U	< 2.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	<b>3.0 J</b>	<b>3.1 J</b>	< 10 U	<b>24.5</b>	<b>25.3</b>	<b>25.7</b>	<b>24.8</b>	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
<b>718 J</b>	<b>646</b>	<b>605</b>	<b>694</b>	<b>561</b>	<b>645</b>	<b>632</b>	<b>622</b>	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 20 UJ	< 10 U	< 10 U	< 20 U	< 40 U	< 20 U	< 50 U	< 10 U	< 2.0 U	< 2.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 50 UJ	< 25 U	< 25 U	< 50 U	< 100 U	< 50 U	< 130 U	< 25 U	< 5.0 U	< 5.0 U
--	--	--	--	--	--	--	--	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	<b>6.7</b>	<b>7.1</b>	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
< 10 UJ	<b>5.7</b>	<b>8.4</b>	< 10 U	< 20 U	< 10 U	< 25 U	<b>4.4 J</b>	< 1.0 U	< 1.0 U
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
<b>1280 J</b>	<b>1010</b>	<b>1010</b>	<b>1250</b>	<b>3230</b>	<b>4230</b>	<b>3870</b>	<b>3870</b>	< 1.0 U	<b>0.69 J</b>
< 10 UJ	< 5.0 U	< 5.0 U	< 10 U	< 20 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U
2007.2	1687.5	1648.5	1952.9	3874.1	4972.5	4575	4602	0	0.69



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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE103D1 RE103D1-20190308 20190308 NM K1841	RE103D2 RE103D2-20190308 20190308 NM K1841	RE103D3 RE103D3-20190308 20190308 NM K1841
<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	7.1	4 J	2.1 J
1,1-DICHLOROETHANE	5	0.86 J	0.75 J	0.5 U
1,1-DICHLOROETHENE	5	4.2 J	1.3 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.74 J	0.85 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.9 J	1.4 J	0.55 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	3.8 J	1.4 J	0.54 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	800	830	310
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	12.8	1.8	0.26

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	1.3 J	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2.6 J	3.1 J	2.7 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CHLOROFORM	7	0.5 U	1.1 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.61 J	9.5	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.2 J	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	52.9	38.4	0.5 U
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	4.6	0.51	0.06 U

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.91 J	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	3 J	9.2	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.98 J	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	4.6 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	1.6 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	1 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.88 J	2.4 J	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.58 J	2.5 J	1.4 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	84.5	1400	41.8
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	7.7	9.2	5.6

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.61 J	0.63 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	<b>1.4 J</b>	<b>1.5 J</b>	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	<b>6</b>	<b>6.3</b>	0.56 J
1,1-DICHLOROETHANE	5	3.5 J	3.7 J	0.5 U
1,1-DICHLOROETHENE	5	<b>6.4</b>	<b>6.3</b>	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	1.8 J	2.5 J	2.5 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	1.4 J	1.4 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 UJ
CHLOROFORM	7	2.6 J	2.8 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	<b>7.5</b>	<b>7.8</b>	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	3.2 J	3.4 J	0.66 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	<b>3000</b>	<b>3100 J</b>	<b>23.8</b>
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	<b>5.5 J</b>	<b>8.6 J</b>	<b>3.9</b>

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	1.2 J	2.4 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2.2 J	3.6 J	2 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.66 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 UJ	0.5 UJ	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.42 J	0.77 J	0.37 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.43 J	0.64 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	<b>36</b>	<b>65.4</b>	<b>47.4</b>
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	<b>3.4</b>	<b>4.2</b>	0.05 U

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.61 J	0.46 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	10.4	12.3
1,1-DICHLOROETHANE	5	0.5 U	1 J	0.75 J
1,1-DICHLOROETHENE	5	0.5 U	5.6	3.1 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2 J	25 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.38 J	0.53 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.39 J	0.46 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	2.2 J	2.5 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	2.4 J	4.4 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	0.5 U	710	620
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	0.05 U	13.6	12.1

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.47 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	12.5	0.73 J	3.5 J
1,1-DICHLOROETHANE	5	0.7 J	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	2.8 J	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.53 J	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.46 J	0.5 U	0.54 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.6 J	0.5 U	2.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.6 J	0.5 U	1.4 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.44 J
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	620	25.8	560
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	11.6	0.14	5.8

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	1.9 J	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	3.3 J	10.2	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.93 J	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	5	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2.7 J	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	1.6 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 UJ	0.5 U	0.5 U
CHLOROFORM	7	0.5 J	1.8 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.4 J	3.8 J	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.3 J	2.1 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	530	1900	6.4
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	6.2	9.5	0.05 U

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	3.1 J	2.5 J	1.9 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	1.3 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	9.2	2 J	0.5 U
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	2.3	0.55	0.05 U

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE125D1 RE125D1-20190308 20190308 NM K1841	RE125D2 RE125D2-20190308 20190308 NM K1841	RE125D3 RE125D3-20190308 20190308 NM K1841
<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	7.7	16.8	40.2
1,1-DICHLOROETHANE	5	1.4 J	0.69 J	0.5 U
1,1-DICHLOROETHENE	5	1.8 J	5	1 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.71 J	0.42 J	0.38 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	3.8 J	4 J	2 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.41 J	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	6.3	4.4 J	3.6 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	170	270	180
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	10.3	12.4	3.1

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE126D1 RE126D1-20190306 20190306 NM K1793	RE126D2 RE126D2-20190306 20190306 NM K1793	RE126D3 RE126D3-20190306 20190306 NM K1793
<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	1.2 J	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	1.3 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 J	3.5 J	2.8 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.41 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	1.7 J	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.2 J	0.75 J	2.2 J
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	39	460	3 J
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	4.5	4.6	0.93

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	3.4 J	3.9 J	190
1,1-DICHLOROETHANE	5	0.47 J	0.44 J	0.5 U
1,1-DICHLOROETHENE	5	0.7 J	0.75 J	2.2 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	1.9 J	1.5 J	2.1 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	1.8 J	1.8 J	0.38 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	4.5 J	4.6 J	4.9 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.54 J	0.54 J	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	11.3	11.3	8.6
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	160	160	79.7
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	10.5	11.6	9.6

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<b>OV (UG/L)</b>				
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.52 J
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.55 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	<b>210</b>	<b>13.3</b>	<b>15.8</b>
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	1.1 J
1,1-DICHLOROETHENE	5	1.3 J	2.9 J	4.2 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U
ACETONE	50	2.1 J	2.5 J	1.7 J
BENZENE	1	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	1.4 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 UJ	0.5 UJ
CHLOROFORM	7	0.5 U	0.5 U	0.8 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.64 J	3.6 J	2 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.2 J	1 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	<b>12.9</b>	<b>100</b>	<b>210</b>
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U
<b>OS (UG/L)</b>				
1,4-DIOXANE	0.46	<b>1.2</b>	<b>9.1</b>	<b>7</b>

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<b>OV (UG/L)</b>		
1,1,1-TRICHLOROETHANE	5	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U
1,1,2-TRICHLOROETHANE	1	0.72 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	22.1
1,1-DICHLOROETHANE	5	1.2 J
1,1-DICHLOROETHENE	5	5.7
1,2-DICHLOROBENZENE	3	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U
2-BUTANONE	50	2.5 U
2-HEXANONE	50	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U
ACETONE	50	2.4 J
BENZENE	1	0.5 U
BROMODICHLOROMETHANE	50	0.5 U
BROMOFORM	50	0.5 U
BROMOMETHANE	5	0.5 UJ
CARBON DISULFIDE	60	0.5 U
CARBON TETRACHLORIDE	5	1.3 J
CHLOROBENZENE	5	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U
CHLOROETHANE	5	0.5 UJ
CHLOROFORM	7	0.96 J
CHLOROMETHANE	5	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.5 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U
ETHYLBENZENE	5	0.5 U
ISOPROPYLBENZENE	5	0.5 U
M+P-XYLENES	10	1 U
METHYL CYCLOHEXANE	NL	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U
METHYLENE CHLORIDE	5	0.5 U
O-XYLENE	5	0.5 U
STYRENE	5	0.5 U
TETRACHLOROETHENE	5	1.6 J
TOLUENE	5	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U
TRICHLOROETHENE	5	990
TRICHLOROFLUOROMETHANE	5	0.5 U
VINYL CHLORIDE	2	0.5 U
<b>OS (UG/L)</b>		
1,4-DIOXANE	0.46	2.7

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1856**

**ATTENTION : David Brayack**



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BP-FW-MW01-20190310  
BP-FW-MW02-20190310  
BP-FW-MW03-20190310  
BP-HN-MW29D-20190310  
BPS1-TT-MW301D-20190310  
BPS1-TT-MW307D-20190311  
BP-TT-AOC22-MW08-20190311  
BP-TT-AOC22-MW09-20190311  
BP-TT-AOC22-MW07-20190311  
BP-TT-AOC22-MW07-20190311-F  
BPS1-TT-MW306D-20190311  
BPS1-TT-MW302D-20190311

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**Date: 3/23/2019  
By Mildred V Reyes, QAQC Supervisor at 1:09 pm, Mar 26, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TB01-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008115.D	1		03/15/19 19:30	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TB01-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008115.D	1		03/15/19 19:30	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW01-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008116.D	1		03/15/19 19:56	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	9.9		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	5.2		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW01-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008116.D	1		03/15/19 19:56	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	7		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW02-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008118.D	1		03/15/19 20:50	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.3	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	2.2		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	4.6		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW02-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008118.D	1		03/15/19 20:50	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	4.8		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW02-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008118.D	1		03/15/19 20:50	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.3		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	51		80 - 119		102%	SPK: 50
2037-26-5	Toluene-d8	49.6		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.3		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	253450	5.67				
540-36-3	1,4-Difluorobenzene	382688	6.86				
3114-55-4	Chlorobenzene-d5	362212	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	180523	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-FW-MW03-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008119.D	1		03/15/19 21:17	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	1.7		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-HN-MW29D-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008120.D	1		03/15/19 21:43	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.6	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1.3		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/10/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW301D-20190310	SDG No.:	K1856
Lab Sample ID:	K1856-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008121.D	1		03/15/19 22:10	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW307D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008122.D	1		03/15/19 22:37	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.73	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW307D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008122.D	1		03/15/19 22:37	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW08-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008123.D	1		03/15/19 23:04	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW08-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008123.D	1		03/15/19 23:04	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	50.1		81 - 118		100%	SPK: 50
1868-53-7	Dibromofluoromethane	51.3		80 - 119		103%	SPK: 50
2037-26-5	Toluene-d8	49.9		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.8		85 - 114		102%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	240884	5.67				
540-36-3	1,4-Difluorobenzene	364552	6.86				
3114-55-4	Chlorobenzene-d5	350387	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	175077	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW09-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008124.D	1		03/15/19 23:30	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1.5	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1.6		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW09-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008124.D	1		03/15/19 23:30	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW09-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008124.D	1		03/15/19 23:30	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	50		81 - 118		100%	SPK: 50
1868-53-7	Dibromofluoromethane	50.7		80 - 119		101%	SPK: 50
2037-26-5	Toluene-d8	49.8		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.6		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	244703	5.67				
540-36-3	1,4-Difluorobenzene	372362	6.86				
3114-55-4	Chlorobenzene-d5	352776	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	176997	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW07-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008125.D	1		03/15/19 23:57	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW07-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008125.D	1		03/15/19 23:57	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BP-TT-AOC22-MW07-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008125.D	1		03/15/19 23:57	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	50		81 - 118		100%	SPK: 50
1868-53-7	Dibromofluoromethane	51.6		80 - 119		103%	SPK: 50
2037-26-5	Toluene-d8	50		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.8		85 - 114		102%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	246373	5.67				
540-36-3	1,4-Difluorobenzene	372149	6.86				
3114-55-4	Chlorobenzene-d5	356466	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	179873	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW306D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008126.D	1		03/16/19 00:24	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	1.4		0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	7.2		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW306D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008126.D	1		03/16/19 00:24	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.5	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW302D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008127.D	1		03/16/19 00:51	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.89	J	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.1	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	5.6		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/11/19
Project:	CTO WE13	Date Received:	03/11/19
Client Sample ID:	BPS1-TT-MW302D-20190311	SDG No.:	K1856
Lab Sample ID:	K1856-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008127.D	1		03/16/19 00:51	VX031519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.39	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1882**

**ATTENTION : David Brayack**



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SAMPLE  
DATA

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-TB02-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008211.D	1		03/20/19 00:43	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-TB02-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008211.D	1		03/20/19 00:43	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-TB02-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008211.D	1		03/20/19 00:43	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.2		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.1		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.2		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.7		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	335620	5.67				
540-36-3	1,4-Difluorobenzene	546011	6.86				
3114-55-4	Chlorobenzene-d5	460683	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	185129	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305D-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008202.D	1		03/19/19 20:09	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	1.1		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305D-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008202.D	1		03/19/19 20:09	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.5		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	47		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.9		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.5		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	338653	5.67				
540-36-3	1,4-Difluorobenzene	547927	6.86				
3114-55-4	Chlorobenzene-d5	465251	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	188319	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305D-20190312DL	SDG No.:	K1882
Lab Sample ID:	K1882-02DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008235.D	10		03/20/19 12:21	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	2	UD	2	2	10	ug/L
74-87-3	Chloromethane	2	UD	2	2	10	ug/L
75-01-4	Vinyl Chloride	2	UD	2	2	10	ug/L
74-83-9	Bromomethane	2	UD	2	2	10	ug/L
75-00-3	Chloroethane	5	UD	2	5	10	ug/L
75-69-4	Trichlorofluoromethane	2	UD	2	2	10	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	2	UD	2	2	10	ug/L
75-35-4	1,1-Dichloroethene	2	UD	2	2	10	ug/L
107-02-8	Acrolein	37.5	UD	5	37.5	250	ug/L
107-13-1	Acrylonitrile	10	UD	10	10	50	ug/L
67-64-1	Acetone	10	UD	5	10	50	ug/L
75-15-0	Carbon Disulfide	2	UD	2	2	10	ug/L
1634-04-4	Methyl tert-butyl Ether	5	UD	3.5	5	10	ug/L
79-20-9	Methyl Acetate	5	UD	2	5	10	ug/L
75-09-2	Methylene Chloride	2	UD	2	2	10	ug/L
156-60-5	trans-1,2-Dichloroethene	2	UD	2	2	10	ug/L
75-34-3	1,1-Dichloroethane	2	UD	2	2	10	ug/L
110-82-7	Cyclohexane	2	UD	2	2	10	ug/L
78-93-3	2-Butanone	25	UD	13.2	25	50	ug/L
56-23-5	Carbon Tetrachloride	2	UD	2	2	10	ug/L
594-20-7	2,2-Dichloropropane	5	UD	2	5	10	ug/L
156-59-2	cis-1,2-Dichloroethene	2	UD	2	2	10	ug/L
74-97-5	Bromochloromethane	5	UD	2	5	10	ug/L
67-66-3	Chloroform	2	UD	2	2	10	ug/L
71-55-6	1,1,1-Trichloroethane	2	UD	2	2	10	ug/L
108-87-2	Methylcyclohexane	2	UD	2	2	10	ug/L
563-58-6	1,1-Dichloropropene	5	UD	3.9	5	10	ug/L
71-43-2	Benzene	2	UD	2	2	10	ug/L
107-06-2	1,2-Dichloroethane	2	UD	2	2	10	ug/L
79-01-6	Trichloroethene	530	D	2	2	10	ug/L
78-87-5	1,2-Dichloropropane	2	UD	2	2	10	ug/L
74-95-3	Dibromomethane	2	UD	2	2	10	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305D-20190312DL	SDG No.:	K1882
Lab Sample ID:	K1882-02DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008235.D	10		03/20/19 12:21	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	2	UD	2	2	10	ug/L
104-51-8	n-Butylbenzene	2	UD	2	2	10	ug/L
95-50-1	1,2-Dichlorobenzene	2	UD	2	2	10	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	2	UD	2	2	10	ug/L
120-82-1	1,2,4-Trichlorobenzene	2	UD	2	2	10	ug/L
87-68-3	Hexachlorobutadiene	2	UD	2	2	10	ug/L
91-20-3	Naphthalene	2	UD	2	2	10	ug/L
87-61-6	1,2,3-Trichlorobenzene	2	UD	2	2	10	ug/L
74-88-4	Methyl Iodide	5	UD	2	5	10	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	7.5	UD	2	7.5	10	ug/L
80-62-6	Methyl methacrylate	5	UD	2	5	10	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.3		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	46.5		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.1		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.9		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	344003	5.67				
540-36-3	1,4-Difluorobenzene	565544	6.86				
3114-55-4	Chlorobenzene-d5	475604	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	191643	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008203.D	1		03/19/19 20:34	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008203.D	1		03/19/19 20:34	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW305S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008203.D	1		03/19/19 20:34	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.5		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.2		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	335393	5.67				
540-36-3	1,4-Difluorobenzene	545610	6.86				
3114-55-4	Chlorobenzene-d5	459857	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	185301	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-DUP01-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008213.D	1		03/20/19 01:32	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-DUP01-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008213.D	1		03/20/19 01:32	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.6		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	46.6		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.2		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	335484	5.67				
540-36-3	1,4-Difluorobenzene	550160	6.86				
3114-55-4	Chlorobenzene-d5	463790	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	186773	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008214.D	1		03/20/19 01:57	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008214.D	1		03/20/19 01:57	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304S-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008214.D	1		03/20/19 01:57	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.9		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.1		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.5		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.3		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	331626	5.67				
540-36-3	1,4-Difluorobenzene	536652	6.86				
3114-55-4	Chlorobenzene-d5	451183	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	180110	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304D-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008225.D	1		03/20/19 06:31	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304D-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008225.D	1		03/20/19 06:31	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BPS1-TT-MW304D-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008225.D	1		03/20/19 06:31	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.6		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	46.9		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.9		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	326278	5.66				
540-36-3	1,4-Difluorobenzene	533721	6.86				
3114-55-4	Chlorobenzene-d5	451657	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	179882	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-EB01-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008210.D	1		03/20/19 00:18	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/12/19
Client Sample ID:	BP-EB01-20190312	SDG No.:	K1882
Lab Sample ID:	K1882-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008210.D	1		03/20/19 00:18	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.9		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.1		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.9		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.7		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	338490	5.67				
540-36-3	1,4-Difluorobenzene	544782	6.86				
3114-55-4	Chlorobenzene-d5	461085	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	184116	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1900**

**ATTENTION : David Brayack**



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**Order ID :** K1900

**Project ID :** CTO WE13

**Client :** Tetra Tech NUS, Inc.

### Lab Sample Number

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### Client Sample Number

BP-TB03-20190312  
BPS1-TT-MW304I2-20190312  
BPS1-TT-MW304I1-20190312  
BP-HN-MW27I-20190312  
BP-TT-AOC22-MW06-20190312  
BP-TT-AOC22-MW06-20190312-F  
BPS1-TT-MW309D-20190313  
K1900-07MS  
K1900-07MSD  
BPS1-TT-MW309D-20190313-F  
BP-DUP02-20190313  
BP-DUP02-20190313-F  
BPS1-TT-MW305I-20190313  
BPS1-TT-MW309S-20190313  
BPS1-TT-MW301S-20190313

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :



**APPROVED**

Date: 3/27/2019  
By Mildred V Reyes, QAQC Supervisor at 8:00 am, Mar 28, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-TB03-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008212.D	1		03/20/19 01:07	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-TB03-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008212.D	1		03/20/19 01:07	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.6		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		80 - 119		95%	SPK: 50
2037-26-5	Toluene-d8	48.7		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	345610	5.67				
540-36-3	1,4-Difluorobenzene	550095	6.86				
3114-55-4	Chlorobenzene-d5	468563	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	188334	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW304I2-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008215.D	1		03/20/19 02:22	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-981



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW304I2-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008215.D	1		03/20/19 02:22	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW304I1-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008216.D	1		03/20/19 02:47	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-984



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW304I1-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008216.D	1		03/20/19 02:47	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW304I1-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008216.D	1		03/20/19 02:47	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.6		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	47		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.4		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	328984	5.67				
540-36-3	1,4-Difluorobenzene	534307	6.86				
3114-55-4	Chlorobenzene-d5	449099	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	179221	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-HN-MW27I-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008217.D	1		03/20/19 03:12	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-TT-AOC22-MW06-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008218.D	1		03/20/19 03:37	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/12/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-TT-AOC22-MW06-20190312	SDG No.:	K1900
Lab Sample ID:	K1900-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008218.D	1		03/20/19 03:37	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.5		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	47.1		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.1		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.3		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	329665	5.67				
540-36-3	1,4-Difluorobenzene	529180	6.86				
3114-55-4	Chlorobenzene-d5	446177	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	174047	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309D-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008373.D	1		03/24/19 00:22	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.51	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309D-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008373.D	1		03/24/19 00:22	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.92	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309D-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008373.D	1		03/24/19 00:22	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.2		81 - 118		96%	SPK: 50
1868-53-7	Dibromofluoromethane	48.1		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.9		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.4		85 - 114		87%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	223008	5.66				
540-36-3	1,4-Difluorobenzene	383482	6.86				
3114-55-4	Chlorobenzene-d5	325578	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	132104	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-DUP02-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008219.D	1		03/20/19 04:02	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BP-DUP02-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008219.D	1		03/20/19 04:02	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.71	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW305I-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008220.D	1		03/20/19 04:27	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.89	J	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.68	J	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	1.6		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	3		0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1300	E	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-999





284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW305I-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008220.D	1		03/20/19 04:27	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.1		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.2		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	331010	5.67				
540-36-3	1,4-Difluorobenzene	534867	6.86				
3114-55-4	Chlorobenzene-d5	450136	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	183185	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW305I-20190313DL	SDG No.:	K1900
Lab Sample ID:	K1900-13DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008262.D	20		03/21/19 00:22	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	4	UD	4	4	20	ug/L
74-87-3	Chloromethane	4	UD	4	4	20	ug/L
75-01-4	Vinyl Chloride	4	UD	4	4	20	ug/L
74-83-9	Bromomethane	4	UD	4	4	20	ug/L
75-00-3	Chloroethane	10	UD	4	10	20	ug/L
75-69-4	Trichlorofluoromethane	4	UD	4	4	20	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	4	UD	4	4	20	ug/L
75-35-4	1,1-Dichloroethene	4	UD	4	4	20	ug/L
107-02-8	Acrolein	75	UD	10	75	500	ug/L
107-13-1	Acrylonitrile	20	UD	20	20	100	ug/L
67-64-1	Acetone	20	UD	10	20	100	ug/L
75-15-0	Carbon Disulfide	4	UD	4	4	20	ug/L
1634-04-4	Methyl tert-butyl Ether	10	UD	7	10	20	ug/L
79-20-9	Methyl Acetate	10	UD	4	10	20	ug/L
75-09-2	Methylene Chloride	4	UD	4	4	20	ug/L
156-60-5	trans-1,2-Dichloroethene	4	UD	4	4	20	ug/L
75-34-3	1,1-Dichloroethane	4	UD	4	4	20	ug/L
110-82-7	Cyclohexane	4	UD	4	4	20	ug/L
78-93-3	2-Butanone	50	UD	26.4	50	100	ug/L
56-23-5	Carbon Tetrachloride	4	UD	4	4	20	ug/L
594-20-7	2,2-Dichloropropane	10	UD	4	10	20	ug/L
156-59-2	cis-1,2-Dichloroethene	4	UD	4	4	20	ug/L
74-97-5	Bromochloromethane	10	UD	4	10	20	ug/L
67-66-3	Chloroform	4	UD	4	4	20	ug/L
71-55-6	1,1,1-Trichloroethane	4	UD	4	4	20	ug/L
108-87-2	Methylcyclohexane	4	UD	4	4	20	ug/L
563-58-6	1,1-Dichloropropene	10	UD	7.8	10	20	ug/L
71-43-2	Benzene	4	UD	4	4	20	ug/L
107-06-2	1,2-Dichloroethane	4	UD	4	4	20	ug/L
79-01-6	Trichloroethene	1200	D	4	4	20	ug/L
78-87-5	1,2-Dichloropropane	4	UD	4	4	20	ug/L
74-95-3	Dibromomethane	4	UD	4	4	20	ug/L

A-1002



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW305I-20190313DL	SDG No.:	K1900
Lab Sample ID:	K1900-13DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008262.D	20		03/21/19 00:22	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	4	UD	4	4	20	ug/L
108-10-1	4-Methyl-2-Pentanone	20	UD	20	20	100	ug/L
108-88-3	Toluene	4	UD	4	4	20	ug/L
10061-02-6	t-1,3-Dichloropropene	4	UD	4	4	20	ug/L
10061-01-5	cis-1,3-Dichloropropene	4	UD	4	4	20	ug/L
79-00-5	1,1,2-Trichloroethane	4	UD	4	4	20	ug/L
142-28-9	1,3-Dichloropropane	4	UD	4	4	20	ug/L
591-78-6	2-Hexanone	50	UD	38.8	50	100	ug/L
124-48-1	Dibromochloromethane	4	UD	4	4	20	ug/L
106-93-4	1,2-Dibromoethane	4	UD	4	4	20	ug/L
127-18-4	Tetrachloroethene	4	UD	4	4	20	ug/L
108-90-7	Chlorobenzene	4	UD	4	4	20	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	4	UD	4	4	20	ug/L
67-72-1	Hexachloroethane	4	UD	4	4	20	ug/L
100-41-4	Ethyl Benzene	4	UD	4	4	20	ug/L
179601-23-1	m/p-Xylenes	8	UD	8	8	40	ug/L
95-47-6	o-Xylene	4	UD	4	4	20	ug/L
100-42-5	Styrene	4	UD	4	4	20	ug/L
75-25-2	Bromoform	4	UD	4	4	20	ug/L
98-82-8	Isopropylbenzene	4	UD	4	4	20	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	4	UD	4	4	20	ug/L
96-18-4	1,2,3-Trichloropropane	4	UD	4	4	20	ug/L
108-86-1	Bromobenzene	4	UD	4	4	20	ug/L
103-65-1	n-propylbenzene	4	UD	4	4	20	ug/L
95-49-8	2-Chlorotoluene	4	UD	4	4	20	ug/L
108-67-8	1,3,5-Trimethylbenzene	4	UD	4	4	20	ug/L
106-43-4	4-Chlorotoluene	4	UD	4	4	20	ug/L
98-06-6	tert-Butylbenzene	4	UD	4	4	20	ug/L
95-63-6	1,2,4-Trimethylbenzene	4	UD	4	4	20	ug/L
135-98-8	sec-Butylbenzene	4	UD	4	4	20	ug/L
99-87-6	p-Isopropyltoluene	4	UD	4	4	20	ug/L
541-73-1	1,3-Dichlorobenzene	4	UD	4	4	20	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW305I-20190313DL	SDG No.:	K1900
Lab Sample ID:	K1900-13DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008262.D	20		03/21/19 00:22	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	4	UD	4	4	20	ug/L
104-51-8	n-Butylbenzene	4	UD	4	4	20	ug/L
95-50-1	1,2-Dichlorobenzene	4	UD	4	4	20	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	4	UD	4	4	20	ug/L
120-82-1	1,2,4-Trichlorobenzene	4	UD	4	4	20	ug/L
87-68-3	Hexachlorobutadiene	4	UD	4	4	20	ug/L
91-20-3	Naphthalene	4	UD	4	4	20	ug/L
87-61-6	1,2,3-Trichlorobenzene	4	UD	4	4	20	ug/L
74-88-4	Methyl Iodide	10	UD	4	10	20	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	15	UD	4	15	20	ug/L
80-62-6	Methyl methacrylate	10	UD	4	10	20	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.8		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.2		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.8		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	344049	5.67				
540-36-3	1,4-Difluorobenzene	558334	6.86				
3114-55-4	Chlorobenzene-d5	477023	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	193507	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008221.D	1		03/20/19 04:52	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	7.5		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1005



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008221.D	1		03/20/19 04:52	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.36	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008221.D	1		03/20/19 04:52	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.7		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	47		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.4		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	332994	5.67				
540-36-3	1,4-Difluorobenzene	544584	6.86				
3114-55-4	Chlorobenzene-d5	456898	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	184291	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-14RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008263.D	1		03/21/19 00:47	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	5.1		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1008



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-14RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008263.D	1		03/21/19 00:47	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.37	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW309S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-14RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008263.D	1		03/21/19 00:47	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.8		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	46.7		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.2		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	335261	5.67				
540-36-3	1,4-Difluorobenzene	552581	6.86				
3114-55-4	Chlorobenzene-d5	466492	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	186602	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW301S-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008222.D	1		03/20/19 05:17	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW301S-20190313	SDG No.:	K1900
Lab Sample ID:	K1900-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008222.D	1		03/20/19 05:17	VX031919

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.5		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	47.1		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.5		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	329563	5.67				
540-36-3	1,4-Difluorobenzene	534782	6.86				
3114-55-4	Chlorobenzene-d5	457325	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	183004	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW301S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-15RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008264.D	1		03/21/19 01:12	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1014



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW301S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-15RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008264.D	1		03/21/19 01:12	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/13/19
Client Sample ID:	BPS1-TT-MW301S-20190313RE	SDG No.:	K1900
Lab Sample ID:	K1900-15RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008264.D	1		03/21/19 01:12	VX032019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.7		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	46.9		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48.6		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	45		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	336254	5.67				
540-36-3	1,4-Difluorobenzene	555709	6.86				
3114-55-4	Chlorobenzene-d5	469810	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	188102	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1937**

**ATTENTION : David Brayack**



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## Cover Page

**Order ID :** K1937**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB04-20190313  
BPS1-TT-MW309I-20190313  
BPS1-TT-MW303D-20190313  
BPS1-TT-MW313S-20190313  
BPS1-TT-MW314S-20190313  
BPS1-TT-MW310S-20190314  
BP-MH-SW4001-SOUTH-20190314  
BP-TT-SW4002-20190314  
K1937-12MS  
K1937-12MSD  
BPS1-TT-MW307S-20190314  
BPS1-TT-MW306S-20190314  
BPS1-TT-MW306I-20190314  
BPS1-TT-MW202S-20190314  
BPS1-TT-MW202I-20190314  
BPS1-TT-MW303S-20190314

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : 

NYDOH CERTIFICATION NO - 11376

**APPROVED**

Date: 3/28/2019

By Mildred V Reyes, QAQC Supervisor at 3:08 pm, Mar 28, 2019

NJDEP CERTIFICATION NO - 20012

# SAMPLE DATA

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-TB04-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008301.D	1		03/21/19 19:32	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1022



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-TB04-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008301.D	1		03/21/19 19:32	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-TB04-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008301.D	1		03/21/19 19:32	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	44.6		81 - 118		89%	SPK: 50
1868-53-7	Dibromofluoromethane	45.7		80 - 119		91%	SPK: 50
2037-26-5	Toluene-d8	48		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	228320	5.67				
540-36-3	1,4-Difluorobenzene	375799	6.86				
3114-55-4	Chlorobenzene-d5	322795	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	136406	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW309I-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008302.D	1		03/21/19 19:57	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW309I-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008302.D	1		03/21/19 19:57	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW303D-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008359.D	1		03/23/19 18:56	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.1	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1.6		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW303D-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008359.D	1		03/23/19 18:56	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.8		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49.1		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	230957	5.66				
540-36-3	1,4-Difluorobenzene	401505	6.86				
3114-55-4	Chlorobenzene-d5	342691	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	139551	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW313S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008360.D	1		03/23/19 19:20	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW313S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008360.D	1		03/23/19 19:20	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW313S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008360.D	1		03/23/19 19:20	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.4		81 - 118		97%	SPK: 50
1868-53-7	Dibromofluoromethane	48.1		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	226984	5.66				
540-36-3	1,4-Difluorobenzene	397947	6.86				
3114-55-4	Chlorobenzene-d5	341216	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	140543	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW314S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008361.D	1		03/23/19 19:43	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW314S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008361.D	1		03/23/19 19:43	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/13/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW314S-20190313	SDG No.:	K1937
Lab Sample ID:	K1937-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008361.D	1		03/23/19 19:43	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.1		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.6		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.5		85 - 114		87%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	218270	5.66				
540-36-3	1,4-Difluorobenzene	381349	6.86				
3114-55-4	Chlorobenzene-d5	319116	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	126960	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW310S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008362.D	1		03/23/19 20:06	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW310S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008362.D	1		03/23/19 20:06	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.8		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	47.7		80 - 119		95%	SPK: 50
2037-26-5	Toluene-d8	49.1		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.1		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	223691	5.66				
540-36-3	1,4-Difluorobenzene	391229	6.86				
3114-55-4	Chlorobenzene-d5	335035	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	136716	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008363.D	1		03/23/19 20:29	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008363.D	1		03/23/19 20:29	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.3		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	47.9		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	227052	5.67				
540-36-3	1,4-Difluorobenzene	396847	6.86				
3114-55-4	Chlorobenzene-d5	337973	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	138005	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-TT-SW4002-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008364.D	1		03/23/19 20:53	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BP-TT-SW4002-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008364.D	1		03/23/19 20:53	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.3		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	47.9		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49.2		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		85 - 114		87%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	222847	5.66				
540-36-3	1,4-Difluorobenzene	389467	6.86				
3114-55-4	Chlorobenzene-d5	329448	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	131159	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products







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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW307S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008365.D	1		03/23/19 21:16	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.4		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.9		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.3		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	221394	5.67				
540-36-3	1,4-Difluorobenzene	387902	6.86				
3114-55-4	Chlorobenzene-d5	330684	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	135011	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW306S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-16	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008366.D	1		03/23/19 21:39	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW306S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-16	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008366.D	1		03/23/19 21:39	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.9		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.4		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.9		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.4		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	222183	5.66				
540-36-3	1,4-Difluorobenzene	383314	6.86				
3114-55-4	Chlorobenzene-d5	325890	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	134650	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW306I-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-17	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008367.D	1		03/23/19 22:03	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	2.7		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW306I-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-17	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008367.D	1		03/23/19 22:03	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW306I-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-17	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008367.D	1		03/23/19 22:03	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.5		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.2		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.9		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	222756	5.66				
540-36-3	1,4-Difluorobenzene	386381	6.86				
3114-55-4	Chlorobenzene-d5	331242	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	135022	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW202S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008368.D	1		03/23/19 22:26	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW202S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008368.D	1		03/23/19 22:26	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW202S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008368.D	1		03/23/19 22:26	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.9		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.3		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	218678	5.66				
540-36-3	1,4-Difluorobenzene	378790	6.86				
3114-55-4	Chlorobenzene-d5	325791	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	133791	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW202I-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008369.D	1		03/23/19 22:49	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	3.1		0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	2.4		0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.74	J	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.88	J	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1.9		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1058



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW202I-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008369.D	1		03/23/19 22:49	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	3.1		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW303S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008370.D	1		03/23/19 23:12	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/14/19
Client Sample ID:	BPS1-TT-MW303S-20190314	SDG No.:	K1937
Lab Sample ID:	K1937-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008370.D	1		03/23/19 23:12	VX032319

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.1		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	221871	5.67				
540-36-3	1,4-Difluorobenzene	385002	6.86				
3114-55-4	Chlorobenzene-d5	332693	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	137547	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1963**

**ATTENTION : David Brayack**



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**Order ID :** K1963**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB05-20190314  
BP-TT-AOC22-MW04-20190314  
BP-TT-AOC22-MW04-20190314-F  
BP-DUP03-20190314  
BP-DUP03-20190314-F  
BPS1-TT-MW302S-20190314  
BPS1-TT-MW307I-20190314  
BP-EB02-20190314  
BPS1-TT-MW303I1-20190315  
BPS1-TT-MW303I1-20190315-F  
BP-TT-AOC22-MW03-20190315  
BP-HN-MW24S-20190315  
BP-HN-MW24S-20190315-F  
BP-DUP04-20190315  
BP-DUP04-20190315-F

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**Date: 3/29/2019  
By Mildred V Reyes, QAQC Supervisor at 3:55 pm, Apr 01, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

# SAMPLE DATA

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TB05-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008287.D	1		03/21/19 13:43	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TB05-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008287.D	1		03/21/19 13:43	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TT-AOC22-MW04-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008290.D	1		03/21/19 14:58	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TT-AOC22-MW04-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008290.D	1		03/21/19 14:58	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP03-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008293.D	1		03/21/19 16:12	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP03-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008293.D	1		03/21/19 16:12	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302S-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008291.D	1		03/21/19 15:23	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	1.1		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302S-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008291.D	1		03/21/19 15:23	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.8		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.5		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.4		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	287425	5.67				
540-36-3	1,4-Difluorobenzene	475245	6.86				
3114-55-4	Chlorobenzene-d5	401657	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	160625	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW307I-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008292.D	1		03/21/19 15:48	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.94	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW307I-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008292.D	1		03/21/19 15:48	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	47		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.8		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	279013	5.67				
540-36-3	1,4-Difluorobenzene	460997	6.86				
3114-55-4	Chlorobenzene-d5	390118	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	157750	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-EB02-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008300.D	1		03/21/19 19:07	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	3.6	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-EB02-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008300.D	1		03/21/19 19:07	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	7.1		0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-EB02-20190314	SDG No.:	K1963
Lab Sample ID:	K1963-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008300.D	1		03/21/19 19:07	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	44.2		81 - 118		88%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	238873	5.67				
540-36-3	1,4-Difluorobenzene	386265	6.86				
3114-55-4	Chlorobenzene-d5	338507	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	137323	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW303I1-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008294.D	1		03/21/19 16:37	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.68	J	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	5.2		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW303I1-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008294.D	1		03/21/19 16:37	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	20.4		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW303I1-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008294.D	1		03/21/19 16:37	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.9		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	47.2		80 - 119		94%	SPK: 50
2037-26-5	Toluene-d8	48		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	45		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	265416	5.67				
540-36-3	1,4-Difluorobenzene	441672	6.86				
3114-55-4	Chlorobenzene-d5	374388	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	153708	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TT-AOC22-MW03-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008295.D	1		03/21/19 17:02	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	3.3	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	5.4		1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TT-AOC22-MW03-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008295.D	1		03/21/19 17:02	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-TT-AOC22-MW03-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008295.D	1		03/21/19 17:02	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.9		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	47.7		80 - 119		95%	SPK: 50
2037-26-5	Toluene-d8	48.5		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	263110	5.67				
540-36-3	1,4-Difluorobenzene	430287	6.86				
3114-55-4	Chlorobenzene-d5	367789	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	152748	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-HN-MW24S-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008296.D	1		03/21/19 17:27	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.1	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-HN-MW24S-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008296.D	1		03/21/19 17:27	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-HN-MW24S-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008296.D	1		03/21/19 17:27	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	46.7		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.7		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44		85 - 114		88%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	252751	5.67				
540-36-3	1,4-Difluorobenzene	412275	6.86				
3114-55-4	Chlorobenzene-d5	347508	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	139645	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP04-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008297.D	1		03/21/19 17:52	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP04-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008297.D	1		03/21/19 17:52	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP04-20190315	SDG No.:	K1963
Lab Sample ID:	K1963-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008297.D	1		03/21/19 17:52	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.5		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	46.6		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.5		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.6		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	240623	5.67				
540-36-3	1,4-Difluorobenzene	400611	6.86				
3114-55-4	Chlorobenzene-d5	347639	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	142744	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1965**

**ATTENTION : David Brayack**



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## Cover Page

**Order ID :** K1965

**Project ID :** CTO WE13

**Client :** Tetra Tech NUS, Inc.

### Lab Sample Number

K1965-01  
K1965-02  
K1965-03  
K1965-04  
K1965-05  
K1965-06  
K1965-07  
K1965-08  
K1965-09  
K1965-10  
K1965-11  
K1965-12

### Client Sample Number

BPS1-TT-MW314I-20190314  
BPS1-TT-MW314I-20190314-F  
BPS1-TT-MW311S-20190314  
BPS1-TT-MW311I-20190314  
BPS1-TT-MW312I-20190315  
BP-HN-MW24IR-20190315  
BP-HN-MW24IR-20190315-F  
BP-DUP05-20190315  
BP-DUP05-20190315-F  
BPS1-TT-MW303I2-20190315  
BPS1-TT-MW302I1-20190315  
BPS1-TT-MW302I2-20190315

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :



**APPROVED**

Date: 3/29/2019

By Mildred V Reyes, QAQC Supervisor at 2:59 pm, Mar 29, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

# SAMPLE DATA

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW314I-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054557.D	1		03/22/19 14:52	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1104



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW314I-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054557.D	1		03/22/19 14:52	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW314I-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054557.D	1		03/22/19 14:52	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54.3		81 - 118		109%	SPK: 50
1868-53-7	Dibromofluoromethane	52.6		80 - 119		105%	SPK: 50
2037-26-5	Toluene-d8	53.5		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	47		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	670819	7.67				
540-36-3	1,4-Difluorobenzene	1024720	8.59				
3114-55-4	Chlorobenzene-d5	837204	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	295218	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW311S-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054513.D	1		03/21/19 16:10	VN032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW311S-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054513.D	1		03/21/19 16:10	VN032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.8		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	48.1		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		85 - 114		87%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	728222	7.67				
540-36-3	1,4-Difluorobenzene	1077610	8.59				
3114-55-4	Chlorobenzene-d5	890879	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	316826	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW311I-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054561.D	1		03/22/19 16:42	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/14/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW311I-20190314	SDG No.:	K1965
Lab Sample ID:	K1965-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054561.D	1		03/22/19 16:42	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	56		81 - 118		112%	SPK: 50
1868-53-7	Dibromofluoromethane	52.3		80 - 119		105%	SPK: 50
2037-26-5	Toluene-d8	52.8		89 - 112		106%	SPK: 50
460-00-4	4-Bromofluorobenzene	46		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	623188	7.67				
540-36-3	1,4-Difluorobenzene	1001270	8.59				
3114-55-4	Chlorobenzene-d5	811148	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	283772	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW312I-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054563.D	1		03/22/19 17:37	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW312I-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054563.D	1		03/22/19 17:37	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-HN-MW24IR-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054564.D	1		03/22/19 18:05	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.87	J	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.8	J	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	2.7		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-HN-MW24IR-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054564.D	1		03/22/19 18:05	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	56.1		81 - 118		112%	SPK: 50
1868-53-7	Dibromofluoromethane	52.8		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	52.6		89 - 112		105%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.7		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	620532	7.67				
540-36-3	1,4-Difluorobenzene	991302	8.59				
3114-55-4	Chlorobenzene-d5	802083	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	272809	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP05-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054565.D	1		03/22/19 18:32	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.87	J	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.77	J	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	2.8		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1119



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP05-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054565.D	1		03/22/19 18:32	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	2.6		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BP-DUP05-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054565.D	1		03/22/19 18:32	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	53.1		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	52.7		89 - 112		105%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.4		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	630993	7.67				
540-36-3	1,4-Difluorobenzene	974616	8.59				
3114-55-4	Chlorobenzene-d5	785256	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	272740	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW303I2-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054566.D	1		03/22/19 19:00	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	1.6		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1122



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW303I2-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054566.D	1		03/22/19 19:00	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302I1-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054567.D	1		03/22/19 19:27	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	1.2		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	3.2		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1125



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302I1-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054567.D	1		03/22/19 19:27	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.61	J	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302I2-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054568.D	1		03/22/19 19:55	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	2.2		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1128



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/15/19
Client Sample ID:	BPS1-TT-MW302I2-20190315	SDG No.:	K1965
Lab Sample ID:	K1965-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN054568.D	1		03/22/19 19:55	VN032219

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1969**

**ATTENTION : David Brayack**



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**Order ID :** K1969**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB06-20190315  
BP-TT-MW203I-20190315  
BPS1-TT-MW312S-20190315  
BPS1-TT-MW312S-20190315-F  
BPS1-TT-MW301I-20190316  
BPS1-TT-DUP07-20190316  
BP-HN-MW29IR-20190316  
BP-TT-AOC22-MW10-20190316  
BP-TT-DUP06-20190316  
BP-TT-AOC22-MW10-20190316-F  
BP-TT-DUP06-20190316-F

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**

By Mildred V Reyes, QAQC Supervisor at 7:23 pm, Apr 01, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TB06-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008381.D	1		03/24/19 11:02	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.24	J	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TB06-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008381.D	1		03/24/19 11:02	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TB06-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008381.D	1		03/24/19 11:02	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.3		81 - 118		97%	SPK: 50
1868-53-7	Dibromofluoromethane	48.4		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.2		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.4		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	223552	5.67				
540-36-3	1,4-Difluorobenzene	382377	6.86				
3114-55-4	Chlorobenzene-d5	328231	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	134158	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-MW2031-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008399.D	1		03/24/19 18:01	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-MW2031-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008399.D	1		03/24/19 18:01	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-MW2031-20190315	SDG No.:	K1969
Lab Sample ID:	K1969-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008399.D	1		03/24/19 18:01	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.8		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.4		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.2		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.1		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	218061	5.66				
540-36-3	1,4-Difluorobenzene	376110	6.86				
3114-55-4	Chlorobenzene-d5	325624	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	133309	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products









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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW312S-20190315RE	SDG No.:	K1969
Lab Sample ID:	K1969-03RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008433.D	1		03/26/19 00:29	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	UQ	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.8	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.4	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/15/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW312S-20190315RE	SDG No.:	K1969
Lab Sample ID:	K1969-03RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008433.D	1		03/26/19 00:29	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008397.D	1		03/24/19 17:15	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.6	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008397.D	1		03/24/19 17:15	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008397.D	1		03/24/19 17:15	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.5		81 - 118		97%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.6		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.8		85 - 114		88%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	216305	5.66				
540-36-3	1,4-Difluorobenzene	370675	6.86				
3114-55-4	Chlorobenzene-d5	311942	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	128065	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-05RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008432.D	1		03/26/19 00:05	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	UQ	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.7	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-05RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008432.D	1		03/26/19 00:05	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BPS1-TT-MW301I-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-05RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008432.D	1		03/26/19 00:05	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	47.4		81 - 118		95%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		80 - 119		95%	SPK: 50
2037-26-5	Toluene-d8	47.9		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.4		85 - 114		87%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	227788	5.66				
540-36-3	1,4-Difluorobenzene	389973	6.85				
3114-55-4	Chlorobenzene-d5	335893	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	137708	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-HN-MW29IR-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008396.D	1		03/24/19 16:51	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.7	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-HN-MW29IR-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008396.D	1		03/24/19 16:51	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-HN-MW29IR-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008396.D	1		03/24/19 16:51	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.5		81 - 118		97%	SPK: 50
1868-53-7	Dibromofluoromethane	48.5		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.3		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	216169	5.67				
540-36-3	1,4-Difluorobenzene	371532	6.86				
3114-55-4	Chlorobenzene-d5	319071	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	128474	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-HN-MW29IR-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-07RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008431.D	1		03/25/19 23:42	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	UQ	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.8	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-HN-MW29IR-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-07RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008431.D	1		03/25/19 23:42	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-AOC22-MW10-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008395.D	1		03/24/19 16:28	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	3	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.26	J	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.32	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-AOC22-MW10-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008395.D	1		03/24/19 16:28	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-AOC22-MW10-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008395.D	1		03/24/19 16:28	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48.6		81 - 118		97%	SPK: 50
1868-53-7	Dibromofluoromethane	48.4		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.1	*	85 - 114		84%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	216207	5.67				
540-36-3	1,4-Difluorobenzene	372683	6.86				
3114-55-4	Chlorobenzene-d5	311521	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	117631	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-AOC22-MW10-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-08RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008430.D	1		03/25/19 23:19	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	UQ	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	3.3	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-AOC22-MW10-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-08RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008430.D	1		03/25/19 23:19	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-DUP06-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008394.D	1		03/24/19 16:05	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.4	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.3	J	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.3	J	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-DUP06-20190316	SDG No.:	K1969
Lab Sample ID:	K1969-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008394.D	1		03/24/19 16:05	VX032419

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.2		81 - 118		98%	SPK: 50
1868-53-7	Dibromofluoromethane	48.5		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	223465	5.66				
540-36-3	1,4-Difluorobenzene	384825	6.86				
3114-55-4	Chlorobenzene-d5	331644	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	137631	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-DUP06-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-09RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008429.D	1		03/25/19 22:56	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	UQ	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	2.9	J	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1169



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/16/19
Project:	CTO WE13	Date Received:	03/16/19
Client Sample ID:	BP-TT-DUP06-20190316RE	SDG No.:	K1969
Lab Sample ID:	K1969-09RE	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008429.D	1		03/25/19 22:56	VX032519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K1985**

**ATTENTION : David Brayack**



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**Order ID :** K1985

**Project ID :** CTO WE13

**Client :** Tetra Tech NUS, Inc.

**Lab Sample Number**

K1985-01  
K1985-02  
K1985-03  
K1985-04

**Client Sample Number**

BP-TB07-20190317  
BP-EB03-20190317  
BP-EB03-20190317-F  
BPS1-TT-MW308I-20190317

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

*Mildred V Reyes*

NYDOH CERTIFICATION NO - 11376

**APPROVED**

Date: 3/30/2019

By Mildred V Reyes, QAQC Supervisor at 12:49 pm, Apr 01, 2019

NJDEP CERTIFICATION NO - 20012

SAMPLE  
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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BP-TB07-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008286.D	1		03/21/19 13:18	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BP-EB03-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008298.D	1		03/21/19 18:17	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BP-EB03-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008298.D	1		03/21/19 18:17	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	44.4		81 - 118		89%	SPK: 50
1868-53-7	Dibromofluoromethane	46.5		80 - 119		93%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	238369	5.67				
540-36-3	1,4-Difluorobenzene	387665	6.86				
3114-55-4	Chlorobenzene-d5	338958	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	138253	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BPS1-TT-MW308I-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008289.D	1		03/21/19 14:33	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
107-02-8	Acrolein	3.8	U	0.5	3.8	25	ug/L
107-13-1	Acrylonitrile	1	U	1	1	5	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.2	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.39	0.5	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
74-95-3	Dibromomethane	0.2	U	0.2	0.2	1	ug/L

A-1183



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BPS1-TT-MW308I-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008289.D	1		03/21/19 14:33	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
142-28-9	1,3-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
67-72-1	Hexachloroethane	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.2	U	0.2	0.2	1	ug/L
108-86-1	Bromobenzene	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
95-49-8	2-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
106-43-4	4-Chlorotoluene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	03/17/19
Project:	CTO WE13	Date Received:	03/18/19
Client Sample ID:	BPS1-TT-MW308I-20190317	SDG No.:	K1985
Lab Sample ID:	K1985-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX008289.D	1		03/21/19 14:33	VX032119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
87-68-3	Hexachlorobutadiene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	1	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	0.75	U	0.2	0.75	1	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.2	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.1		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.1		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.2		85 - 114		90%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	301745	5.67				
540-36-3	1,4-Difluorobenzene	490728	6.86				
3114-55-4	Chlorobenzene-d5	417452	10.12				
3855-82-1	1,4-Dichlorobenzene-d4	170121	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE103D1 RE103D1-20190605 20190605 NM K3255	RE103D2 RE103D2-20190605-D 20190605 FD RE103D2-20190605 K3257	RE103D2 RE103D2-20190605 20190605 NM K3255	RE103D3 RE103D3-20190605 20190605 NM K3257
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.67 J	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	6.7	1.6 J	1.7 J	2.1 J
1,1-DICHLOROETHANE	5	0.76 J	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	3.9 J	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	25 U	2.5 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 UJ	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.38 J	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 UJ	0.5 U	0.5 UJ	0.5 U
CHLOROFORM	7	0.7 J	0.58 J	0.61 J	0.46 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.4 J	0.48 J	0.53 J	0.7 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.9 J	0.53 J	0.56 J	0.66 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	850	440	450	430
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	8.5	0.76 J	0.1	0.44
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE104D1 RE104D1-20190607 20190607 NM K3315	RE104D2 RE104D2-20190607 20190607 NM K3315	RE104D3 RE104D3-20190607 20190607 NM K3315	RE104D3 RE104D3-20190607-D 20190607 FD RE104D3-20190607 K3315
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	1.3 J	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 UJ	0.5 U	0.5 UJ
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 UJ	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 UJ	0.5 U	0.5 UJ
CHLOROETHANE	5	0.5 UJ	0.5 U	0.5 UJ	0.5 U
CHLOROFORM	7	0.5 U	0.56 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.59 J	5.2	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.5 J	0.5 U	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	50	30.7	0.5 U	0.5 U
TRICHLOROFLUOROMETHANE	5	0.5 UJ	0.5 U	0.5 UJ	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	4.2	0.33 J	0.1 U	0.1 U
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE105D1 RE105D1-20190610 20190610 NM  K3315	RE105D2 RE105D2-20190610 20190610 NM  K3315	RE108D1 RE108D1-20190604 20190604 NM  K3255	RE108D2 RE108D2-20190604 20190604 NM  K3255
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	7.5 U	0.75 U	7.5 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	5 U	0.5 U	5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	5 U	0.5 U	5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	4.9 J	14.9 J	0.5 U	5 U
1,1-DICHLOROETHANE	5	0.5 U	5 U	0.5 U	5 U
1,1-DICHLOROETHENE	5	0.74 J	5 U	0.5 U	5 U
1,2-DICHLOROBENZENE	3	0.5 U	5 U	0.5 U	5 U
1,2-DICHLOROETHANE	0.6	0.75 U	7.5 U	0.75 U	7.5 U
1,2-DICHLOROPROPANE	1	0.5 U	5 U	0.5 U	5 U
1,3-DICHLOROBENZENE	3	0.5 U	5 U	0.5 U	5 U
1,4-DICHLOROBENZENE	3	0.5 U	5 U	0.5 U	5 U
2-BUTANONE	50	2.5 U	25 U	2.5 U	25 U
2-HEXANONE	50	3.8 U	37.5 U	3.8 U	37.5 U
4-METHYL-2-PENTANONE	NL	2.5 U	25 U	2.5 U	25 U
ACETONE	50	25 U	25 U	2.5 U	25 U
BENZENE	1	0.5 U	5 U	0.5 U	5 U
BROMODICHLOROMETHANE	50	0.5 U	5 U	0.5 U	5 U
BROMOFORM	50	0.5 UJ	5 UJ	0.5 U	5 U
BROMOMETHANE	5	0.5 U	5 U	0.5 UJ	5 UJ
CARBON DISULFIDE	60	0.5 U	5 U	0.5 U	5 U
CARBON TETRACHLORIDE	5	0.5 U	5 U	0.5 U	5 U
CHLOROBENZENE	5	0.5 U	5 U	0.5 U	5 U
CHLORODIBROMOMETHANE	5	0.5 UJ	5 UJ	0.5 U	5 U
CHLOROETHANE	5	0.5 U	5 U	0.5 U	5 U
CHLOROFORM	7	0.5 U	5 U	0.5 U	5 U
CHLOROMETHANE	5	0.5 U	5 U	0.5 U	5 U
CIS-1,2-DICHLOROETHENE	5	1.1 J	5 U	0.5 U	6 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	5 U	0.5 U	5 U
ETHYLBENZENE	5	0.5 U	5 U	0.5 U	5 U
ISOPROPYLBENZENE	5	0.5 U	5 U	0.5 U	5 U
M+P-XYLENES	10	1 U	10 U	1 U	10 U
METHYL CYCLOHEXANE	NL	0.5 U	5 U	0.5 U	5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	5 U	0.5 U	5 U
METHYLENE CHLORIDE	5	0.5 U	5 U	0.5 U	5 U
O-XYLENE	5	0.5 U	5 U	0.5 U	5 U
STYRENE	5	0.5 U	5 U	0.5 U	5 U
TETRACHLOROETHENE	5	0.34 J	5 U	1.1 J	5 U
TOLUENE	5	0.5 U	5 U	0.5 U	5 J
TRANS-1,2-DICHLOROETHENE	5	0.5 U	5 U	0.5 U	5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	5 U	0.5 U	5 U
TRICHLOROETHENE	5	83.6	1400	28.5	2700
TRICHLOROFLUOROMETHANE	5	0.5 U	5 U	0.5 U	5 U
VINYL CHLORIDE	2	0.5 U	5 U	0.5 U	5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	4.8	3.1	3.6	4.4
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE109D1 RE109D1-20190605 20190605 NM  K3255	RE109D2 RE109D2-20190605 20190605 NM  K3255	RE109D3 RE109D3-20190605 20190605 NM  K3255	RE117D1 RE117D1-20190603 20190603 NM  K3255
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	1.1 J	2.1 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.9 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.81 J	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.53 J	0.5 U	0.46 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	21.4	33.8	59.9	51.8
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	3.1	2.3	3.1	2.9
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.54 J	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.71 J	0.54 J	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	13.7	17.5	5.3
1,1-DICHLOROETHANE	5	0.5 U	1.2 J	0.78 J	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	7.7	3.6 J	1.3 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.43 J	0.59 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 UJ
CHLOROFORM	7	0.5 U	0.59 J	0.63 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	2.8 J	3.1 J	1 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	3.3 J	5.8	1.1 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	0.44 J	790	740	200
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.1 U	9.5	8.6	1.4
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	25	19	0.70
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	24	19	3.8

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	7.5 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.31 J	0.3 J	5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	3.3 J	3.4 J	10 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	5 U	0.5 U
1,1-DICHLOROETHENE	5	0.92 J	0.98 J	5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	7.5 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	25 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	37.5 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	25 U	2.5 U
ACETONE	50	2.5 U	2.5 U	25 U	2.5 U
BENZENE	1	0.5 U	0.5 U	5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	5 UJ	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	5 U	0.5 U
CARBON TETRACHLORIDE	5	0.56 J	0.61 J	5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	5 U	0.5 U
CHLOROETHANE	5	0.5 UJ	0.5 UJ	5 U	0.5 U
CHLOROFORM	7	0.53 J	0.5 J	5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.7 J	2.8 J	5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	10 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	5 U	0.5 U
TETRACHLOROETHENE	5	1.8 J	2.1 J	5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	7.9 J	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.51 J	0.45 J	5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	5 U	0.5 U
TRICHLOROETHENE	5	540	540	3200	7.5
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	4	3.7	5.2	0.1 U
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U	8.9
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	1.8 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.3 J	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 UJ
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.64 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	3.8 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	0.96 J	0.5 U	5.3
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	10.1	1.8 J	0.5 U	160
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	1.9 J	0.44	0.1 U	8.4
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.38 J
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.33 J	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	16.6	42.1	0.5 U	0.65 J
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	1.1 J
1,1-DICHLOROETHENE	5	5	0.72 J	0.5 U	1.1 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	2.5 U	2.5 U	2.7 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.59 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 UJ
CHLOROFORM	7	0.38 J	0.34 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	3.8 J	1.8 J	0.46 J	1.4 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	3.4 J	3.4 J	1.1 J	1.1 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	210	150	36.7	540
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	12	3	2.9	0.63
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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NWIRP BETHPAGE, NY  
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LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE126D3 RE126D3-20190604 20190604 NM  K3255	RE131D1 RE131D1-20190606-D 20190606 FD RE131D1-20190606 K3257	RE131D1 RE131D1-20190606 20190606 NM  K3257	RE131D2 RE131D2-20190606 20190606 NM  K3257
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	3.4 J	3.3 J	190
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.79 J	0.76 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	25 U	25 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 UJ	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 UJ	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	1.8 J	1.7 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	4.1 J	4.4 J	4.8 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.49 J	0.47 J	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.1 J	13.7	13.2	12.8
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	2.3 J	160	160	85
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.63	9.2	10.2	10.1
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

TETRA TECH  
VALIDATED ANALYTICAL RESULTS  
JUNE 2019  
NWIRP BETHPAGE, NY  
PAGE 10 OF 10

LOCATION SAMPLE ID SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE131D3 RE131D3-20190606 20190606 NM  K3257	TT101D TT101D-20190610 20190610 NM  K3315	TT-101D1 TT101D1-20190610 20190610 NM  K3315	TT-101D2 TT101D2-20190610 20190610 NM  K3315
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.54 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.53 J	0.67 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	210	12.6	19.9	24.9
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	1.6 J	2.5 J	7.7	5.3
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.6 J	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	1.6 J	1.4 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.42 J	0.82 J	0.85 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.76 J	3 J	2 J	3.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	5.2	0.28 J	0.5 U	1.8 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	14.3	80.8	210	890
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	1.5	6.5	7.4	2.4
<b>8260 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3190**

**ATTENTION : David Brayack**



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**Order ID :** K3190**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB01-20190603  
BP-TT-MW201D-20190603  
BP-TT-MW201D-20190603-F  
BP-TT-MW201D1-20190603  
BP-TT-MW201D1-20190603-F  
BP-TT-AOC22-MW08-20190603  
BP-TT-AOC22-MW09-20190603  
BP-TT-AOC22-MW04-20190603  
BP-TT-AOC22-MW04-20190603-F  
BP-DUP01-20190603  
BP-DUP01-20190603-F  
BPS1-TT-MW307D-20190604  
BPS1-TT-MW306S-20190604  
BPS1-TT-MW304D-20190604  
BPS1-TT-MW304S-20190604  
BPS1-TT-MW304S-20190604MS  
BPS1-TT-MW304S-20190604MSD  
BPS1-TT-MW304I2-20190604  
BPS1-TT-MW304I1-20190604  
BP-TT-AOC22-MW07-20190604  
BP-EB01-20190604  
BPS1-TT-MW307I-20190604

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**REVIEWED***By Nimisha Pandya, Data Reviewer at 4:57 pm, Jun 20, 2019*

Date: 6/14/2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

SAMPLE  
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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TB01-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010071.D	1		06/05/19 12:57	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1201





284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TB01-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010071.D	1		06/05/19 12:57	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.2		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	48		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49.3		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.7		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	184798	5.67				
540-36-3	1,4-Difluorobenzene	295351	6.86				
3114-55-4	Chlorobenzene-d5	265484	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	119730	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-MW201D-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010073.D	1		06/05/19 13:44	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	74.9		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-MW201D-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010073.D	1		06/05/19 13:44	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	47.1		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	48		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.8		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.4		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	177693	5.67				
540-36-3	1,4-Difluorobenzene	287015	6.86				
3114-55-4	Chlorobenzene-d5	255565	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	112963	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-MW201D1-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010074.D	1		06/05/19 14:07	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	1.5	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	2.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1207





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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-MW201D1-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010074.D	1		06/05/19 14:07	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.4		81 - 118		93%	SPK: 50
1868-53-7	Dibromofluoromethane	48.2		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.9		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	180172	5.66				
540-36-3	1,4-Difluorobenzene	287736	6.86				
3114-55-4	Chlorobenzene-d5	258366	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	113821	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW08-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010075.D	1		06/05/19 14:31	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	1.7	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.86	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1210



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW08-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010075.D	1		06/05/19 14:31	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW08-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010075.D	1		06/05/19 14:31	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.9		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	48.9		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.9		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	178102	5.67				
540-36-3	1,4-Difluorobenzene	285677	6.86				
3114-55-4	Chlorobenzene-d5	257516	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	112030	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW09-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010076.D	1		06/05/19 14:54	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	1.9		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW09-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010076.D	1		06/05/19 14:54	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW09-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010076.D	1		06/05/19 14:54	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.8		81 - 118		94%	SPK: 50
1868-53-7	Dibromofluoromethane	49		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	49.2		89 - 112		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.6		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	179038	5.67				
540-36-3	1,4-Difluorobenzene	286642	6.86				
3114-55-4	Chlorobenzene-d5	255856	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	111362	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW04-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010077.D	1		06/05/19 15:18	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.1	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW04-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010077.D	1		06/05/19 15:18	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW04-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010077.D	1		06/05/19 15:18	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.1		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	48.8		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	49.8		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.5		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	179586	5.67				
540-36-3	1,4-Difluorobenzene	283287	6.86				
3114-55-4	Chlorobenzene-d5	255976	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	112535	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1218



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-DUP01-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056064.D	1		06/06/19 23:43	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.2	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-DUP01-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056064.D	1		06/06/19 23:43	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/03/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-DUP01-20190603	SDG No.:	K3190
Lab Sample ID:	K3190-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056064.D	1		06/06/19 23:43	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	UQ	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	51.8		81 - 118		104%	SPK: 50
1868-53-7	Dibromofluoromethane	49.1		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	53.5		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.8		85 - 114		100%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	357595	7.66				
540-36-3	1,4-Difluorobenzene	539457	8.59				
3114-55-4	Chlorobenzene-d5	508972	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	170087	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW307D-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056065.D	1		06/07/19 00:08	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.89	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW306S-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056066.D	1		06/07/19 00:33	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.56	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW306S-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056066.D	1		06/07/19 00:33	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.45	J	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.28	J	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304D-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056067.D	1		06/07/19 00:58	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304D-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056067.D	1		06/07/19 00:58	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304S-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056080.D	1		06/07/19 06:24	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQM	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304S-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056080.D	1		06/07/19 06:24	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304S-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056080.D	1		06/07/19 06:24	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	UQ	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.5		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	48.8		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	53.4		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.8		85 - 114		102%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	331671	7.66				
540-36-3	1,4-Difluorobenzene	502803	8.58				
3114-55-4	Chlorobenzene-d5	481298	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	151864	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304I2-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056068.D	1		06/07/19 01:23	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1234



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304I2-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056068.D	1		06/07/19 01:23	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304I1-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056069.D	1		06/07/19 01:48	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW304I1-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056069.D	1		06/07/19 01:48	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	UQ	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.7		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	52.5		89 - 112		105%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.8		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	324544	7.66				
540-36-3	1,4-Difluorobenzene	493291	8.59				
3114-55-4	Chlorobenzene-d5	461218	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	142035	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW07-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010078.D	1		06/05/19 15:41	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	1.6	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-TT-AOC22-MW07-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010078.D	1		06/05/19 15:41	VX060519

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-EB01-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-21	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056062.D	1		06/06/19 22:53	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	1.6		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BP-EB01-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-21	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056062.D	1		06/06/19 22:53	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	UQ	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	50		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	53.9		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.2		85 - 114		98%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	330592	7.66				
540-36-3	1,4-Difluorobenzene	500604	8.58				
3114-55-4	Chlorobenzene-d5	466746	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	143462	13.35				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW307I-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-22	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056070.D	1		06/07/19 02:14	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	UQ	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.81	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1246



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW307I-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-22	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056070.D	1		06/07/19 02:14	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/04/19
Client Sample ID:	BPS1-TT-MW307I-20190604	SDG No.:	K3190
Lab Sample ID:	K3190-22	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056070.D	1		06/07/19 02:14	VN060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	UQ	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.8		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	49.2		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	53.7		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.9		85 - 114		102%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	343277	7.66				
540-36-3	1,4-Difluorobenzene	514942	8.58				
3114-55-4	Chlorobenzene-d5	488893	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	162668	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3221**

**ATTENTION : David Brayack**



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**Order ID :** K3221**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB02-20190604  
BP-TT-AOC22-MW06-20190604  
BP-TT-AOC22-MW06-20190604-F  
BPS1-TT-MW309D-20190605  
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BPS1-TT-MW314I-20190605-F  
BPS1-TT-MW301S-20190605  
BPS1-TT-MW301I-20190605  
BPS1-TT-MW301D-20190605  
BPS1-TT-MW313S-20190605

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**Date: 6/21/2019  
By Mildred V Reyes, QAQC Schedule at 3:14 pm, Jun 21, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-TB02-20190604	SDG No.:	K3221
Lab Sample ID:	K3221-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010140.D	1		06/08/19 15:56	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-TB02-20190604	SDG No.:	K3221
Lab Sample ID:	K3221-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010140.D	1		06/08/19 15:56	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.5		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	50		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.6		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.9		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	310935	5.67				
540-36-3	1,4-Difluorobenzene	466379	6.86				
3114-55-4	Chlorobenzene-d5	418764	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	194856	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-TT-AOC22-MW06-20190604	SDG No.:	K3221
Lab Sample ID:	K3221-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010116.D	1		06/07/19 18:14	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.8	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-TT-AOC22-MW06-20190604	SDG No.:	K3221
Lab Sample ID:	K3221-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010116.D	1		06/07/19 18:14	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/04/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-TT-AOC22-MW06-20190604	SDG No.:	K3221
Lab Sample ID:	K3221-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010116.D	1		06/07/19 18:14	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	49.5		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	50.6		80 - 119		101%	SPK: 50
2037-26-5	Toluene-d8	50.4		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		85 - 114		97%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	349587	5.67				
540-36-3	1,4-Difluorobenzene	537517	6.86				
3114-55-4	Chlorobenzene-d5	479783	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	227036	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1259



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010168.D	1		06/10/19 11:28	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	3.3	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.32	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.56	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010168.D	1		06/10/19 11:28	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.93	J	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010168.D	1		06/10/19 11:28	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.2		81 - 118		90%	SPK: 50
1868-53-7	Dibromofluoromethane	50.3		80 - 119		101%	SPK: 50
2037-26-5	Toluene-d8	50.4		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.9		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	277185	5.67				
540-36-3	1,4-Difluorobenzene	414613	6.86				
3114-55-4	Chlorobenzene-d5	369855	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	169139	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010169.D	1		06/10/19 11:52	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	4.9		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010170.D	1		06/10/19 12:15	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.7	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010170.D	1		06/10/19 12:15	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW309I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010170.D	1		06/10/19 12:15	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.7		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	50.2		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.9		89 - 112		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.4		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	280183	5.67				
540-36-3	1,4-Difluorobenzene	422391	6.86				
3114-55-4	Chlorobenzene-d5	376621	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	176052	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW314S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010171.D	1		06/10/19 12:38	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW314S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010171.D	1		06/10/19 12:38	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.1		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	49.3		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.9		89 - 112		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	47		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	273319	5.67				
540-36-3	1,4-Difluorobenzene	419767	6.86				
3114-55-4	Chlorobenzene-d5	374613	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	176949	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1271



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BP-DUP02-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010172.D	1		06/10/19 13:02	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.6	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.32	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.48	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW314I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010118.D	1		06/07/19 19:00	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	3	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW314I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010118.D	1		06/07/19 19:00	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW314I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010118.D	1		06/07/19 19:00	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	48		81 - 118		96%	SPK: 50
1868-53-7	Dibromofluoromethane	50.5		80 - 119		101%	SPK: 50
2037-26-5	Toluene-d8	50.4		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.6		85 - 114		95%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	321157	5.67				
540-36-3	1,4-Difluorobenzene	487457	6.86				
3114-55-4	Chlorobenzene-d5	437685	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	200349	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1277



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010125.D	1		06/07/19 21:44	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.6	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010125.D	1		06/07/19 21:44	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	47.4		81 - 118		95%	SPK: 50
1868-53-7	Dibromofluoromethane	49.9		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.7		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.3		85 - 114		97%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	317447	5.67				
540-36-3	1,4-Difluorobenzene	485887	6.86				
3114-55-4	Chlorobenzene-d5	440063	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	206200	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010123.D	1		06/07/19 20:57	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301I-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010123.D	1		06/07/19 20:57	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010121.D	1		06/07/19 20:10	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010121.D	1		06/07/19 20:10	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW301D-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010121.D	1		06/07/19 20:10	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	47.3		81 - 118		95%	SPK: 50
1868-53-7	Dibromofluoromethane	49.9		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.8		89 - 112		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.1		85 - 114		96%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	326649	5.67				
540-36-3	1,4-Difluorobenzene	496371	6.86				
3114-55-4	Chlorobenzene-d5	445509	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	209134	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/05/19
Client Sample ID:	BPS1-TT-MW313S-20190605	SDG No.:	K3221
Lab Sample ID:	K3221-16	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010119.D	1		06/07/19 19:24	VX060719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1287





**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3249**

**ATTENTION : David Brayack**



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## Cover Page

**Order ID :** K3249**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

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**Client Sample Number**

BP-TB03-20190605  
BP-EB02-20190605  
BP-EB02-20190605-F  
BPS1-TT-MW302S-20190606  
BPS1-TT-MW302I1-20190606  
BPS1-TT-MW305S-20190606  
BPS1-TT-MW305S-20190606-F  
BPS1-TT-MW305I-20190606  
BP-DUP03-20190606  
BP-DUP03-20190606-F  
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BP-HN-MW24S-20190606  
BP-HN-MW24S-20190606-F  
BP-DUP04-20190606  
BP-DUP04-20190606-F  
BP-DUP05-20190606  
BP-DUP05-20190606-F  
BP-HN-MW24IR-20190606  
BP-HN-MW24IR-20190606-F  
BPS1-TT-MW303S-20190606

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : **APPROVED**

Date: 6/18/2019

By Mildred V Reyes, QAQC Supervisor at 9:53 am, Jun 21, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-TB03-20190605	SDG No.:	K3249
Lab Sample ID:	K3249-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010141.D	1		06/08/19 16:20	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-TB03-20190605	SDG No.:	K3249
Lab Sample ID:	K3249-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010141.D	1		06/08/19 16:20	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-TB03-20190605	SDG No.:	K3249
Lab Sample ID:	K3249-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010141.D	1		06/08/19 16:20	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.7		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	50		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.3		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.2		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	308319	5.66				
540-36-3	1,4-Difluorobenzene	466726	6.86				
3114-55-4	Chlorobenzene-d5	420093	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	195857	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-EB02-20190605	SDG No.:	K3249
Lab Sample ID:	K3249-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010144.D	1		06/08/19 17:30	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/05/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-EB02-20190605	SDG No.:	K3249
Lab Sample ID:	K3249-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010144.D	1		06/08/19 17:30	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.3		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	49.9		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.2		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.4		85 - 114		95%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	297201	5.66				
540-36-3	1,4-Difluorobenzene	449690	6.86				
3114-55-4	Chlorobenzene-d5	403509	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	188881	12.07				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW302S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010175.D	1		06/10/19 14:12	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.48	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW302S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010175.D	1		06/10/19 14:12	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.9	J	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW302I1-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010176.D	1		06/10/19 14:35	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	1.4		0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	3.8		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1304



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW302I1-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010176.D	1		06/10/19 14:35	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.98	J	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010179.D	1		06/10/19 15:45	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305I-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010153.D	10		06/08/19 21:00	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	5	U	2.2	5	10	ug/L
74-87-3	Chloromethane	7.5	U	3	7.5	10	ug/L
75-01-4	Vinyl Chloride	5	U	1.6	5	10	ug/L
74-83-9	Bromomethane	37.5	U	20.5	37.5	50	ug/L
75-00-3	Chloroethane	7.5	U	3.4	7.5	10	ug/L
75-69-4	Trichlorofluoromethane	5	U	1.6	5	10	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	5	U	2.1	5	10	ug/L
75-35-4	1,1-Dichloroethene	5	U	1.8	5	10	ug/L
107-02-8	Acrolein	200	U	110	200	250	ug/L
107-13-1	Acrylonitrile	25	U	7.3	25	50	ug/L
67-64-1	Acetone	25	U	9	25	50	ug/L
75-15-0	Carbon Disulfide	5	U	2.3	5	10	ug/L
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.7	2.5	10	ug/L
79-20-9	Methyl Acetate	7.5	U	6.5	7.5	10	ug/L
75-09-2	Methylene Chloride	7.5	U	3.3	7.5	10	ug/L
156-60-5	trans-1,2-Dichloroethene	5	U	2.4	5	10	ug/L
75-34-3	1,1-Dichloroethane	5	U	1.7	5	10	ug/L
110-82-7	Cyclohexane	25	U	12	25	50	ug/L
78-93-3	2-Butanone	25	U	7.1	25	50	ug/L
56-23-5	Carbon Tetrachloride	5	U	2.2	5	10	ug/L
594-20-7	2,2-Dichloropropane	2.5	U	1.1	2.5	10	ug/L
156-59-2	cis-1,2-Dichloroethene	7.5	U	3	7.5	10	ug/L
74-97-5	Bromochloromethane	7.5	U	3.1	7.5	10	ug/L
67-66-3	Chloroform	5	U	1.4	5	10	ug/L
71-55-6	1,1,1-Trichloroethane	2.5	U	1.2	2.5	10	ug/L
108-87-2	Methylcyclohexane	5	U	1.7	5	10	ug/L
563-58-6	1,1-Dichloropropene	5	U	1.5	5	10	ug/L
71-43-2	Benzene	2.5	U	0.99	2.5	10	ug/L
107-06-2	1,2-Dichloroethane	5	U	1.3	5	10	ug/L
79-01-6	Trichloroethene	1100		2.7	7.5	10	ug/L
78-87-5	1,2-Dichloropropane	5	U	1.4	5	10	ug/L
74-95-3	Dibromomethane	5	U	1.4	5	10	ug/L

A-1310



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305I-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010153.D	10		06/08/19 21:00	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	2.5	U	1	2.5	10	ug/L
108-10-1	4-Methyl-2-Pentanone	25	U	8.5	25	50	ug/L
108-88-3	Toluene	2.5	U	1.2	2.5	10	ug/L
10061-02-6	t-1,3-Dichloropropene	2.5	U	1.9	2.5	10	ug/L
10061-01-5	cis-1,3-Dichloropropene	5	U	1.6	5	10	ug/L
79-00-5	1,1,2-Trichloroethane	2.5	U	1.2	2.5	10	ug/L
142-28-9	1,3-Dichloropropane	5	U	1	5	10	ug/L
591-78-6	2-Hexanone	37.5	U	13.6	37.5	50	ug/L
124-48-1	Dibromochloromethane	5	U	1.6	5	10	ug/L
106-93-4	1,2-Dibromoethane	5	U	1.4	5	10	ug/L
127-18-4	Tetrachloroethene	5	U	1.5	5	10	ug/L
108-90-7	Chlorobenzene	2.5	U	0.76	2.5	10	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	2.5	U	1.2	2.5	10	ug/L
67-72-1	Hexachloroethane	5	U	2	5	10	ug/L
100-41-4	Ethyl Benzene	2.5	U	0.83	2.5	10	ug/L
179601-23-1	m/p-Xylenes	5	U	2	5	20	ug/L
95-47-6	o-Xylene	5	U	1.3	5	10	ug/L
100-42-5	Styrene	2.5	U	1.1	2.5	10	ug/L
75-25-2	Bromoform	5	U	1.5	5	10	ug/L
98-82-8	Isopropylbenzene	5	U	1.3	5	10	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	5	U	1.5	5	10	ug/L
96-18-4	1,2,3-Trichloropropane	7.5	U	3.3	7.5	10	ug/L
108-86-1	Bromobenzene	5	U	1.7	5	10	ug/L
103-65-1	n-propylbenzene	2.5	U	1.1	2.5	10	ug/L
95-49-8	2-Chlorotoluene	2.5	U	0.92	2.5	10	ug/L
108-67-8	1,3,5-Trimethylbenzene	5	U	1.4	5	10	ug/L
106-43-4	4-Chlorotoluene	5	U	1.7	5	10	ug/L
98-06-6	tert-Butylbenzene	2.5	U	1.1	2.5	10	ug/L
95-63-6	1,2,4-Trimethylbenzene	2.5	U	1.1	2.5	10	ug/L
135-98-8	sec-Butylbenzene	2.5	U	1.2	2.5	10	ug/L
99-87-6	p-Isopropyltoluene	2.5	U	1.2	2.5	10	ug/L
541-73-1	1,3-Dichlorobenzene	5	U	1.4	5	10	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP03-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010178.D	1		06/10/19 15:22	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP03-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010178.D	1		06/10/19 15:22	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	46.2		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	50.1		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.7		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	261661	5.67				
540-36-3	1,4-Difluorobenzene	397211	6.86				
3114-55-4	Chlorobenzene-d5	350701	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	166038	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305D-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010235.D	1		06/11/19 16:15	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	1		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.76	J	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.99	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	3.1	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.45	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.64	J	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	500	E	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305D-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010235.D	1		06/11/19 16:15	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	1.3		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305D-20190606DL	SDG No.:	K3249
Lab Sample ID:	K3249-11DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010152.D	10		06/08/19 20:36	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	5	UD	2.2	5	10	ug/L
74-87-3	Chloromethane	7.5	UD	3	7.5	10	ug/L
75-01-4	Vinyl Chloride	5	UD	1.6	5	10	ug/L
74-83-9	Bromomethane	37.5	UD	20.5	37.5	50	ug/L
75-00-3	Chloroethane	7.5	UD	3.4	7.5	10	ug/L
75-69-4	Trichlorofluoromethane	5	UD	1.6	5	10	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	5	UD	2.1	5	10	ug/L
75-35-4	1,1-Dichloroethene	5	UD	1.8	5	10	ug/L
107-02-8	Acrolein	200	UD	110	200	250	ug/L
107-13-1	Acrylonitrile	25	UD	7.3	25	50	ug/L
67-64-1	Acetone	25	UD	9	25	50	ug/L
75-15-0	Carbon Disulfide	5	UD	2.3	5	10	ug/L
1634-04-4	Methyl tert-butyl Ether	2.5	UD	0.7	2.5	10	ug/L
79-20-9	Methyl Acetate	7.5	UD	6.5	7.5	10	ug/L
75-09-2	Methylene Chloride	7.5	UD	3.3	7.5	10	ug/L
156-60-5	trans-1,2-Dichloroethene	5	UD	2.4	5	10	ug/L
75-34-3	1,1-Dichloroethane	5	UD	1.7	5	10	ug/L
110-82-7	Cyclohexane	25	UD	12	25	50	ug/L
78-93-3	2-Butanone	25	UD	7.1	25	50	ug/L
56-23-5	Carbon Tetrachloride	5	UD	2.2	5	10	ug/L
594-20-7	2,2-Dichloropropane	2.5	UD	1.1	2.5	10	ug/L
156-59-2	cis-1,2-Dichloroethene	7.5	UD	3	7.5	10	ug/L
74-97-5	Bromochloromethane	7.5	UD	3.1	7.5	10	ug/L
67-66-3	Chloroform	5	UD	1.4	5	10	ug/L
71-55-6	1,1,1-Trichloroethane	2.5	UD	1.2	2.5	10	ug/L
108-87-2	Methylcyclohexane	5	UD	1.7	5	10	ug/L
563-58-6	1,1-Dichloropropene	5	UD	1.5	5	10	ug/L
71-43-2	Benzene	2.5	UD	0.99	2.5	10	ug/L
107-06-2	1,2-Dichloroethane	5	UD	1.3	5	10	ug/L
79-01-6	Trichloroethene	530	D	2.7	7.5	10	ug/L
78-87-5	1,2-Dichloropropane	5	UD	1.4	5	10	ug/L
74-95-3	Dibromomethane	5	UD	1.4	5	10	ug/L

A-1319



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305D-20190606DL	SDG No.:	K3249
Lab Sample ID:	K3249-11DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010152.D	10		06/08/19 20:36	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	2.5	UD	1	2.5	10	ug/L
108-10-1	4-Methyl-2-Pentanone	25	UD	8.5	25	50	ug/L
108-88-3	Toluene	2.5	UD	1.2	2.5	10	ug/L
10061-02-6	t-1,3-Dichloropropene	2.5	UD	1.9	2.5	10	ug/L
10061-01-5	cis-1,3-Dichloropropene	5	UD	1.6	5	10	ug/L
79-00-5	1,1,2-Trichloroethane	2.5	UD	1.2	2.5	10	ug/L
142-28-9	1,3-Dichloropropane	5	UD	1	5	10	ug/L
591-78-6	2-Hexanone	37.5	UD	13.6	37.5	50	ug/L
124-48-1	Dibromochloromethane	5	UD	1.6	5	10	ug/L
106-93-4	1,2-Dibromoethane	5	UD	1.4	5	10	ug/L
127-18-4	Tetrachloroethene	5	UD	1.5	5	10	ug/L
108-90-7	Chlorobenzene	2.5	UD	0.76	2.5	10	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	2.5	UD	1.2	2.5	10	ug/L
67-72-1	Hexachloroethane	5	UD	2	5	10	ug/L
100-41-4	Ethyl Benzene	2.5	UD	0.83	2.5	10	ug/L
179601-23-1	m/p-Xylenes	5	UD	2	5	20	ug/L
95-47-6	o-Xylene	5	UD	1.3	5	10	ug/L
100-42-5	Styrene	2.5	UD	1.1	2.5	10	ug/L
75-25-2	Bromoform	5	UD	1.5	5	10	ug/L
98-82-8	Isopropylbenzene	5	UD	1.3	5	10	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	5	UD	1.5	5	10	ug/L
96-18-4	1,2,3-Trichloropropane	7.5	UD	3.3	7.5	10	ug/L
108-86-1	Bromobenzene	5	UD	1.7	5	10	ug/L
103-65-1	n-propylbenzene	2.5	UD	1.1	2.5	10	ug/L
95-49-8	2-Chlorotoluene	2.5	UD	0.92	2.5	10	ug/L
108-67-8	1,3,5-Trimethylbenzene	5	UD	1.4	5	10	ug/L
106-43-4	4-Chlorotoluene	5	UD	1.7	5	10	ug/L
98-06-6	tert-Butylbenzene	2.5	UD	1.1	2.5	10	ug/L
95-63-6	1,2,4-Trimethylbenzene	2.5	UD	1.1	2.5	10	ug/L
135-98-8	sec-Butylbenzene	2.5	UD	1.2	2.5	10	ug/L
99-87-6	p-Isopropyltoluene	2.5	UD	1.2	2.5	10	ug/L
541-73-1	1,3-Dichlorobenzene	5	UD	1.4	5	10	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW305D-20190606DL	SDG No.:	K3249
Lab Sample ID:	K3249-11DL	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010152.D	10		06/08/19 20:36	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	5	UD	2	5	10	ug/L
104-51-8	n-Butylbenzene	2.5	UD	1.2	2.5	10	ug/L
95-50-1	1,2-Dichlorobenzene	2.5	UD	1.2	2.5	10	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	7.5	UD	5.4	7.5	10	ug/L
120-82-1	1,2,4-Trichlorobenzene	5	UD	2.4	5	10	ug/L
87-68-3	Hexachlorobutadiene	2.5	UD	1.2	2.5	10	ug/L
91-20-3	Naphthalene	7.5	UD	4.8	7.5	10	ug/L
87-61-6	1,2,3-Trichlorobenzene	7.5	UD	2.6	7.5	10	ug/L
74-88-4	Methyl Iodide	25	UD	11.7	25	50	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	37.5	UD	29.7	37.5	50	ug/L
80-62-6	Methyl methacrylate	5	UD	1.1	5	10	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.7		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	49.6		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	51		89 - 112		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.2		85 - 114		98%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	274584	5.66				
540-36-3	1,4-Difluorobenzene	416198	6.85				
3114-55-4	Chlorobenzene-d5	382751	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	182147	12.08				

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1321



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-HN-MW24S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010146.D	1		06/08/19 18:16	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	4.7	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.38	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1322





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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-HN-MW24S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010146.D	1		06/08/19 18:16	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.2		81 - 118		90%	SPK: 50
1868-53-7	Dibromofluoromethane	50.2		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.4		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.7		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	296346	5.66				
540-36-3	1,4-Difluorobenzene	443441	6.86				
3114-55-4	Chlorobenzene-d5	395167	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	183154	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP04-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010149.D	1		06/08/19 19:26	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.6	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.36	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1325



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP04-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010149.D	1		06/08/19 19:26	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.36	J	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP05-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-16	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010148.D	1		06/08/19 19:03	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	1.4		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.86	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.81	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.74	J	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.48	J	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	7.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-DUP05-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-16	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010148.D	1		06/08/19 19:03	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	4.1		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-HN-MW24IR-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010147.D	1		06/08/19 18:40	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	1.3		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.86	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.81	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.78	J	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.43	J	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	7.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BP-HN-MW24IR-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010147.D	1		06/08/19 18:40	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	3.9		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW303S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010150.D	1		06/08/19 19:50	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/06/19
Project:	CTO WE13	Date Received:	06/06/19
Client Sample ID:	BPS1-TT-MW303S-20190606	SDG No.:	K3249
Lab Sample ID:	K3249-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010150.D	1		06/08/19 19:50	VX060819

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3279**

**ATTENTION : David Brayack**



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**Order ID :** K3279

**Project ID :** CTO WE13

**Client :** Tetra Tech NUS, Inc.

### Lab Sample Number

K3279-01  
K3279-02  
K3279-03  
K3279-04  
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### Client Sample Number

BP-TB04-20190607  
BPS1-TT-MW312S-20190607  
BPS1-TT-MW312I-20190607  
BPS1-TT-MW302I2-20190607  
BPS1-TT-MW307S-20190607  
BPS1-TT-MW302D-20190607  
BP-TT-MW203I-20190607  
BPS1-TT-MW303I1-20190607  
BP-EB03-20190607  
BPS1-TT-MW303I1-20190607-F

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :



**APPROVED**

Date: 6/18/2019

By Mildred V Reyes, QAQC Schedule at 4:28 pm, Jun 21, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TB04-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010186.D	1		06/10/19 18:29	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1342



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TB04-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010186.D	1		06/10/19 18:29	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TB04-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010186.D	1		06/10/19 18:29	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.8		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	50.1		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.1		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		85 - 114		89%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	256535	5.67				
540-36-3	1,4-Difluorobenzene	385094	6.86				
3114-55-4	Chlorobenzene-d5	338438	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	155521	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW312S-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010226.D	1		06/11/19 12:45	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.4	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.9	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1345





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW312S-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010226.D	1		06/11/19 12:45	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.7		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	50		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.7		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.6		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	254230	5.66				
540-36-3	1,4-Difluorobenzene	379863	6.86				
3114-55-4	Chlorobenzene-d5	338201	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	159168	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1347



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW312I-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010227.D	1		06/11/19 13:08	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW312I-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010227.D	1		06/11/19 13:08	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.1		81 - 118		90%	SPK: 50
1868-53-7	Dibromofluoromethane	49.3		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.1		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.6		85 - 114		91%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	255543	5.67				
540-36-3	1,4-Difluorobenzene	382963	6.86				
3114-55-4	Chlorobenzene-d5	341473	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	161229	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW302I2-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010228.D	1		06/11/19 13:32	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	3.6		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW302I2-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010228.D	1		06/11/19 13:32	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW307S-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010229.D	1		06/11/19 13:55	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW307S-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010229.D	1		06/11/19 13:55	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW302D-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010230.D	1		06/11/19 14:18	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	3		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW302D-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010230.D	1		06/11/19 14:18	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW302D-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010230.D	1		06/11/19 14:18	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.8		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	49.4		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.5		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.5		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	250922	5.66				
540-36-3	1,4-Difluorobenzene	377005	6.86				
3114-55-4	Chlorobenzene-d5	340993	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	160028	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TT-MW2031-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010231.D	1		06/11/19 14:42	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.4	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TT-MW2031-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010231.D	1		06/11/19 14:42	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-TT-MW2031-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010231.D	1		06/11/19 14:42	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.6		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	49.3		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.4		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.1		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	246765	5.66				
540-36-3	1,4-Difluorobenzene	371038	6.86				
3114-55-4	Chlorobenzene-d5	335383	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	157101	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

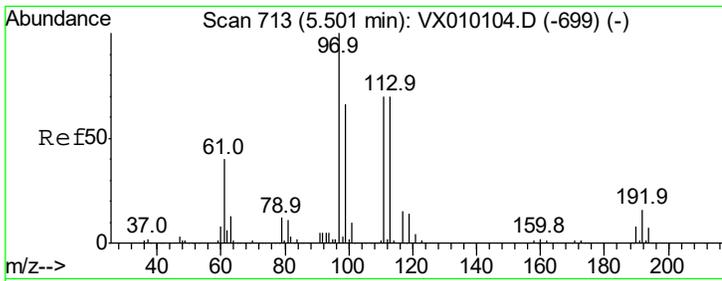
N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

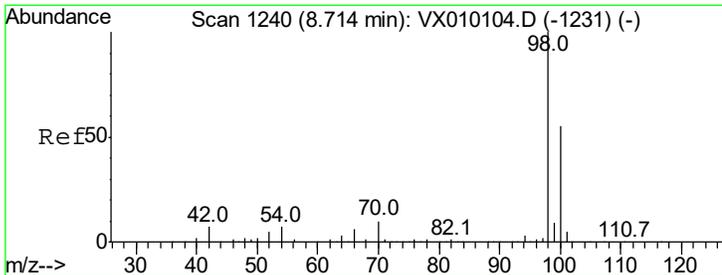
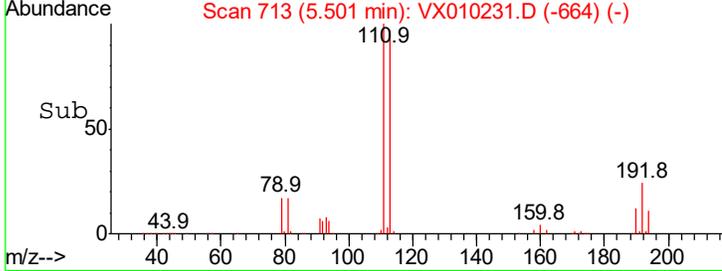
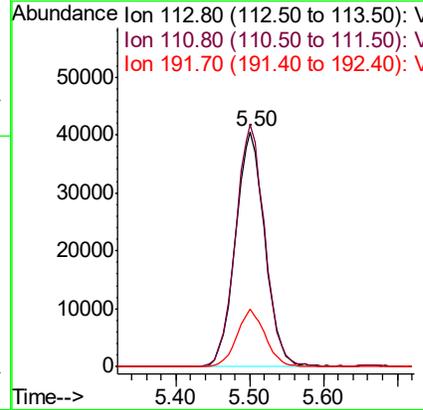
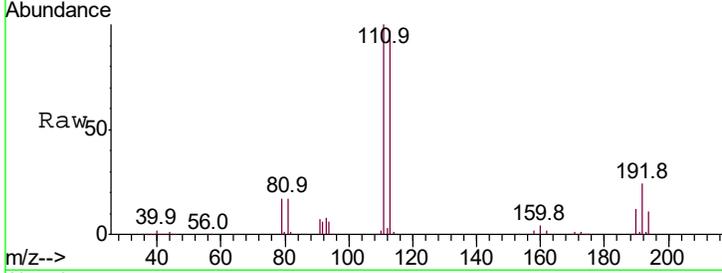
A = Aldol-Condensation Reaction Products



#35  
 Dibromofluoromethane  
 Concen: 49.346 ug/l  
 RT: 5.50 min Scan# 713  
 Delta R.T. -0.00 min  
 Lab File: VX010231.D  
 Acq: 11 Jun 2019 14:42

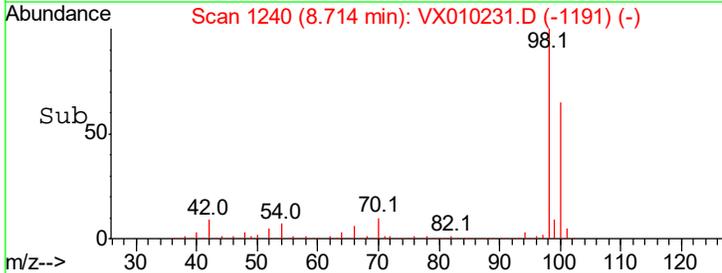
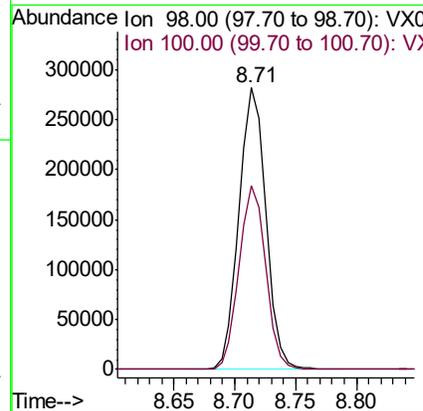
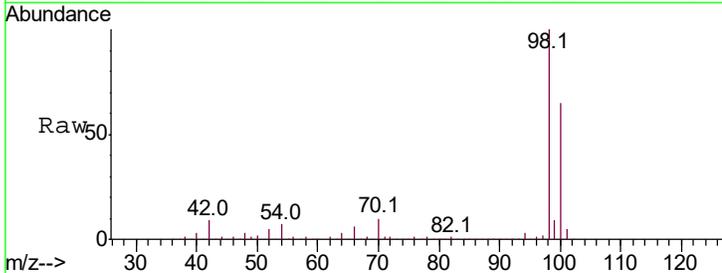
Instrument :  
 MSVOA\_X  
 ClientSampleId :  
 BP-TT-MW2031-20190607

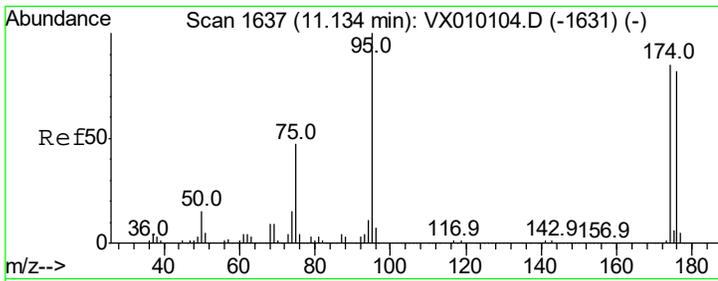
Tgt Ion	Resp	Lower	Upper
113	112936		
111	102.8	82.2	123.2
192	23.5	17.1	25.7



#50  
 Toluene-d8  
 Concen: 50.441 ug/l  
 RT: 8.71 min Scan# 1240  
 Delta R.T. 0.00 min  
 Lab File: VX010231.D  
 Acq: 11 Jun 2019 14:42

Tgt Ion	Resp	Lower	Upper
98	432658		
100	64.7	51.5	77.3

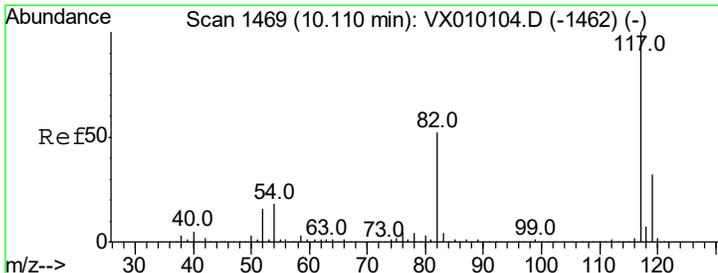
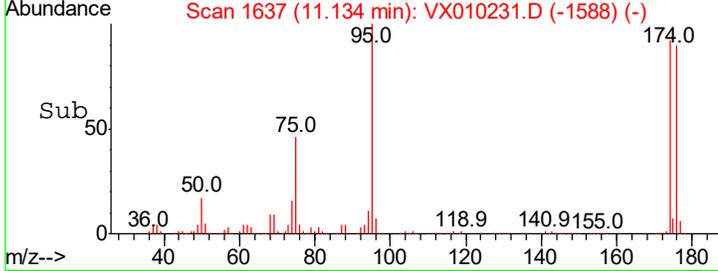
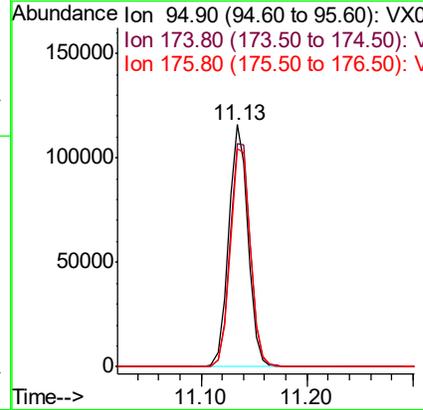
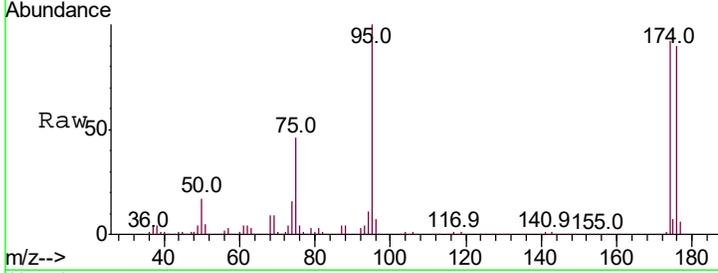




#62  
 4-Bromofluorobenzene  
 Concen: 46.116 ug/l  
 RT: 11.13 min Scan# 1637  
 Delta R.T. 0.00 min  
 Lab File: VX010231.D  
 Acq: 11 Jun 2019 14:42

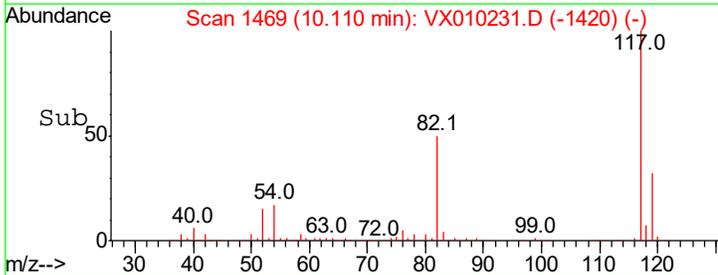
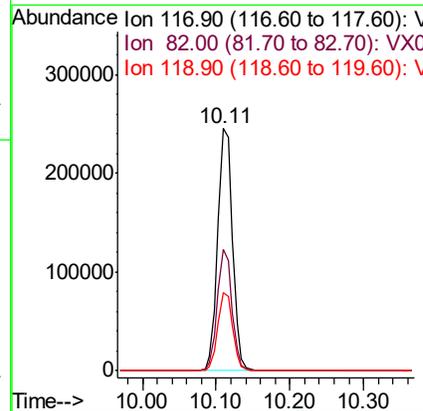
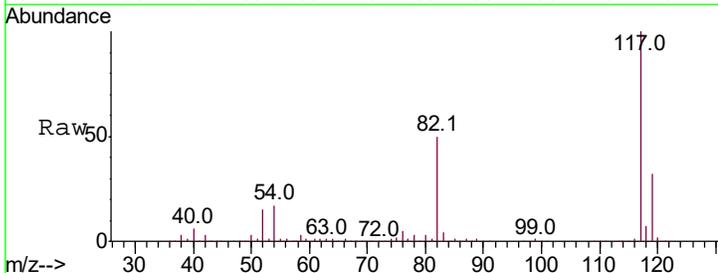
Instrument :  
 MSVOA\_X  
 ClientSampled :  
 BP-TT-MW2031-20190607

Tgt Ion	Resp	Lower	Upper
95	147727		
174	96.8	0.0	160.4
176	93.7	0.0	154.6



#63  
 Chlorobenzene-d5  
 Concen: 50.000 ug/l  
 RT: 10.11 min Scan# 1469  
 Delta R.T. -0.00 min  
 Lab File: VX010231.D  
 Acq: 11 Jun 2019 14:42

Tgt Ion	Resp	Lower	Upper
117	335383		
82	50.3	49.2	73.8
119	32.1	25.2	37.8





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW303I1-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010232.D	1		06/11/19 15:05	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	UQ	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.67	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.6	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.62	J	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.84	J	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	6.4		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW303I1-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010232.D	1		06/11/19 15:05	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	26.2		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BPS1-TT-MW303I1-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010232.D	1		06/11/19 15:05	VX061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	44.7		81 - 118		89%	SPK: 50
1868-53-7	Dibromofluoromethane	50		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	50.7		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.6		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	259723	5.66				
540-36-3	1,4-Difluorobenzene	384233	6.86				
3114-55-4	Chlorobenzene-d5	346319	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	161977	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-EB03-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010206.D	1		06/11/19 03:27	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	8.6		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.59	J	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.99	J	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-EB03-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010206.D	1		06/11/19 03:27	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	3.5		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/07/19
Project:	CTO WE13	Date Received:	06/07/19
Client Sample ID:	BP-EB03-20190607	SDG No.:	K3279
Lab Sample ID:	K3279-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010206.D	1		06/11/19 03:27	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.4		81 - 118		91%	SPK: 50
1868-53-7	Dibromofluoromethane	49.3		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.6		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.1		85 - 114		92%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	266265	5.67				
540-36-3	1,4-Difluorobenzene	402374	6.86				
3114-55-4	Chlorobenzene-d5	357815	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	165472	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3280**

**ATTENTION : David Brayack**



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## Cover Page

**Order ID :** K3280**Project ID :** CTO WE13**Client :** Tetra Tech NUS, Inc.**Lab Sample Number**

K3280-01  
K3280-02  
K3280-03  
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**Client Sample Number**

BP-TB05-20190608  
BP-FW-MW01-20190608  
BP-FW-MW02-20190608  
BP-FW-MW03-20190608  
BP-HN-MW27I-20190608  
BP-HN-MW29IR-20190608  
BP-HN-MW29D-20190608  
BP-MH-SW4001-SOUTH-20190608  
BP-MH-SW4001-SOUTH-20190608MS  
BP-MH-SW4001-SOUTH-20190608MSD  
BP-TT-SW4002-20190608  
BP-TT-SW4003-20190608  
BP-FW-MW01-20190608-F

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**

Date: 6/18/2019

By Mildred V Reyes, QAQC Supervisor at 9:44 am, Jun 24, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

# SAMPLE DATA

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TB05-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010187.D	1		06/10/19 18:53	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1376



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TB05-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010187.D	1		06/10/19 18:53	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TB05-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX010187.D	1		06/10/19 18:53	VX061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	45.8		81 - 118		92%	SPK: 50
1868-53-7	Dibromofluoromethane	49.6		80 - 119		99%	SPK: 50
2037-26-5	Toluene-d8	50.7		89 - 112		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.3		85 - 114		93%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	268867	5.67				
540-36-3	1,4-Difluorobenzene	408678	6.86				
3114-55-4	Chlorobenzene-d5	367277	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	171317	12.08				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1378









284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-FW-MW02-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056171.D	1		06/10/19 15:47	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	1.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-FW-MW03-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056172.D	1		06/10/19 16:12	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	1.1		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-FW-MW03-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056172.D	1		06/10/19 16:12	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	52.3		80 - 119		105%	SPK: 50
2037-26-5	Toluene-d8	53.9		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.6		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	319929	7.66				
540-36-3	1,4-Difluorobenzene	495568	8.59				
3114-55-4	Chlorobenzene-d5	477744	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	151639	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW27I-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056173.D	1		06/10/19 16:38	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW27I-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056173.D	1		06/10/19 16:38	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW27I-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056173.D	1		06/10/19 16:38	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.3		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	51.9		80 - 119		104%	SPK: 50
2037-26-5	Toluene-d8	53.3		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.8		85 - 114		94%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	316905	7.66				
540-36-3	1,4-Difluorobenzene	476338	8.58				
3114-55-4	Chlorobenzene-d5	448383	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	128733	13.35				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW29IR-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056174.D	1		06/10/19 17:03	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW29IR-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-06	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056174.D	1		06/10/19 17:03	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54.6		81 - 118		109%	SPK: 50
1868-53-7	Dibromofluoromethane	53.4		80 - 119		107%	SPK: 50
2037-26-5	Toluene-d8	53.6		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		85 - 114		97%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	313506	7.66				
540-36-3	1,4-Difluorobenzene	481162	8.59				
3114-55-4	Chlorobenzene-d5	458889	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	139235	13.35				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW29D-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056175.D	1		06/10/19 17:28	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	1.1		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW29D-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056175.D	1		06/10/19 17:28	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-HN-MW29D-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056175.D	1		06/10/19 17:28	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54.8		81 - 118		110%	SPK: 50
1868-53-7	Dibromofluoromethane	53.1		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.3		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	291800	7.66				
540-36-3	1,4-Difluorobenzene	450516	8.59				
3114-55-4	Chlorobenzene-d5	432957	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	135339	13.35				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056178.D	1		06/10/19 18:43	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056178.D	1		06/10/19 18:43	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-08	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056178.D	1		06/10/19 18:43	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	53.9		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	52.6		80 - 119		105%	SPK: 50
2037-26-5	Toluene-d8	54.2		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.3		85 - 114		103%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	306443	7.66				
540-36-3	1,4-Difluorobenzene	467291	8.58				
3114-55-4	Chlorobenzene-d5	463205	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	145394	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TT-SW4002-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056176.D	1		06/10/19 17:53	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TT-SW4002-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056176.D	1		06/10/19 17:53	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54.9		81 - 118		110%	SPK: 50
1868-53-7	Dibromofluoromethane	52.7		80 - 119		105%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	48		85 - 114		96%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	305727	7.66				
540-36-3	1,4-Difluorobenzene	470044	8.59				
3114-55-4	Chlorobenzene-d5	449056	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	132563	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TT-SW4003-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056177.D	1		06/10/19 18:18	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1403





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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/08/19
Project:	CTO WE13	Date Received:	06/08/19
Client Sample ID:	BP-TT-SW4003-20190608	SDG No.:	K3280
Lab Sample ID:	K3280-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056177.D	1		06/10/19 18:18	VN061019

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	54.2		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	52.9		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.5		85 - 114		95%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	324148	7.66				
540-36-3	1,4-Difluorobenzene	492881	8.59				
3114-55-4	Chlorobenzene-d5	469409	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	137179	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

**DATA PACKAGE  
VOLATILE ORGANICS**

**PROJECT NAME : CTO WE13**

**TETRA TECH NUS, INC.**

**661 Anderson Drive**

**Pittsburgh, PA - 15220-2745**

**Phone No: 412-921-7090**

**ORDER ID : K3284**

**ATTENTION : David Brayack**



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**Client Sample Number**

BP-TB06-20190609  
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BPS1-TT-MW311S-20190609  
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BP-DUP06-20190609-F  
BPS1-TT-MW306I-20190609  
BPS1-TT-MW303I2-20190610  
BPS1-TT-MW303D-20190610  
BP-TT-MW202S-20190610  
BP-TT-MW202I-20190610  
BP-MH-SW4001-SOUTH-20190610  
BP-TT-SW4002-20190610  
BP-TT-SW4003-20190610  
BP-TT-SW4004-20190610

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

**APPROVED**

Date: 6/26/2019

By Mildred V Reyes, QAQC Supervisor at 3:52 pm, Jun 26, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

SAMPLE  
DATA

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284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TB06-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056212.D	1		06/11/19 10:36	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TB06-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056212.D	1		06/11/19 10:36	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.7		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	53		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	53.9		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.6		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	304334	7.66				
540-36-3	1,4-Difluorobenzene	455212	8.59				
3114-55-4	Chlorobenzene-d5	446788	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	141370	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW308I-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056217.D	1		06/11/19 12:41	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW310S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056218.D	1		06/11/19 13:06	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.55	J	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW310S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-03	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056218.D	1		06/11/19 13:06	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.8		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	53.4		80 - 119		107%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.5		85 - 114		95%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	307430	7.66				
540-36-3	1,4-Difluorobenzene	462155	8.59				
3114-55-4	Chlorobenzene-d5	445292	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	130130	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW311S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056219.D	1		06/11/19 13:31	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1420



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW311S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056219.D	1		06/11/19 13:31	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-AOC22-MW10-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056230.D	1		06/11/19 18:08	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	3.1	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1423







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW306D-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-09	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056220.D	1		06/11/19 13:57	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.39	J	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.61	J	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	4.1		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1426







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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-AOC22-MW03-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056221.D	1		06/11/19 14:22	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	3.2	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

A-1429



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-AOC22-MW03-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056221.D	1		06/11/19 14:22	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-AOC22-MW03-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056221.D	1		06/11/19 14:22	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.9		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	54.4		80 - 119		109%	SPK: 50
2037-26-5	Toluene-d8	55		89 - 112		110%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.3		85 - 114		103%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	304001	7.66				
540-36-3	1,4-Difluorobenzene	447987	8.58				
3114-55-4	Chlorobenzene-d5	444283	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	148170	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW308S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056222.D	1		06/11/19 14:47	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW308S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056222.D	1		06/11/19 14:47	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW308S-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056222.D	1		06/11/19 14:47	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.1		81 - 118		104%	SPK: 50
1868-53-7	Dibromofluoromethane	53.4		80 - 119		107%	SPK: 50
2037-26-5	Toluene-d8	54.8		89 - 112		110%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.3		85 - 114		101%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	302383	7.66				
540-36-3	1,4-Difluorobenzene	447267	8.58				
3114-55-4	Chlorobenzene-d5	442642	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	138865	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-DUP06-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056223.D	1		06/11/19 15:12	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-DUP06-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056223.D	1		06/11/19 15:12	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.4		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	53.4		80 - 119		107%	SPK: 50
2037-26-5	Toluene-d8	54.4		89 - 112		109%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		85 - 114		97%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	308067	7.66				
540-36-3	1,4-Difluorobenzene	452594	8.59				
3114-55-4	Chlorobenzene-d5	440839	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	129850	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW306I-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056224.D	1		06/11/19 15:37	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.92	J	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/09/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW306I-20190609	SDG No.:	K3284
Lab Sample ID:	K3284-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056224.D	1		06/11/19 15:37	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.5		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	53.2		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.6		85 - 114		99%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	303038	7.66				
540-36-3	1,4-Difluorobenzene	454936	8.58				
3114-55-4	Chlorobenzene-d5	446444	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	135855	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW303I2-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056225.D	1		06/11/19 16:02	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	2.3		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW303I2-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056225.D	1		06/11/19 16:02	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BPS1-TT-MW303I2-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056225.D	1		06/11/19 16:02	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.7		81 - 118		105%	SPK: 50
1868-53-7	Dibromofluoromethane	54.1		80 - 119		108%	SPK: 50
2037-26-5	Toluene-d8	54.3		89 - 112		109%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.5		85 - 114		99%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	301235	7.66				
540-36-3	1,4-Difluorobenzene	447599	8.58				
3114-55-4	Chlorobenzene-d5	436755	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	135454	13.35				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products









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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-MW202S-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-17	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056214.D	1		06/11/19 11:26	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	5	ug/L
74-87-3	Chloromethane	0.5	U	0.3	0.5	5	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	5	ug/L
74-83-9	Bromomethane	0.5	U	2.1	0.5	5	ug/L
75-00-3	Chloroethane	0.5	U	0.34	0.5	5	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	5	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	5	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	5	ug/L
107-02-8	Acrolein	5	U	0.5	5	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	25	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	25	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	5	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.07	0.5	5	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	5	ug/L
75-09-2	Methylene Chloride	0.5	U	0.33	0.5	5	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	5	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	5	ug/L
110-82-7	Cyclohexane	0.5	U	1.2	0.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	25	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	5	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.11	0.5	5	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.3	0.5	5	ug/L
74-97-5	Bromochloromethane	0.5	U	0.31	0.5	5	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	5	ug/L
71-55-6	1,1,1-Trichloroethane	0.75	U	0.12	0.75	5	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	5	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	5	ug/L
71-43-2	Benzene	0.5	U	0.1	0.5	5	ug/L
107-06-2	1,2-Dichloroethane	0.75	U	0.13	0.75	5	ug/L
79-01-6	Trichloroethene	0.5	U	0.27	0.5	5	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	5	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	5	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-MW202S-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-17	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056214.D	1		06/11/19 11:26	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	5	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	5	ug/L
104-51-8	n-Butylbenzene	0.5	U	0.12	0.5	5	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.12	0.5	5	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	2	U	0.54	2	5	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	5	ug/L
87-68-3	Hexachlorobutadiene	0.5	U	0.12	0.5	5	ug/L
91-20-3	Naphthalene	5		0.48	0.5	5	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.5	U	0.26	0.5	5	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	53.2		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	53.3		80 - 119		107%	SPK: 50
2037-26-5	Toluene-d8	54.1		89 - 112		108%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.8		85 - 114		98%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	307168	7.66				
540-36-3	1,4-Difluorobenzene	458141	8.59				
3114-55-4	Chlorobenzene-d5	444189	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	135074	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-MW2021-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056215.D	1		06/11/19 11:51	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	5	ug/L
74-87-3	Chloromethane	0.5	U	0.3	0.5	5	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	5	ug/L
74-83-9	Bromomethane	0.5	U	2.1	0.5	5	ug/L
75-00-3	Chloroethane	0.5	U	0.34	0.5	5	ug/L
75-69-4	Trichlorofluoromethane	3.3	J	0.16	0.5	5	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	5	ug/L
75-35-4	1,1-Dichloroethene	2.1	J	0.18	0.5	5	ug/L
107-02-8	Acrolein	5	U	0.5	5	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	25	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	25	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	5	ug/L
1634-04-4	Methyl tert-butyl Ether	1.7	J	0.07	0.5	5	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	5	ug/L
75-09-2	Methylene Chloride	0.5	U	0.33	0.5	5	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	5	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	5	ug/L
110-82-7	Cyclohexane	0.5	U	1.2	0.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	25	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	5	ug/L
594-20-7	2,2-Dichloropropane	0.5	U	0.11	0.5	5	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.3	0.5	5	ug/L
74-97-5	Bromochloromethane	0.5	U	0.31	0.5	5	ug/L
67-66-3	Chloroform	0.79	J	0.14	0.5	5	ug/L
71-55-6	1,1,1-Trichloroethane	1.3	J	0.12	0.75	5	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	5	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	5	ug/L
71-43-2	Benzene	0.5	U	0.1	0.5	5	ug/L
107-06-2	1,2-Dichloroethane	0.75	U	0.13	0.75	5	ug/L
79-01-6	Trichloroethene	2.7	J	0.27	0.5	5	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	5	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	5	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-MW2021-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056215.D	1		06/11/19 11:51	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.5	U	0.1	0.5	5	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	25	ug/L
80-62-6	Methyl methacrylate	0.75	U	0.11	0.75	5	ug/L
108-88-3	Toluene	0.5	U	0.12	0.5	5	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.19	0.5	5	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	5	ug/L
79-00-5	1,1,2-Trichloroethane	0.5	U	0.12	0.5	5	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	5	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	25	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	5	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	5	ug/L
127-18-4	Tetrachloroethene	2.9	J	0.15	0.5	5	ug/L
108-90-7	Chlorobenzene	0.5	U	0.08	0.5	5	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.5	U	0.12	0.5	5	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	5	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.08	0.5	5	ug/L
179601-23-1	m/p-Xylenes	1	U	0.2	1	10	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	5	ug/L
100-42-5	Styrene	0.5	U	0.11	0.5	5	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	5	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	5	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	5	ug/L
96-18-4	1,2,3-Trichloropropane	0.5	U	0.33	0.5	5	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	5	ug/L
103-65-1	n-propylbenzene	0.5	U	0.11	0.5	5	ug/L
95-49-8	2-Chlorotoluene	0.5	U	0.09	0.5	5	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	5	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	5	ug/L
98-06-6	tert-Butylbenzene	0.5	U	0.11	0.5	5	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.5	U	0.11	0.5	5	ug/L
135-98-8	sec-Butylbenzene	0.5	U	0.12	0.5	5	ug/L
99-87-6	p-Isopropyltoluene	0.5	U	0.12	0.5	5	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-MW2021-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-18	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056215.D	1		06/11/19 11:51	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	5	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	5	ug/L
104-51-8	n-Butylbenzene	0.5	U	0.12	0.5	5	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.12	0.5	5	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	2	U	0.54	2	5	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	5	ug/L
87-68-3	Hexachlorobutadiene	0.5	U	0.12	0.5	5	ug/L
91-20-3	Naphthalene	0.5	U	0.48	0.5	5	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.5	U	0.26	0.5	5	ug/L
74-88-4	Methyl Iodide	0.5	U	0.2	0.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	53.8		81 - 118		108%	SPK: 50
1868-53-7	Dibromofluoromethane	53.8		80 - 119		108%	SPK: 50
2037-26-5	Toluene-d8	54.7		89 - 112		109%	SPK: 50
460-00-4	4-Bromofluorobenzene	52.1		85 - 114		104%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	316569	7.66				
540-36-3	1,4-Difluorobenzene	479132	8.58				
3114-55-4	Chlorobenzene-d5	478114	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	157507	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056227.D	1		06/11/19 16:52	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-MH-SW4001-SOUTH-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-19	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056227.D	1		06/11/19 16:52	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L





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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4002-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056228.D	1		06/11/19 17:17	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	5.9		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4002-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056228.D	1		06/11/19 17:17	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4002-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-20	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056228.D	1		06/11/19 17:17	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	52.9		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	53.1		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	53.7		89 - 112		107%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		85 - 114		97%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	284537	7.66				
540-36-3	1,4-Difluorobenzene	423156	8.59				
3114-55-4	Chlorobenzene-d5	413170	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	124224	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

A-1458



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4003-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-21	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056229.D	1		06/11/19 17:43	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
<b>TARGETS</b>							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
107-02-8	Acrolein	20	U	10.7	20	25	ug/L
107-13-1	Acrylonitrile	2.5	U	0.73	2.5	5	ug/L
67-64-1	Acetone	6.4		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
594-20-7	2,2-Dichloropropane	0.25	U	0.11	0.25	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
563-58-6	1,1-Dichloropropene	0.5	U	0.15	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
74-95-3	Dibromomethane	0.5	U	0.14	0.5	1	ug/L

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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4003-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-21	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056229.D	1		06/11/19 17:43	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
142-28-9	1,3-Dichloropropane	0.5	U	0.1	0.5	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
630-20-6	1,1,1,2-Tetrachloroethane	0.25	U	0.12	0.25	1	ug/L
67-72-1	Hexachloroethane	0.5	U	0.2	0.5	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
96-18-4	1,2,3-Trichloropropane	0.75	U	0.33	0.75	1	ug/L
108-86-1	Bromobenzene	0.5	U	0.17	0.5	1	ug/L
103-65-1	n-propylbenzene	0.25	U	0.11	0.25	1	ug/L
95-49-8	2-Chlorotoluene	0.25	U	0.09	0.25	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.14	0.5	1	ug/L
106-43-4	4-Chlorotoluene	0.5	U	0.17	0.5	1	ug/L
98-06-6	tert-Butylbenzene	0.25	U	0.11	0.25	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.25	U	0.11	0.25	1	ug/L
135-98-8	sec-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
99-87-6	p-Isopropyltoluene	0.25	U	0.12	0.25	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L



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### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/10/19
Project:	CTO WE13	Date Received:	06/10/19
Client Sample ID:	BP-TT-SW4003-20190610	SDG No.:	K3284
Lab Sample ID:	K3284-21	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group4
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN056229.D	1		06/11/19 17:43	VN061119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
104-51-8	n-Butylbenzene	0.25	U	0.12	0.25	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-68-3	Hexachlorobutadiene	0.25	U	0.12	0.25	1	ug/L
91-20-3	Naphthalene	0.75	U	0.48	0.75	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
74-88-4	Methyl Iodide	2.5	U	1.2	2.5	5	ug/L
110-57-6	trans-1,4-Dichloro-2-butene	3.8	U	3	3.8	5	ug/L
80-62-6	Methyl methacrylate	0.5	U	0.11	0.5	1	ug/L
<b>SURROGATES</b>							
17060-07-0	1,2-Dichloroethane-d4	53		81 - 118		106%	SPK: 50
1868-53-7	Dibromofluoromethane	53.1		80 - 119		106%	SPK: 50
2037-26-5	Toluene-d8	54.7		89 - 112		109%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.6		85 - 114		103%	SPK: 50
<b>INTERNAL STANDARDS</b>							
363-72-4	Pentafluorobenzene	314885	7.66				
540-36-3	1,4-Difluorobenzene	472885	8.59				
3114-55-4	Chlorobenzene-d5	468745	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	149302	13.34				
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>							
75-43-4	Dichlorofluoromethane	1	U			4.47	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

TETRA TECH  
VALIDATED ANALYTICAL RESULTS  
SEPTEMBER 2019  
NWIRP BETHPAGE, NY  
PAGE 1 OF 16

LOCATION SAMPLE ID SAMPLE DATE DUPLICATE SAMPLE CODE MATRIX SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	BPS1-TT-MW201D BP-MW201D-20190912  NORMAL GW K4896	BPS1-TT-MW201D1 BP-MW201D1-20190912  NORMAL GW K4896	BPS1-TT-MW202D BP-MW202D-20190909  NORMAL GW K4858	BPS1-TT-MW202D1 BP-MW202D1-20190909  NORMAL GW K4858
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	7.7	0.75 U	1.1 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.39 J	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	4.2 J	0.5 U	7	3.4 J
1,1-DICHLOROETHENE	5	68.1	0.5 U	2.8 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	2.1 J	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	4.2 J	0.5 U	0.96 J	1.7 J
CHLOROMETHANE	5	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.7 J	0.5 U	15.2	35.2
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	4.7 J
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	150	1.2 J	34.5	40.9
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	110	4.8 J	100	25.5
TRICHLOROFLUOROMETHANE	5	180	0.5 U	3.8 J	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	6	0.1 U	0.66	0.25

TETRA TECH  
VALIDATED ANALYTICAL RESULTS  
SEPTEMBER 2019  
NWIRP BETHPAGE, NY  
PAGE 2 OF 16

LOCATION SAMPLE ID SAMPLE DATE DUPLICATE SAMPLE CODE MATRIX SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE103D1 RE103D1-20190909 20190909  ORIG GW K4858	RE103D1 RE103D1-20190909-D 20190909 RE103D1-20190909 DUP GW K4858	RE103D2 RE103D2-20190909 20190909  NORMAL GW K4858	RE103D3 RE103D3-20190909 20190909  NORMAL GW K4858
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.94 J	0.98 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	12.7	11.3	2.8 J	5
1,1-DICHLOROETHANE	5	1.3 J	1.2 J	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	7.9	7.4	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	1.1 J	0.92 J	0.81 J	0.62 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	4.2 J	3.9 J	0.84 J	1.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	10	9.4	0.5 U	1.3 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	1400	1300	700	680
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	6.1	6.5	0.62	0.35

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	1.2 J	0.5 U	0.5 U	5.8
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.48 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 UJ
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	1 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.47 J	11	0.5 U	1.4 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	3.7 J	0.5 U	0.5 U	0.47 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	59.3	64.6	0.5 U	120
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	3.4	0.36	0.1 U	3.7

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	18.8 U	0.75 U	18.8 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	12.5 U	0.5 U	12.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	19.8 J	0.67 J	12.5 U	0.64 J
1,1-DICHLOROETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
1,1-DICHLOROETHENE	5	12.5 U	0.5 U	12.5 U	0.5 U
1,2-DICHLOROBENZENE	3	12.5 U	0.5 U	12.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	18.8 U	0.75 U	18.8 U	0.75 U
1,2-DICHLOROPROPANE	1	12.5 U	0.5 U	12.5 U	0.5 U
1,3-DICHLOROBENZENE	3	12.5 U	0.5 U	12.5 U	0.5 U
1,4-DICHLOROBENZENE	3	12.5 U	0.5 U	12.5 U	0.5 U
2-BUTANONE	50	62.5 U	2.5 U	62.5 U	2.5 U
2-HEXANONE	50	93.8 UJ	3.8 U	93.8 UJ	3.8 U
4-METHYL-2-PENTANONE	NL	62.5 U	2.5 U	62.5 U	2.5 U
ACETONE	50	62.5 U	2.5 U	62.5 U	2.5 U
BENZENE	1	12.5 U	0.5 U	12.5 U	0.5 U
BROMODICHLOROMETHANE	50	12.5 U	0.5 U	12.5 U	0.5 U
BROMOFORM	50	12.5 U	0.5 U	12.5 U	0.5 U
BROMOMETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
CARBON DISULFIDE	60	12.5 UJ	0.5 UJ	12.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	12.5 U	0.5 U	12.5 U	0.5 U
CHLOROBENZENE	5	12.5 U	0.5 U	12.5 U	0.5 U
CHLORODIBROMOMETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
CHLOROETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
CHLOROFORM	7	12.5 U	0.5 U	6.2 J	0.5 U
CHLOROMETHANE	5	12.5 U	0.56 J	12.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	12.5 U	0.5 U	12.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	12.5 U	0.5 U	12.5 U	0.5 U
ETHYLBENZENE	5	12.5 U	0.5 U	12.5 U	0.5 U
ISOPROPYLBENZENE	5	12.5 U	0.5 U	12.5 U	0.5 U
M+P-XYLENES	10	25 U	1 U	25 U	1 U
METHYL CYCLOHEXANE	NL	12.5 U	0.5 U	12.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	12.5 U	0.5 U	12.5 U	0.5 U
METHYLENE CHLORIDE	5	12.5 U	0.5 U	12.5 U	0.5 U
O-XYLENE	5	12.5 U	0.5 U	12.5 U	0.5 U
STYRENE	5	12.5 U	0.5 U	12.5 U	0.5 U
TETRACHLOROETHENE	5	12.5 U	2.4 J	12.5 U	0.87 J
TOLUENE	5	12.5 U	0.5 U	12.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	12.5 U	0.5 U	12.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	12.5 U	0.5 U	12.5 U	0.5 U
TRICHLOROETHENE	5	2000	39	3200	28.4
TRICHLOROFLUOROMETHANE	5	12.5 U	0.5 U	12.5 U	0.5 U
VINYL CHLORIDE	2	12.5 U	0.5 U	12.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	2.8	3.4	3.2	2.5

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.42 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.62 J	1.5 J	2.7 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 UJ	3.8 U	3.8 U	3.8 UJ
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	0.42 J	0.71 J	1.1 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	2 J
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.42 J	0.63 J	0.5 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.94 J	0.63 J	1.2 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	28.2	50.8	85.8	78.4
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	2.4	3	3.5	0.09 J

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.87 J	0.52 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	21	21.6
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	14.4	4.2 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 UJ	3.8 UJ	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	25 U	25 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.62 J	0.67 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.61 J	0.57 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	3.6 J	3.1 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	0.5 U	5.7	7.1
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	0.42 J	0.5 U	1000	760
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	27 J	19 J
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.1 U	0.1 U	7.1	5.2

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LOCATION SAMPLE ID SAMPLE DATE DUPLICATE SAMPLE CODE MATRIX SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE120D3 RE120D3-20190917 20190917  NORMAL GW K4975	RE122D1 RE122D1-20190909 20190909  NORMAL GW K4858	RE122D2 RE122D2-20190909 20190909  NORMAL GW K4858	RE122D3 RE122D3-20190909 20190909  NORMAL GW K4858
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	15 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	10 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	10 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	4.8 J	4.8 J	43.3 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	10 U	0.5 U
1,1-DICHLOROETHENE	5	0.64 J	1.5 J	10 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	10 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	15 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	10 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	10 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	10 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	50 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	75 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	50 U	2.5 U
ACETONE	50	2.5 U	2.5 U	50 U	2.5 U
BENZENE	1	0.5 U	0.5 U	10 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	10 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	10 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	10 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 U	10 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.94 J	10 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	10 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	10 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	10 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	10 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	10 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.82 J	2.9 J	10 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	10 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	10 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	10 U	0.5 U
M+P-XYLENES	10	1 U	1 U	20 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	10 UJ	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	10 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	10 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	10 U	0.5 U
STYRENE	5	0.5 U	0.5 U	10 U	0.5 U
TETRACHLOROETHENE	5	1.2 J	4.4 J	10 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	10 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	10 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	10 U	0.5 U
TRICHLOROETHENE	5	180	750	6300	14.4
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	10 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	10 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	3.4 J	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.83	3.6	4.9	0.1 U

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U	19.9
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	2.9 J
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	5.2
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	1.2 J
CHLOROMETHANE	5	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	7.6
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.65 J
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	2 J	0.5 U	19.3
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	12.1	2.4 J	0.5 U	400
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	1.9 J	0.45	0.1 U	6.7

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.77 J	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.63 J	0.5 U	0.5 U	0.35 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	31.1	80.7	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	1.3 J	0.5 U	0.5 U	1.3 J
1,1-DICHLOROETHENE	5	11.6	2 J	0.5 U	0.66 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	1 J	0.5 U	0.5 U	0.9 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.71 J	0.5 U	0.5 U	0.22 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 UJ	0.5 UJ
CIS-1,2-DICHLOROETHENE	5	7.7	3.2 J	0.5 U	2.2 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	10.5	9.8	1.7 J	1.4 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	440	270	40.7	530
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	7.2	2.6	2.7	3.2

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.45 J
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	6.7	230
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	1.8 J	4.4 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	25 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	2.6 J	0.5 U
CHLOROMETHANE	5	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	7.6	8.6
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.77 J	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.4 J	2.3 J	26.2	22.6
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	3 J	3.2 J	270	140
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.53	0.53	7.6	7.8

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	300	150	6.9	3.7 J
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	1 J	0.5 U
1,1-DICHLOROETHENE	5	3.7 J	2.4 J	2 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 UJ	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	2.1 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.3 J	1.1 J	2.5 J	0.49 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
M+P-XYLENES	10	1 U	1 U	1 UJ	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	1.1 J	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
TETRACHLOROETHENE	5	11.5 J	7.9 J	5.1 J-	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	31.1	30.1	140	2.6 J
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	--	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	1.4	1.3	2.5	4.3

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.49 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.57 J	1.6 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	7.3	8.8	13.9	45.2
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	2.7 J
1,1-DICHLOROETHENE	5	1.3 J	1.3 J	3.5 J	16.8
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 UJ	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 UJ	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 UJ	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	1 J	2.1 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.36 J	1 J	1.5 J
CHLOROMETHANE	5	0.5 U	0.5 UJ	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.6 J	3.1 J	2 J	5.3
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.82 J	0.5 U	0.5 UJ	0.5 U
ISOPROPYLBENZENE	5	0.26 J	0.5 U	0.5 UJ	0.5 U
M+P-XYLENES	10	1.2 J	1 U	1 UJ	1 U
METHYL CYCLOHEXANE	NL	0.82 J	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 UJ	0.5 U
TETRACHLOROETHENE	5	2.2 J	7.1	0.5 UJ	6.9
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	110	270	160	2600
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	3.2	6.3	5.5	3.9

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.75 J	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	21.1	0.5 U	16.4	17.6
1,1-DICHLOROETHANE	5	1.1 J	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	5.2	0.5 U	0.28 J	0.34 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	2 J	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	2.3 J	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 UJ	0.5 UJ	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.9 J	0.5 U	2.1 J	2.1 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.4 J	1.1 J	17.3	18.1
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	1100	7.4	140	140
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	1	0.45	6.1	6.6

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	370	180	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	2.1 J	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	2.6 J
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	25 U	25 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	1.4 J	0.5 U
CHLOROMETHANE	5	0.35 J	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.4 J	0.84 J	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	40	10.8	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	130	21.7	0.5 U	0.5 U
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	6.2	1.3	0.19	0.09 J

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.49 J
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.77 J	0.65 J	0.56 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	8.2	3.2 J	1.6 J	18.5
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	1.3 J	2.3 J	1.5 J	7.8
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	4.6 J	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 UJ	3.8 UJ	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	0.99 J	1.5 J	1.6 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.6 J	0.43 J	0.86 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	5.4	1.2 J	1.4 J	2.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	31.7	0.5 U	0.5 U	0.41 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	22	130	140	240
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>8270 (UG/L)</b>					
1,4-DIOXANE	0.46	0.14	0.97	0.57	4.7

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<b>VOLATILES (UG/L)</b>			
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.88 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	16	31.9
1,1-DICHLOROETHANE	5	0.5 U	1.4 J
1,1-DICHLOROETHENE	5	3.7 J	8.5
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U
ACETONE	50	25 U	2.5 U
BENZENE	1	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 UJ	0.5 UJ
CARBON TETRACHLORIDE	5	0.5 U	1.5 J
CHLOROBENZENE	5	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U
CHLOROFORM	7	0.51 J	0.93 J
CHLOROMETHANE	5	0.5 U	1 J
CIS-1,2-DICHLOROETHENE	5	3.8 J	3.8 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	3.8 J
TOLUENE	5	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U
TRICHLOROETHENE	5	100	1200
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.43 J
<b>522 (UG/L)</b>			
1,4-DIOXANE	NL	--	--
<b>8270 (UG/L)</b>			
1,4-DIOXANE	0.46	4.4	2.1

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	6	5	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.37 J	0.41 J	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	2.9 J	2.2 J	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	3.3 J	3.1 J	1.9 J
1,1-DICHLOROETHENE	5	0.5 U	38.4	30.5	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.63 J
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.7 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	4 J	3.6 J	1.1 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	2.4 J	2.3 J	19.2
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	3 J
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.7 J	69.5	56.5	13.7
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	3.6 J	70.5	61.2	12.5
TRICHLOROFUOROMETHANE	5	0.5 U	130	98.5	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.08 J	5.1	5.7	0.35
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	2.8 J	0.91 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	2.3 J	16.4	2.6 J	1.6 J
1,1-DICHLOROETHENE	5	1.3 J	5.8	1.2 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.84 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	7.4	0.92 J	3.2 J	0.83 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	11.3	0.92 J	0.67 J	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	41.3	5.6	13.7	0.5 U
TRICHLOROFUOROMETHANE	5	2.4 J	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.55 J	1.5	0.29	0.46
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.54 J	0.28 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	5.4	2.4 J	2.4 J	1.2 J
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	3.2 J	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.1 J	2.9 J	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.9 J	0.69 J	0.65 J	0.42 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.6 J	0.72 J	0.75 J	2.6 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	630	410	380	44.6
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	5.8	0.56	0.45	3.7
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.97 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	5.1	13
1,1-DICHLOROETHANE	5	0.52 J	0.5 U	0.5 U	1 J
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.68 J	4.2 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.78 J	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	3.9 J	2.5 J	2.6 J	1.9 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	2.5 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	2 J	0.5 U	0.5 U	1.5 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	16.7	0.5 U	1.2 J	2.4 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	0.5 U	0.5 U	1.5 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	88.7	0.5 U	80.5	1200
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.92	0.1 U	4.1	2.6
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.58 J	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	1.3 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	4.4 J	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	3.4 J	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	4.9 J	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.3 J	2.5 U	3.1 J	3.6 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	1.1 J	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	2.5 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	5.2	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.3 J	2.4 J	0.88 J	0.93 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	26.1	2300	23.1	24.2
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	3.4	3.4	3	2.8
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.32 J	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.37 J	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	1.3 J	1.9 J	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.9 J	2.4 J	3.2 J	2.5 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.64 J	0.99 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.47 J	0.52 J	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 J	0.73 J	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	37.1	61.2	57.2	0.72 J
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	2.9	3.3	0.15	0.1 U
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.65 J	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.79 J	0.53 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	16.3	19.1	4.1 J	2.4 J
1,1-DICHLOROETHANE	5	1.3 J	0.69 J	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	9.3	2.7 J	1 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 J	1.9 J	2.5 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.71 J	0.5 U	0.31 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	3.3 J	3.3 J	0.71 J	1.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.3 J	5.1	0.79 J	1.9 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	770	620	150	360
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	6.6 J	4.9 J	1.2 J	3.8
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	22	16	3.3	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	27 J	20 J	3.7 J	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	2.3 J	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	6.8	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	1.1 J	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	4.2 J	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.69 J	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	4.7 J	2.5 J	4.7 J	3.8 J
BENZENE	1	0.32 J	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.38 J	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	1.8 J	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	2.1 J	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	3.8 J	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.3 J	0.5 U	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.31 J	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	2300	8.4	9	11.7
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	--	0.11 U	1.9	1.8
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.4 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	10.7	17.2
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	1.5 J	0.72 J
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	2.1 J	5.5
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.9 J	2.9 J	2.6 J	2.5 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.54 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.72 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	4.1 J	4.1 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.39 J	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	1.2 J	0.5 U	8.9 J	4.3 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	1.7 J	0.5 U	210	260
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.49	0.1 U	6.8	3.6
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.45 J	0.5 U	0.35 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	53.1 J	19.1 J	0.5 U	0.5 U
1,1-DICHLOROETHANE	5	0.5 U	0.89 J	0.5 U	1 J
1,1-DICHLOROETHENE	5	1.1 J	5.3	0.5 U	0.98 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.9 J	4 J	2.5 U	3.1 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.56 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2 J	4.2 J	0.5 U	1.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	5.8 J	4.5 J	1.5 J	1 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	160 J	260 J	26.5	480
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.96 J	7.8 J	3.1	3.5
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	3.3 J	83.9	120
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	2 J	1.9 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.2 J	2.2 J	2.6 J	2.1 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	1.6 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	4.4 J	4.6 J	0.81 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.52 J	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.5 J	14.6 J	14.2 J	6.3 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	3 J	190	100	16.9
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.7	7.8	8.1	1.5
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	5.8	5.7	3.7 J	3.2 J
1,1-DICHLOROETHANE	5	0.5 U	0.85 J	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	1.3 J	1.4 J	0.46 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	2 J	2.1 J	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.1 J	2.1 J	0.81 J	0.71 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	1.3 J	1.3 J	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.9 J	2.7 J	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	110	110	16.9	37.6
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	2.8	2.5 J	4.5	5 J
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	1.4 J	0.56 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	6.7	10.5	30.4	8.3
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	2 J	0.94 J
1,1-DICHLOROETHENE	5	1.5 J	2.3 J	10.6	3.4 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.9 J	1.5 J	1.2 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	1.3 J	1.9 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.6 J	1.4 J	4 J	2 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	4.4 J	0.5 U	3.2 J	1.3 J
TOLUENE	5	6.2	0.53 J	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	200	110	1400	730
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	5.8 J	3.7 J	4.2 J	1.2
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	12.6	570	62.7
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.51 J	3.8 J	0.5 U
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	1.6 J	2.9 J	3 J	3.2 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	1.7 J	4.2 J	0.84 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.89 J	10.7	94.4	6.9
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	4.7 J	97.8	180	15.5
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.44 J	6.9	8.4	1.4
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION NSAMPLE SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE135D1 RE135D1-20191210 12/10/2019 NM  K6252	RE135D2 RE135D2-20191210 12/10/2019 NM  K6252	RE135D3 RE135D3-20191210 12/10/2019 NM  K6252	RE139D1 RE139D1-20191206 12/06/2019 NM  K6251
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.84 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	0.5 U	0.5 U	4 J	3.2 J
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	2.2 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	3.1 J	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	4.5 J	1.5 J	2.5 U	2.2 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.5 U	0.5 U	0.5 U	0.82 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	1.1 J	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	5	1.3 J	1.2 J	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	3.2 J	1.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	0.5 U	9.9	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	1.1 J	0.56 J	11.9	110
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	0.29 J	0.14 J	0.22 J	1.2
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION NSAMPLE SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE139D1 DUP04-20191206 12/06/2019 NM RE139D1-20191206 K6251	RE139D2 RE139D2-20191206 12/06/2019 NM K6251	TT101D1 TT101D1-20191205 12/05/2019 NM K6185	TT101D TT101D-20191205 12/05/2019 NM K6185
<b>VOLATILES (UG/L)</b>					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.8 J	0.6 J	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	2.5 J	1.5 J	16.8	14.2
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	1.1 J	0.87 J
1,1-DICHLOROETHENE	5	1.9 J	1.6 J	6	2.8 J
1,2-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.6 J	2.9 J	2.3 J
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	3.8 U	3.8 U	3.8 U	3.8 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.85 J	1.4 J	1.4 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.5 U	0.5 U	0.77 J	0.5 U
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.1 J	1.4 J	2 J	3.4 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.63 J
TOLUENE	5	0.5 U	0.4 J	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	95.7	130	220	93.7
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
<b>Method 8270D (UG/L)</b>					
1,4-DIOXANE	0.46	1.3	0.72	4.9	6.2
<b>Method 8260 SIM (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--
<b>Method 522 (UG/L)</b>					
1,4-DIOXANE	NL	--	--	--	--

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LOCATION NSAMPLE SAMPLE DATE QC TYPE DUP OF SDG	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	TT101D2 TT101D2-20191205 12/05/2019 NM  K6185
<b>VOLATILES (UG/L)</b>		
1,1,1-TRICHLOROETHANE	5	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U
1,1,2-TRICHLOROETHANE	1	0.82 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	12
1,1-DICHLOROETHANE	5	1.4 J
1,1-DICHLOROETHENE	5	4.8 J
1,2-DICHLOROBENZENE	3	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U
2-BUTANONE	50	2.5 U
2-HEXANONE	50	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U
ACETONE	50	2.6 J
BENZENE	1	0.5 U
BROMODICHLOROMETHANE	50	0.5 U
BROMOFORM	50	0.5 U
BROMOMETHANE	5	3.8 U
CARBON DISULFIDE	60	0.5 U
CARBON TETRACHLORIDE	5	1.1 J
CHLOROETHANE	5	0.5 U
CHLOROBENZENE	5	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U
CHLOROETHANE	5	0.5 U
CHLOROFORM	7	0.91 J
CHLOROMETHANE	5	0.5 U
CIS-1,2-DICHLOROETHENE	5	2.7 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U
ETHYLBENZENE	5	0.5 U
ISOPROPYLBENZENE	5	0.5 U
M+P-XYLENES	10	1 U
METHYL CYCLOHEXANE	NL	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U
METHYLENE CHLORIDE	5	0.5 U
O-XYLENE	5	0.5 U
STYRENE	5	0.5 U
TETRACHLOROETHENE	5	2.4 J
TOLUENE	5	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U
TRICHLOROETHENE	5	1100
TRICHLOROFLUOROMETHANE	5	0.5 U
VINYL CHLORIDE	2	0.57 J
<b>Method 8270D (UG/L)</b>		
1,4-DIOXANE	0.46	2.5
<b>Method 8260 SIM (UG/L)</b>		
1,4-DIOXANE	NL	--
<b>Method 522 (UG/L)</b>		
1,4-DIOXANE	NL	--

**Select Laboratory and Field Parameter Results  
Operable Unit 3  
Hooker/Ruco Site  
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
<b>Base Wells</b>							
MW-611 <sup>(1)</sup>	10/24/2006	NA	NA	NA	102	0.00	2.76
	10/25/2006	NA	NA	NA	112	0.41	3.04
	10/26/2006	5 UJ	5 U	2 J	133	0.00	2.49
	11/29/2006	5 U/5U	5 U/5 U	3 J/2 J	60	0.00	1.96
	12/21/2006	5 U/5 U	5 U/5 U	3 J/4 J	118	0.00	2.17
	1/24/2007	5 U	5 U	3 J	101	1.93	1.84
	4/19/2007	19	95	140	124	3.21	0.03
	7/20/2007	5 U	5 U	4	90	0.37	5.19
	10/11/2007	5 U	5 U	2 U	50	3.56	3.12
	1/24/2008	5 UJ	5 U	4.8	86	1.44	3.11
	4/23/2008	2 J	1 J	4	60	0.45	2.83
	7/16/2008	3.7 J	4.7 J	5.0 U	69	2.78	10.82
	10/28/2008	2 J	1 J	4	351	7.11	1.11
	4/8/2009	3.7 J	4.7 J	5.0 U	306	12.18	0.05
	10/15/2009	7.7	11	1.4 J	366	17.66	0.49
	5/10/2010	6.9	7.8 U	1.6 J	120	10.65	0.0
	1/20/2011	5.6/3.7 J	3.9 J/3.7 J	5.0 U/5.0 UJ	266	11.10	0.0
	4/19/2011	4.6 J/4.6 J	3.8 J/4.0 J	5.0 U/ 5.0	249	10.10	0.0
	11/30/2011	3.7 J	3.3 J	5.0 U	NM	12.81	NM
	5/23/2012	2.3 J	3.6 J	5.0 U	NM	NM	NM
11/5/2012	4.4 J	4.8 J	5.0 U	111	11.23	3.99	
MW-61D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	110	0.00	2.30
	10/25/2006	NA	NA	NA	107	0.65	3.74
	10/26/2006	5 UJ	5 U	3 J	109	0.00	2.99
	11/29/2006	5 U	5 U	5.7	54	0.00	1.92
	12/21/2006	5 U	5 U	3 J	90	0.00	2.59
	1/23/2007	5 U	5 U	3 J	54	1.21	1.84
	4/19/2007	27	130	200	79	6.66	0.26
	7/20/2007	5 U/5 U	5 U/2 J	4.0/4.0	83	0.44	3.30
	10/10/2007	5 U	5 U	1 J	26	3.39	4.20
	1/24/2008	5 U	5 U	3	78	1.33	3.21
	4/22/2008	5 U	5 U	2 U	60	0.41	2.91
	7/16/2008	5 UJ/5 UJ	5 U/5 U	2/2	87	2.35	2.13
	10/28/2008	2 J	1 J	2 U	335	3.75	0.21
	4/8/2009	3.9J /3.7 J	4.4 J/4.3 J	5.0 U/5.0 U	267	12.77	0.08
	10/15/2009	6.7	9.3	5.0 U	336	10.11	0.96
	5/10/2010	6.3	8.0 U	1.8 J	140	10.15	0.0
	1/20/2011	5.6	3.6 J	5.0 UJ	231	18.80	0.0
	4/19/2011	3.8 J	3.0 J	5.0 U	248	10.38	0.0
	11/30/2011	3.7 J	3.1 J	5.0 U	NM	13.21	NM
	5/23/2012	2.2 J	3.1 J	5.0 U	170	13.55	1.8
11/5/2012	4.2 J	3.9 J	5.0 U	124	11.85	3.0	
MW-61D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	37	0.00	0.15
	10/25/2006	NA	NA	NA	27	1.42	5.46
	10/26/2006	150 J	450	5800	62	1.94	4.04
	11/29/2006	39	150	1500	110	11.12	1.91
	12/21/2006	130	490	3400	120	9.28	2.36
	1/23/2007	160	590	3100	131	>20	0.89
	4/23/2007	140	580 J	2000	361	>20	0.21
	7/23/2007	200	640	3500	71	13.45	1.34
	10/11/2007	62	210	610	300	11.71	0.21
	1/24/2008	26	140	46	326	>20	0.78
	4/22/2008	11	89	11	248	14.49	0.09
	7/15/2008	40 J	330	39	173	19.99	0.08

Select Laboratory and Field Parameter Results  
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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-61D2 <sup>(1)</sup> (cont'd)	10/27/2008	25	150	33	381	>20	0.18
	4/9/2009	110	360	450	319	17.47	1.95
	10/14/2009	99	300	19	155	16.29	2.80
	5/10/2010	120	360	240	224	19.51	0.0
	11/16/2010	78	360	380	55	8.75	-2
	4/7/2011	110/70	240/240	18 J/10 J	196	17.58	(2)
	5/23/2012	13 J	110	12	123	8.54	9
	5/2/2013	30	120	13	196	16.37	>5.0
	10/29/2013 <sup>(5)</sup>	30	46	1.2 J	NM	NM	NM
	4/29/2014 <sup>(5)</sup>	51	73	1.2 J	NM	NM	NM
	10/30/2014 <sup>(5)</sup>	40 J	59 J	0.88 J	NM	NM	NM
	4/24/2015 <sup>(5)</sup>	52	150	1.3 J	NM	NM	NM
	10/22/2015	11	18	2.0 U	87	12.28	5.0
	4/26/2016	39	51	2.0 U	69	5.76	0.35
	10/21/2016 <sup>(5)</sup>	28	45	2.0UJ	NM	NM	0.27
	4/28/2017 <sup>(5)</sup>	59	69	1.0U	NM	NM	NM
	10/19/2017 <sup>(5)</sup>	62	55	1.0U	NM	NM	NM
	4/19/2018	85.4	57.1	1.0U	NM	NM	NM
	11/12/2018	85.2	61.6	1.0U	NM	NM	NM
	4/26/2019	160	73	1.0U	NM	NM	NM
10/16/2019	25.8	23.1	1.0U	-31	1.60	5.00	
MW-63D1 <sup>(2)</sup>	5/24/2010	6.4 J	9.2	35	166	0.00	0.0
	5/1/2013	17	3.4 J	13	232	11.93	1.6
	10/24/2013	3.2 J	5.6	45	208	17.25	0.9
	4/24/2014	9.9	7.3	29	276	11.59	0.0
	7/17/2014	6.9	6	19	158	3.50	3.2
	10/21/2014	5.5	3.8 J	3.2 J	121	6.91	1.5
	4/22/2015	3.4 J	5.0 U	2.0 U	332	5.52	4.3
	10/20/2015	2.3 J	3.7 J	2.0 U	58	33.76	0.8
	4/28/2016	6.1	2.4 J	2.0 U	264	5.22	0.3
	10/19/2016	11	5.0U	2.0UJ	54	14.10	1.8
	5/11/2017	2.1	1.0U	1.0U	192	8.21	0.1
	11/1/2017	4.5	1.7	1.0U	262	5.05	0.1
	5/8/2018	3.29	2.39	1.0U	135	6.23	0.8
	11/8/2018	5.08	2.70	1.0U	62	4.90	0.1
	4/24/2019	7	3	1.0U	117	15.95	0.1
10/15/2019	6.6	2.4	1.0U	283	11.36	1.5	
MW-63D2 <sup>(2)</sup>	5/24/2010	6.4 J	9.1	46	169	0.00	0.00
	5/1/2013	21	4.0 J	13	229	9.77	1.65
	10/24/2013	3.1 J	5.2	46	-17	11.03	3.86
	4/24/2014	7.9	8.1	29	202	7.95	0.11
	7/17/2014	5.6	6.1	21	125	2.70	3.10
	10/21/2014	5.1	3.7 J	3.2 J	167	6.48	1.20
	4/22/2015	2.7 J	5.0 U	2.0 U	280	6.09	2.30
	10/20/2015	2.4 J	3.6 J	2.0 U	53	35.80	2.97
	4/28/2016	4.9 J	1.6 J	2.0 U	256	5.26	0.07
	10/19/2016	5.0J	5.0U	2.0UJ	164	8.23	0.72
	5/11/2017 <sup>(5)</sup>	3.5	1.1	1.0U	NM	NM	NM
	11/1/2017	4.7	1.8	1.0U	233	6.19	0.00
	5/8/2018	2.81	1.71	1.0U	184	4.62	4.59
	11/8/2018	4.51	2.47	1.0U	205	5.06	0.00
	4/24/2019	5	3	1.0U	277	15.16	0.14
10/15/2019	3.1	1.9	1.0U	238	16.67	1.75	

**Select Laboratory and Field Parameter Results  
Operable Unit 3  
Hooker/Ruco Site  
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-63S <sup>(2)</sup>	5/21/2010	2.4 J	4.3 J	16	-111	0.00	0.06
	5/23/2013	10	7.8	76	74	4.53	1.33
	11/7/2013	9.4	7.7	5.0 U	7	8.91	3.16
	5/15/2014 <sup>(5)</sup>	7	6	18	NM	NM	0.00
	8/6/2014	5.0 UJ	5.5	7.2	145	5.64	0.10
	11/14/2014	3.5 J	3.8 J	1.5 J	203	7.88	25.0
	5/8/2015	5.5	5.0 U	4.7 J	4	11.79	0.3
	11/9/2015 <sup>(5)</sup>	3.3 J	2.5 J	2.0 U	NM	NM	NM
	5/18/2016 <sup>(5)</sup>	1.9 J	5.0 U	2.0 U	NM	NM	NM
	11/2/2016	5.0UJ	5.0U	2.0UJ	201	9.74	0.3
	4/27/2017	1.0U	1.0U	1.0U	249	11.91	0.5
	10/18/2017	3.9	2.7	1.0U	75	8.82	0.0
	5/23/2018	4.68	4.33	1.0U	197	4.45	1.3
	5/8/2019	6	4	1.0U	209	26.80	0.0
	10/27/2019	2.0	1.6	1.0U	101	13.30	4.1
MW-63I <sup>(2)</sup>	5/21/2010	5.4 J	8.3	47	-102	0.00	0.0
	5/23/2013	7.9	5.5	29	75	4.40	1.7
	11/7/2013	12	8.2	5.0 U	70	11.37	0.7
	5/15/2014	1.5 J	5.0 U	3.4 J	36	2.83	0.0
	8/6/2014	5.0 UJ	5.9	15	139	2.73	0.5
	11/14/2014	4.5 J	3.3 J	4.2 J	35	8.41	14.5
	5/8/2015	5.8	5.0 U	2.0 U	87	12.34	0.8
	11/9/2015	2.3 J	2.1 J	0.97 J	265	12.19	NM
	5/18/2016	2.7 J	5.0 U	2.0 U	231	13.55	0.4
	11/2/2016	5.0UJ	5.0U	2.0UJ	201	0.46	0.4
	4/27/2017	1.4	1.3	1.0U	247	8.67	NM
	10/18/2017	1.4	1.2	1.0U	210	5.44	0.0
	5/23/2018	1.76	0.78J	1.0U	203	5.96	0.3
	11/20/2018	7.09	5.21	1.0U	149	13.98	0.0
	5/8/2019	3	3	1.0U	212	16.78	0.0
10/27/2019	3.2	2.2	1.0U	124	12.40	1.5	
MW-70D1 <sup>(2)</sup>	4/11/2011	13	2.0 J	46	-135	0.69	4.0
	10/25/2012	2.0 J	5.0 U	12	NM	NM	NM
	2/4/2013	8.8	2.1 J	43	8	4.80	3.0
	4/26/2013	6.4	2.0 J	26	170	9.35	3.5
	7/23/2013 <sup>(5)</sup>	5.3	1.3 J	16	NM	NM	NM
	10/24/2013	5.8	1.1 J	21	38	12.56	2.8
	1/23/2014	4.2 J	1.9 J	17	-109	5.06	0.0
	4/23/2014	4.1 J	1.2 J	20	76	10.11	0.0
	7/21/2014	6.6	1.0 J	16	48	9.35	0.0
	10/23/2014	4.3 J	0.92 J	19	30	6.24	2.7
	4/24/2015	3.3 J	5.0 U	11	107	14.38	0.0
	10/22/2015	3.5 J	1.6 J	8.8	62	6.00	1.6
	4/27/2016	1.5 J	5.0 U	5.1	-17	0.08	0.4
	10/20/2016 <sup>(5)</sup>	5.0UJ	5.0U	4.7J	NM	NM	0.0
	4/28/2017	1.3J	1.0U	3.7J	-100	3.49	0.5
	10/17/2017	1.1	0.7J	3.2	-15	2.55	0.0
	4/26/2018	1.0U	1.0U	1.0U	62	1.50	>5
	11/6/2018	1.0U	1.0U	0.51J	72	2.08	1.3
4/25/2019	1.0U	1.0U	1	125	34.01	0.1	
10/14/2019	1.0U	1.0U	1.0U	90	1.59	3.7	
MW-70D2 <sup>(2)</sup>	4/11/2011	47	56	1000	-122	0.66	2.0
	10/25/2012	32	26	190	-4	8.78	3.2
	2/4/2013	62	23	29	27	11.14	0.0
	4/26/2013	51	12	4.2 J	-19	7.89	>5.0
	7/23/2013	49	14	5.0 U	16	1.88	1.2

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-70D2 <sup>(2)</sup> (cont'd)	10/24/2013	45	13	1.6 J	-17	3.95	0.1
	1/23/2014 <sup>(5)</sup>	20	8.1	5.0 U	NM	NM	NM
	4/23/2014	11	3.8 J	5.0 U	211	11.88	0.0
	7/21/2014	11	1.4 J	5.0 U	-9	9.22	0.0
	10/23/2014	1.8 J	5.0 U	5.0 U	39	3.82	4.5
	4/24/2015	1.6 J	5.0 U	2.0 U	-89	8.70	0.2
	10/22/2015	5.0 U	5.0 U	2.0 U	-21	4.44	NM
	4/27/2016	5.0 U	5.0 U	2.0 U	108	0.00	0.0
	10/20/2016	5.0UJ	5.0U	2.0UJ	59	0.00	0.3
	4/28/2017	1.0U	1.0U	1.0U	-73	0.76	0.0
	10/17/2017	1.0U	1.0U	1.0U	29	0.00	0.0
	4/26/2018	1.0U	1.0U	1.0U	154	3.93	4.9
	11/6/2018	1.0U	1.0U	1.0U	51	1.75	2.4
	4/25/2019	1.0U	1.0U	1.0U	40	16.29	0.0
	11/14/2019	1.0U	1.0U	1.0U	-28	0.64	3.1
MW-72D1 <sup>(2)</sup>	4/12/2011	13	1.9 J	21	-159	0.57	3.5
	10/25/2012	3.2 J	5.0 U	5.0 U	139	9.82	1.0
	2/4/2013	3.5 J	1.0 J	3.0 J	54	4.65	1.0
	5/1/2013	1.3 J	1.0 J	0.99 J	103	10.48	3.7
	7/23/2013	1.9 J	1.3 J	5.0 U	-11	2.37	>5.0
	10/24/2013	5.0 U	5.0 U	5.0 U	-80	4.60	4.6
	1/24/2014	5.0 U	5.0 U	5.0 U	36	10.78	NM
	4/23/2014 <sup>(5)</sup>	1.3 J	1.6 J	2.9 J	NM	NM	NM
	7/21/2014	5.0 U	5.0 U	5.0 U	-21	10.13	0.0
	10/23/2014	0.74 J	5.0 U	5.0 U	37	4.41	2.6
	4/24/2015	5.0 U	5.0 U	2.0 U	97	13.26	0.5
	10/22/2015	5.0 U	5.0 U	2.0 U	6	6.38	5.0
	4/28/2016	5.0 U	5.0 U	2.0 U	122	3.94	0.1
	10/20/2016	5.0UJ	5.0U	2.0UJ	105	9.86	0.0
	4/27/2017	1.0U	1.0U	1.0U	24	6.03	0.4
	10/19/2017	1.0U	1.0U	1.0U	38	0.00	NM
	4/26/2018	1.0U	1.0U	1.0U	150	3.92	NM
	11/6/2018	1.0U	1.0U	1.0U	116	2.51	0.7
4/25/2019	1.0U	1.0U	1.0U	12	12.04	0.0	
10/14/2019	1.0U	1.0U	1.0U	147	0.64	4.9	
MW-72D2 <sup>(2)</sup>	4/13/2011	330	5.3	5.0 U	-210	0.37	2.0
	10/25/2012	380	37	5.0 U	76	7.52	0.8
	2/4/2013	850	51	5.0 U	48	7.77	0.4
	5/1/2013	540	16	5.0 U	-32	9.69	>5.0
	7/23/2013	410	35	5.0 U	-134	2.03	3.7
	10/24/2013	480	25	5.0 U	-144	3.20	3.2
	1/24/2014	400	32	5.0 U	67	12.96	NM
	4/23/2014 <sup>(5)</sup>	450	43	5.0 U	NM	NM	NM
	7/21/2014	500	48	0.59 J	-2	9.43	0.3
	10/23/2014	560	54	5.0 U	52	3.03	2.8
	4/24/2015	240	37	2.0 U	42	9.51	0.5
	10/22/2015	190	29	2.0 U	9	4.73	1.9
	4/28/2016	200	23	2.0 U	284	0.72	0.1
	10/20/2016	170	19	2.0UJ	-27	0.00	0.0
	4/27/2017	78	12	1.0U	-82	1.47	0.0
	10/19/2017	85	11	5.0U	93	8.24	0.0
	4/26/2018	57	7.03	1.0U	173	0.33	>5
	11/6/2018	74.9	9.49	1.0U	33	1.97	2.01
4/25/2019	50	8	1.0U	85	11.79	0	
10/14/2019	39.2	6.9	1.0U	204	4.66	2.82	

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MW-73D1 <sup>(2)</sup>	4/25/2011	5.0 U	5.0 U	5.0 U	-155	2.56	3.5
	10/26/2012	5.0 U	5.0 U	2.6 J	7	11.93	5.0
	2/13/2013	5.0 U	5.0 U	5.0 U	296	9.91	0.0
	5/1/2013	5.0 U	5.0 U	5.0 U	-44	10.87	>5.0
	7/24/2013	1.9 J	5.0 U	5.0 U	-128	0.86	3.0
	10/25/2013	1.9 J	5.0 U	5.0 U	-51	2.94	0.3
	1/24/2014	5.0 U	5.0 U	5.0 U	143	14.42	NM
	4/24/2014	5.0 U	5.0 U	5.0 U	140	3.56	0.8
	7/18/2014	0.85 J	5.0 U	5.0 U	21	1.22	0.0
	10/30/2014	5.0 U	5.0 U	5.0 U	203	24.68	0.0
	4/24/2015	1.5 J	5.0 U	0.75 J	59	15.86	NM
	10/26/2015	2.5 J	5.0 U	2.0 U	63	8.44	0.1
	4/27/2016	2.9 J	5.0 U	2.0 U	134	1.70	0.9
	10/21/2016	4.3J	5.0U	2.0UJ	49	4.29	0.1
	4/28/2017	2.1J	1.0U	1.0U	16	2.23	1.6
	10/19/2017	1.7	0.5J	1.0U	22	1.61	0.0
	4/26/2018 <sup>(5)</sup>	1.38/1.31	1.0U/1.0U	1.0U/1.0U	NM	NM	NM
	11/6/2018	1.25	1.0U	1.0U	80	2.94	2.6
	4/24/2019	0.2J	1.0U	1.0U	104	11.37	0.0
	10/14/2019	2.6	1.0U	1.0U	187	0.87	5.0
MW-73D2 <sup>(2)</sup>	4/25/2011	38	20	1400	-53	1.86	3.5
	10/26/2012	52	19	130	12	8.07	5.0
	2/13/2013	60	23	22	332	12.53	0.0
	5/1/2013	26	12	16	-95	7.63	>5.0
	7/24/2013	60	17	3.0 J	-29	1.95	3.6
	10/25/2013	13	6.1	0.62 J	-32	1.74	1.3
	1/24/2014 <sup>(5)</sup>	6.3	5.7	1.1 J	NM	NM	NM
	4/24/2014	5.3	2.0 J	5.0 U	130	8.71	0.0
	7/18/2014	2.8 J	5.0 U	5.0 U	1	1.37	0.0
	10/30/2014	35	11	5.0 U	55	7.73	>5.0
	4/24/2015	8.5	5.0 U	2.0 U	-58	9.53	1.4
	10/26/2015	9.2	4.0 J	2.0 U	45	12.23	0.5
	4/27/2016	13	5.2	2.0 U	92	5.38	0.0
	10/21/2016	29	11	2.0UJ	24	0.93	0.0
	4/28/2017	34J	7.8J	1.0U	-37	3.86	0.0
	10/19/2017	7.2	2.5	1.0U	35	3.55	0.0
	4/26/2018	10.9	3.22	1.0U	NM	NM	NM
	11/6/2018	4.46	1.67	1.0U	147	3.24	>5
	4/24/2019	0.7J	0.4J	1.0U	NM	NM	NM
	10/14/2019	2.6	1.3	1.0U	65	0.87	5.0
MW-75D1 <sup>(2)</sup>	12/1/2011	51	23 J	960	NM	3.20	NM
	10/24/2012	32	18	1100	-35	9.41	1.6
	2/4/2013	39	16	1500	-48	6.09	0.0
	4/30/2013	25	7	510	1	11.07	4.1
	7/24/2013	17	6.3	120	-138	1.32	2.2
	10/24/2013	7	2.6 J	28	48	11.80	3.2
	1/24/2014	3.2 J	2.0 J	10	40	12.51	NM
	4/23/2014 <sup>(5)</sup>	6.3	4.9 J	9	NM	NM	NM
	7/18/2014 <sup>(5)</sup>	10	4.9 J	46	NM	NM	NM
	10/23/2014	9.4	2.8 J	66	47	3.23	>5.0
	4/22/2015	5.1	5.0 U	7.2	117	4.08	NM
	10/22/2015	5.0 U	5.0 U	2.0 U	191	6.86	5.0
	4/28/2016	4.2 J	2.4 J	2.0 U	194	0.00	0.1
	10/20/2016	5.0UJ	5.0U	2.0UJ	228	6.07	0.0
	4/27/2017	1.7	2.1	1.0U	-85	2.54	0.1
	10/18/2017 <sup>(5)</sup>	NS	NS	NS	-61	0.00	0.0

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MW-75D1 <sup>(2)</sup> (cont'd)	11/1/2017	3.7	3.3	1.0U	NS	NS	NS
	5/4/2018 <sup>(5)</sup>	1.55/1.68	1.21/1.0U	1.0U/1.0U	NM	NM	NM
	11/6/2018	1.25	1.11	1.0U	35	2.14	0.7
	4/25/2019	0.9J	1	1.0U	146	23.47	0.1
	10/14/2019	1.0U	1.8	1.0U	77	1.47	5.0
MW-75D2 <sup>(2)</sup>	12/1/2011	44	88	680	NM	10.91	NM
	10/24/2012	34	63	600	-23	2.63	0.0
	2/4/2013	46	76	870	-55	16.33	0.0
	4/30/2013	47	58	530	26	12.20	3.9
	7/24/2013	56	87	560	-136	1.32	2.2
	10/24/2013	27	42	460	-92	5.56	0.0
	1/24/2014	26	45	330	0	12.93	NM
	4/23/2014 <sup>(5)</sup>	31	47	260	NM	NM	NM
	7/18/2014	20	32	220	-37	10.65	0.0
	10/23/2014	17 J	35 J	190 J	6	2.68	3.5
	4/22/2015	9.3	19	150	-82	4.19	1.4
	10/22/2014 <sup>(5)</sup>	8.3	8.6	87	NM	NM	NM
	4/28/2016	1.5 J	5.0 U	78	-41	0.98	0.3
	10/20/2016	5.0UJ	5.0U	18J	-140	0.00	0.0
	4/27/2017	1.0U	1.6J	7.6J	-92	4.60	0.1
	10/18/2017	0.7J	0.7J	5	103	0.00	0.3
	5/4/2018	0.42J	0.46J	3.27	161	0.00	3.6
	11/6/2018	1.0U	0.86J	4.9	89	1.87	3.6
4/25/2019	0.8J	0.6J	4	1	16.65	0.0	
10/14/2019	1.0U	1.0U	5	-104	0.72	5.0	
MW-76S <sup>(2)</sup>	4/6/2011	5.0 U	5.0 U	2.4 J	-148	0.78	7.0
	10/25/2012	5.0 U	5.0 U	9.2	45	9.18	1.6
	2/6/2013	5.0 U	5.0 U	19	NM	NM	NM
	4/24/2013 <sup>(5)</sup>	5.0 U	5.0 U	5.9	-70	5.76	1.25
	7/23/2013	0.95 J	5.0 U	5.0 U	-157	1.71	2.90
	10/25/2013	5.0 U	5.0 U	2.3 J	-1	4.33	0.56
	1/24/2014	1.0 J	5.0 U	2.0 J	125	12.79	0.0
	4/23/2014	2.0 J	5.0 U	5.0 U	228	4.29	0.0
	7/18/2014 <sup>(5)</sup>	1.3 J	5.0 U	7.5	NM	NM	NM
	10/21/2014 <sup>(5)</sup>	1.1 J	5.0 U	1.5 J	NM	NM	NM
	4/22/2015	5.0 U	5.0 U	2.0 U	236	5.52	2.2
	10/22/2015	1.4 J	5.0 U	2.0 U	42	5.77	4.8
4/27/2016	1.4 J	5.0 U	2.0 U	180	2.26	0.0	
10/20/2016	5.0UJ	5.0U	2.0UJ	62	5.70	0.0	
MW-76I <sup>(2)</sup>	4/8/2011	5.0 U	5.0 U	1000	159	1.48	4.0
	10/25/2012	1.1 J	5.0 U	240	-23	8.51	4.25
	2/6/2013	5.0 U	5.0 U	81	4	16.35	2.2
	4/24/2013	5.0 U	5.0 U	50	-74	4.9	>5.0
	7/23/2013	5.0 U	5.0 U	13	0	2.14	2.9
	10/25/2013	5.0 U	5.0 U	5.1	4	3.56	0.5
	1/24/2014	0.70 J	5.0 U	3.2 J	-8	12.62	0.7
	4/23/2014	5.0 U	5.0 U	1.5 J	106	5.08	0.05
	7/18/2014 <sup>(5)</sup>	0.74 J	5.0 U	0.96 J	NM	NM	NM
	10/21/2014	0.96 J	5.0 U	0.62 J	73	3.48	3.30
	4/22/2015	5.0 U	5.0 U	2.0 U	-216	4.43	NM
	10/22/2015	1.5 J	1.2 J	2.0 U	16	5.48	5.00
	4/27/2016	1.4 J	5.0 U	2.0 U	78	4.62	0.00
	10/20/2016	5.0UJ	5.0U	2.0UJ	17	0.27	0.00
10/17/2017	1.6	1.5	1.0U	-28	0	0.62	
11/6/2018	1.36	0.75J	1.0U	NM	NM	NM	

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MW-76D1 <sup>(2)</sup>	4/11/2011	14	1.1 J	52	-123	0.98	2.0
	10/25/2012	6.2	5.0 U	52	-14	8.32	5.00
	2/6/2013	8.7	5.0 U	28	-16	10.47	3.00
	4/30/2013 <sup>(5)</sup>	6.4	1.1 J	17	NM	NM	NM
	7/23/2013	4.6 J	1.0 J	13	-148	7.76	3.94
	10/25/2013	5.6	1.1 J	15	97	11.27	0.08
	1/24/2014	4.2 J	1.4 J	9.9	-117	5.04	NM
	4/23/2014	4.1 J	5.0 U	9.5	153	5.70	0.05
	7/21/2014	5.0 U	5.0 U	3.8 J	143	6.96	1.00
	10/21/2014	6.6	1.1 J	7	73	2.87	2.60
	4/22/2015	3.1 J	5.0 U	5.4	17	4.26	1.20
	10/22/2015	4.1 J	1.3 J	3.9	-75	19.54	1.68
	4/27/2016	2.3 J	5.0 U	2.3	-77	1.00	0.00
	10/20/2016	2.1J	5.0U	2.0UJ	-171	0.00	0.00
	4/27/2017	1.2	1.0U	1.5	-57	1.61	0.00
	10/17/2017	1.9	0.6J	1.8	-34	0.00	0.00
	4/26/2018	0.55J	0.45J	1.0U	32	1.11	>5
	11/6/2018	1.53	0.51J	0.4J	75	1.64	1.87
	4/25/2019	0.9J	0.4J	1	-120	11.83	0.07
	10/17/2019	1.0U	1.0U	7.7	-47	0.14	5.00
MW-76D2 <sup>(2)</sup>	4/8/2011	74	42	1100	-59	1.37	4.8
	10/25/2012	44	25	650	-19	8.71	0.0
	2/6/2013	63	25	1500	-76	16.45	0.0
	4/30/2013	51	12	19	15	14.13	2.2
	7/23/2013	52	27	5.0 U	-73	2.65	>5.0
	10/25/2013	45	19	4.9 J	13	5.07	5.1
	1/24/2014 <sup>(5)</sup>	40	18	7.6	NM	NM	NM
	4/23/2014	78	17	5.0 U	164	6.23	0.18
	7/21/2014	80	18	0.79 J	91	8.53	0.49
	10/21/2014	26	18	0.72 J	103	7.54	>5.0
	4/22/2015	60	25	2.0 U	-66	4.25	NM
	10/22/2015	3.6 J	1.0 J	2.0 U	-60	4.10	5.00
	4/27/2016	2.8 J	1.0 J	2.0 U	51	5.90	0.00
	10/20/2016	5.0UJ	5.0U	2.0UJ	-23	1.06	0.00
	4/27/2017	4.1J	1.0J	1.0U	-23	1.14	0.38
	10/17/2017 <sup>(5)</sup>	5.6	2.6	1.0U	NM	NM	NM
	4/26/2018 <sup>(5)</sup>	25.8	13	1.0U	NM	NM	NM
11/6/2018	1.40	0.74J	1.0U	23	2.84	1.76	
4/25/2019	1	0.8J	1.0U	105	9.62	0.00	
10/17/2019	1.0U	1.0U	1.0U	34	3.70	5.00	
MW-77D1	4/14/2011	1.6 J	1.7 J	6.2	-194	0.24	3.5
	10/25/2012	2.4 J	5.0 U	16	5	9.93	0.0
	2/6/2013 <sup>(5)</sup>	7.8	5.0 U	24	NM	NM	NM
	4/26/2013	4.1 J	1.0 J	17	-64	8.03	3.52
	7/24/2013 <sup>(5)</sup>	2.6 J/2.7 J	0.54 J/0.56 J	3.5 J/3.7 J	NM	NM	NM
MW-77D2 <sup>(2)</sup>	4/14/2011	20	28	140	-111	0.72	4.0
	10/25/2012	5.2	12	80	-35	14.28	0.0
	2/6/2013 <sup>(5)</sup>	17/17	11/11	99/100	NM	NM	NM
	4/26/2013	10	7.4	150	-141	5.39	>5.0
	7/24/2013	15	22	13	-79	2.06	1.46
	10/25/2013	40	18	5.0 U	27	11.71	1.17
	1/23/2014	66	28	1.4 J	-107	12.21	1.20
	4/24/2014	33	18	5.0 U	46	3.49	0.0
	7/18/2014	52	19	5.0 U	78	1.37	0.0

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-77D2 <sup>(2)</sup> (cont'd)	10/21/2014	150	21	5.0 U	174	3.71	>5.0
	4/24/2015	120	23	2.0 U	170	13.50	0.0
	10/23/2015 <sup>(5)</sup>	57	21	0.74 J	NM	NM	NM
	4/27/2016	71	20	2.0 U	189	5.50	0.3
	10/21/2016	170	37	2.0UJ	99	8.05	0.1
	4/27/2017	140J	41J	1.0U	101	5.37	0.0
	10/18/2017	164	32	5.0U	101	0.46	0.1
	4/26/2018	131	25.6	1.0U	223	8.12	NM
	11/8/2018	66.2	13.3	1.0U	42	3.33	3.3
	4/24/2019	63	11	1.0U	173	10.10	0.0
	10/14/2019	47.4	9.8	1.0U	208	3.75	5.0
MW-81D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	15	2.26	3.23
	10/25/2006	NA	NA	NA	-55	3.01	9.76
	10/26/2006	15 J	18	790	-25	0.00	10.12
	1/29/2007	8	9	690	-55	2.26	2.36
	4/19/2007	20/21	61/61	580/550	-128	0.00	2.06
	7/23/2007	54	190	490	-22	0.74	5.19
	10/9/2007	39	110	620	-77	3.08	4.98
	4/21/2008	14	54	2	-99	0.92	2.69
	10/28/2008	54/54	130/130	3/2	292	17.31	2.04
	4/7/2009	14	48	71	158	0.04	5.52
	10/15/2009	28	170	2.4 J	216	8.90	0.71
	5/6/2010	16	99	180	72	0.00	2.2
	11/17/2010	24	110	1.1 J	327	3.54	0.0
	4/7/2011	20	73	190	27	0.48	2.2
	11/30/2011	13	85	0.71 J	NM	12.58	NM
	5/23/2012	7.3 J	41	0.95 J	80	9.90	0.44
	11/5/2012	14	86	310	112	12.24	2.88
	5/2/2013 <sup>(5)</sup>	44	190	5.0 U	NM	NM	NM
	10/28/2013	64	190	7.5	-137	8.41	0.68
	4/29/2014	97	220	1.8 J	146	8.94	0.00
	10/30/2014	96 J	190 J	6.3 J	87	19.39	0.12
	4/24/2015 <sup>(5)</sup>	97	160	1.3 J	NM	NM	NM
	10/21/2015	82	120	2.0 U	43	7.42	1.35
4/26/2016 <sup>(5)</sup>	70	110	1.8 J	NM	NM	1.03	
10/21/2016	45	53	2.1J	138	12.43	1.74	
4/28/2017	70	91	1.8	138	10.66	0.10	
10/19/2017	54	92	5.0U	117	24.82	0.00	
4/19/2018	64.6	206	5.0U	194	13.14	4.76	
11/13/2018	90.7	107	0.43J	130	5.12	2.35	
4/25/2019	68	150	1.0U	92	32.82	0.00	
10/16/2019	58	137	1.2	215	13.34	3.76	
MW-81D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	78	16.87	2.37
	10/25/2006	NA	NA	NA	73	17.96	0.40
	10/26/2006	5 J	26	4 J	93	15.00	0.74
	1/24/2007	6.2	32	5	-39	2.90	0.98
	4/18/2007	1 J	14	4 J	-110	0.00	2.71
	7/19/2007	15	130	40	48	14.10	1.48
	10/10/2007	13	81	37	35	7.45	9.39
	4/18/2008	2 J	20	2 U	81	4.23	0.45
	10/22/2008	6	32	2	107	>20	0.09
	4/7/2009	13	150	2.4 J	326	10.58	0.45
	10/14/2009	6.7	53	5.5	227	18.39	0.50
	5/10/2010	14	63	5.0 U	93	9.69	0.50
	11/16/2010	21/21	130/130	5.0 U/5.0 U	254	13.28	1
4/7/2011	67	470	25 U	85	2.92	0.0	
MW-81D2 <sup>(1)</sup> (cont'd)	11/30/2011	10	130	5.0 U	NM	11.01	NM

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	5/23/2012	1.2 J	18	5.0 U	64	10.23	1.8
	11/5/2012	9.1	110	1.4 J	NM	NM	NM
	5/2/2013	1.9 J	11	5.0 U	46	17.28	3.9
	10/28/2013	1.4 J	12	5.0 U	NM	2.97	0.0
	4/29/2014	5.8	29	5.0 U	119	8.94	0.0
	10/30/2014	18	77	5.0 U	86	15.60	NM
	4/24/2015	150	170	2.0 U	-61	5.18	1.5
	10/21/2015	120	130	2.0 U	90	7.21	1.9
	4/26/2016	95	30	2.0 U	43	6.46	0.0
	10/21/2016 <sup>(5)</sup>	43	13	2.0UJ	NM	NM	1.1
	4/28/2017	110J	30J	1.0U	37	2.76	0.2
	10/19/2017	76	13	5.0U	108	0.00	0.0
	4/19/2018	84.4	16.8	1.0U	241	1.41	2.2
	11/13/2018	4.09	0.65J	1.0U	52	1.95	3.3
	4/25/2019	61	8	1.0U	17	14.62	0.0
	10/16/2019	54.9	3.5	1.0U	207	6.57	1.8
MW-82D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	-119	1.93	6.14
	10/25/2006	NA	NA	NA	-154	0.00	9.36
	10/26/2006	8 J	4 J	1100	-142	2.77	6.32
	11/30/2006	8.8	7.9	1900	-158	0.00	1.86
	12/20/2006	8.2	15	2500	-149	0.00	1.98
	1/25/2007	50	130	5500	-145	1.21	1.94
	4/20/2007	5 U	5 U	860	-153	0.76	2.79
	7/25/2007	120	780 J	3600	95	15.15	2.58
	10/18/2007	19	24	430	125	0.73	5.25
	1/23/2008	14/14	48/49	1600/1600	-38	1.89	5.82
	4/25/2008	38	160	85	108	0.13	1.49
	7/18/2008	64	230	2.2	96	3.38	NM
	10/30/2008	110	230	790	309	<20	NM
	4/13/2009	47	160	1.7 J	328	5.35	0.21
	10/20/2009	21	84	5.0 U	231	8.08	0.26
	5/12/2010	16	64	5.0 U	53	7.01	0.0
	11/17/2010	110	63	3.2 J	307	8.00	NM
	5/19/2011	33/32	48/49	72/76	277	6.70	0.0
	12/1/2011	12	23	9.8	NM	14.35	NM
	5/23/2012	13 J	28	1.0 J	138	7.91	5.0
	10/26/2012	17	23	34	95	7.18	0.67
	5/1/2013 <sup>(5)</sup>	14	18	41	NM	NM	NM
	10/25/2013 <sup>(5)</sup>	14	18	12	NM	NM	NM
	4/25/2014	16	20	1.7 J	177	5.83	0.00
	10/30/2014	32 J	27 J	0.84 J	56	6.75	1.40
	4/24/2015	28	24	0.95 J	7	16.00	0.00
	10/21/2015	26	21	2.0 U	-31	11.27	1.59
	4/26/2016	37	21	2.0 U	98	9.29	1.08
	10/19/2016	24	22	2.0UJ	-7	12.23	0.14
	4/25/2017	31	18	1.0U	79	15.24	0.00
	10/17/2017	21	15	1.0U	100	14.37	0.00
	4/20/2018	NA	NA	NA	124	11.72	2.81
	11/8/2018	1.16	1.12	1.0U	37	1.04	1.04
	4/24/2019	10	14	4	126	11.54	0.47
	10/15/2019	8.4	11.5	2.1	150	15.23	5.00
MW-82D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	-166	0.38	10.44
	10/25/2006	NA	NA	NA	-95	1.98	11.64
	10/26/2006	61 J	48	1300	-110	3.37	8.60
	11/30/2006	88	78	1300	-179	0.00	2.31

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MW-82D2 <sup>(1)</sup> (cont'd)	12/20/2006	52	50	600	-178	0.00	0.34
	1/25/2007	150	110	180	-147	1.70	2.01
	4/20/2007	130	91	47	-183	0.61	1.91
	7/25/2007	320 J	170 J	80	-192	0.50	6.56
	10/18/2007	34	3 J	2100	-359	2.93	1.22
	1/23/2008	150	84	160	-147	1.51	4.74
	4/24/2008	25	18	5	-352	0	2.43
	7/18/2008	21	14	10	-472	0.00	16.32
	10/30/2008	110	230	790	-3	0.84	3.01
	4/13/2009	130	91	3.5 J	282	>20	0.05
	10/20/2009	86	56	96	-260	0.07	1.13
	5/12/2010	100	92	7.1	-137	0.00	1.0
	11/18/2010	71	74	8.3	276	0.83	1.2
	4/27/2011	90	58	5.0 U	-19	3.38	1
	12/1/2011	42	46	6.7	NM	11.74	NM
	5/23/2012	9.1 J	22	5.0 U	123	7.97	5
	10/26/2012	11	17	3.1 J	56	>20	3.2
	5/1/2013	7.5	5.0 J	5.0 U	238	8.33	>5.0
	10/25/2013	4.2 J	3.9 J	5.0 U	-127	11.22	0
	4/25/2014	3.0 J	3.9 J	5.0 U	73	3.38	0.13
	10/30/2014	6.2	4.7 J	5.0 U	76	0.88	0
	4/24/2015	7.3	5.0 U	2.0 U	132	15.04	0
	10/21/2015	6.0	5.3	2.0 U	-61	13.98	2.9
	4/26/2016	3.2 J	3.4 J	2.0 U	62	0.34	0.0
	10/19/2016	5.0UJ	5.0U	2.0UJ	-13	4.34	0.3
	4/25/2017	1.0U	1.0U	1.0U	89	24.76	0.2
	10/17/2017	1.0U	1.0U	1.0U	-24	2.38	0.1
	4/20/2018	0.36J	0.41J	1.0U	119	11.77	<5
	11/8/2018	13.1	11.8	1.0U	113	6.52	0.2
	4/24/2019	0.7J	0.8J	1.0U	142	10.16	0.1
10/15/2019	1.0U	1.0U	1.0U	123	5.29	3.8	
MW-83D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	70	0.00	1.94
	10/25/2006	NA	NA	NA	-146	0.00	0.23
	10/26/2006	31	290	140	-64	2.06	0.06
	1/30/2007	44	320	130	6	1.74	0.01
	4/18/2007	5 U	29	7.7	-70	0.00	0.0
	7/17/2007	130	360	310	-14	0.41	0.04
	10/12/2007	68	200	220	64	3.00	0.13
	1/22/2008	140	420	51	174	8.34	0.12
	4/17/2008	40	160	2	151	2.32	0.03
	7/15/2008	130 J	340	34	216	1.91	NM
	10/24/2008	110/110	200/200	2/2	291	8.31	0.04
	4/8/2009	80	190	4.3 J	274	1.44	0.09
	10/14/2009	110	260	3.8 J	361	13.17	0.41
	5/5/2010	96	240	260	284	3.50	NM
	11/15/2010	39	180	13	271	9.14	0.0
	4/7/2011	52 J	180 J	30 J	135	4.18	0.0
	11/30/2011	13	150	8.4	NM	>20	NM
	5/23/2012	9.8 J	120	1.2 J	132	12.32	0.0
	10/24/2012	25	180	5.0 U	276	7.22	0.0
	5/1/2013	30	290	1.4 J	212	19.10	2.9
	10/29/2013	45	200	9	NM	13.65	0.5
	4/29/2014 <sup>(5)</sup>	40	210	2.1 J	NM	NM	NM
	10/30/2014	50 J	200 J	2.6 J	112	11.80	1.2
	4/24/2015	37	41	2.0 U	181	17.82	0.2
	10/22/2015	48	140	1.5 J	59	7.04	1.2
	4/26/2016	55	120	1.1 J	109	7.63	0.1

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MW-83D1 <sup>(1)</sup> (cont'd)	10/21/2016	59	100	2.0UJ	128	10.05	0.1
	4/28/2017	63J	110J	1.2J	68	10.60	0.7
	10/20/2017	89	173	2.0UJ	116	15.19	0.0
	4/19/2018	38.8	133	5.0U	180	10.42	4.3
	11/12/2018	51.5	67.3	1.0U	87	6.44	>5
	4/26/2019	99	66	1.0U	69	15.46	0.0
	10/16/2019	71.6	141	1.6	140	20.79	5.0
MW-83D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	241	>19.99	9.88
	10/25/2006	NA	NA	NA	179	>20	0.0
	10/26/2006	17	110	74	171	>20	0.06
	1/29/2007	13	75	22	249	13.20	0.0
	4/18/2007	3 J	23	1 J	97	0.00	0.0
	7/17/2007	7.9	43	1 J	289	>19.99	0.08
	10/15/2007	2 J	10	2 U	279	11.44	0.23
	1/22/2008	3	12	2 U	328	>20	0.14
	4/17/2008	5/4 J	22/21	2 U/2 U	295	>20	0.04
	7/15/2008	8.3 J	46	2 U	270	8.50	0.04
	10/21/2008	2 J	14	2 U	297	0.92	0.00
	4/8/2009	5.2	30	5.0 U	370	20.00	0.01
	10/13/2009	6	34	5.0 U	380	19.81	0.01
	5/6/2010	18	110	5.0 U	190	11.32	NM
	11/16/2010	6.2	42	5.0 U	370	16.45	0.0
	4/7/2011	17	96	5.0 U	249	17.54	0.0
	11/30/2011	12/12	98/150	5.0 U/8.1	NM	16.99	NM
	5/23/2012	1.8 J	21	5.0 U	79	12.67	0.0
	10/24/2012	7	71	5.0 U	225	9.81	0.0
	5/1/2013	28	74	5.0 U	162	12.34	1.0
	10/29/2013	40	170	5.0 U	-63	8.73	0.3
	4/29/2014	19	100	5.0 U	172	8.38	0.0
	10/30/2014 <sup>(5)</sup>	43 J	150 J	5.0 U	NM	NM	NM
	4/24/2015	27	94	2.0 U	240	19.73	0.6
	10/22/2015 <sup>(5)</sup>	53	120	2.0 U	NM	NM	NM
	4/26/2016	66	140	2.0 U	129	1.30	0.0
	10/21/2016 <sup>(5)</sup>	93	170	2.0UJ	NM	NM	0.4
	4/28/2017	120J	190J	1.0U	97	4.25	0.5
	10/20/2017	104	156	2.0UJ	143	1.93	0.2
4/19/2018	66	95.4	5.0U	223	6.97	3.7	
11/12/2018	88.2	118	1.0U	46	5.61	2.3	
4/26/2019	78	100	1.0U	162	13.60	0.0	
10/16/2019	96	127	1.0U	248	8.07	2.5	
MW-84D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	50	7.89	1.44
	10/25/2006	NA	NA	NA	86	8.03	1.37
	10/26/2006	47	350	430	78	6.51	1.19
	1/30/2007	66	640	150	160	7.53	1.24
	4/24/2007	32	560	11	282	>20	0.05
	7/24/2007	47	180	12	301	>20	0.05
	10/17/2007	15/15	48/56	2.1/2.4	304	8.81	0.62
	1/28/2008	19	32	2 U	303	>20	0.0
	4/24/2008	3 J	4 J	2 U	210	0.6	0.03
	7/17/2008	7.1	12	2 U	95	14.51	0.13
	10/29/2008	7	7	2 U	319	12.18	0.0
	4/9/2009	23	24	5.0 U	214	13.34	0.0
	10/19/2009	5.0 U	2.3 J	5.0 U	271	10.98	0.19
	5/12/2010	1.4 J	5.0 U	5.0 U	127	9.85	NM
	11/18/2010	3.9 J	3.5 J	5.0 U	207	7.94	NM
	4/27/2011	27/33	8.5/10	5.0 U/5.0 U	210	7.54	NM

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MW-84D1 <sup>(1)</sup> (cont'd)	12/1/2011	94	35	0.52 J	NM	13.98	NM
	5/24/2012	4.3 J	4.4 J	5.0 U	185	10.30	0.00
	10/26/2012	80	54	5.0 U	72	7.29	1.08
	5/1/2013	81	29	5.0 U	250	12.62	0.72
	10/25/2013	83	35	5.0 U	23	12.48	1.50
	4/25/2014	41	30	5.0 U	134	6.86	0.26
	10/23/2014	51	25	5.0 U	110	7.66	2.00
	4/24/2015	54	21	2.0 U	169	14.19	0.00
	10/21/2015	50	23	2.0 U	-9	6.83	2.76
	4/26/2016	23	18	2.0 U	168	3.91	0.88
	10/20/2016	33	19	2.0UJ	-10	6.52	0.00
	4/25/2017	15	12	1.0U	89	17.68	0.00
	10/17/2017	21	11	1.0U	120	2.87	0.54
	4/19/2018	3.35	1.43	1.0U	162	7.29	2.57
	11/13/2018	3.6	0.72J	1.0U	195	4.39	1.80
	4/24/2019	0.5J	0.3J	1.0U	252	28.87	0.00
	10/15/2019	8.4	7.4	1.0U	148	2.56	2.34
MW-84D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	-90	4.69	1.53
	10/25/2006	NA	NA	NA	-47	2.84	0.27
	10/26/2006	19 J	92	140	-77	2.67	0.64
	1/29/2007	15	94	150	7	3.91	0.18
	4/24/2007	69	510	33	138	16.31	0.30
	7/24/2007	59	440	20	139	>20	0.21
	10/17/2007	16	170	7.1	34	4.68	0.23
	1/28/2008	27	250 J	5	97	9.91	0.79
	4/23/2008	11	100	2 U	6	3.96	0.09
	7/17/2008	20	130	2 U	13	14.05	0.27
	10/29/2008	21	110	2 U	160	8.33	0.25
	4/9/2009	15 J	74 J	5.0 U	70	10.15	0.08
	10/16/2009	14	110	5.0 U	135	14.65	1.45
	5/25/2010	23 J	190	1.6 J	-20	11.75	0.0
	11/18/2010	8.6	79	5.0 U	-21	0.79	0.0
	4/15/2011	1.0 J	9.4	5.0 U	-49	0.37	0.0
	12/1/2011	7.7	110	5.0 U	NM	11.00	NM
	5/24/2012	5.7	75	5.0 U	114	4.83	0.5
	10/26/2012	5.4	65	5.0 U	-28	3.14	5.0
	5/1/2013 <sup>(5)</sup>	50	170	5.0 U	NM	NM	NM
	10/25/2013	21	120	5.0 U	-45	12.51	NA
	4/25/2014	28	150	5.0 U	21	1.72	0.26
	10/23/2014	19	100	5.0 U	54	3.49	1.30
	4/24/2015	22	92	2.0 U	89	8.35	0.00
	10/21/2015	20	78	2.0 U	-87	8.85	5.00
	4/26/2016 <sup>(5)</sup>	15	58	2.0 U	NM	NM	NM
	10/20/2016 <sup>(5)</sup>	15	59	2.0UJ	NM	NM	0.00
4/25/2017	15	49	1.0U	69	0.48	0.00	
10/17/2017	7.2	27	1.0U	29	0.00	0.00	
4/19/2018	6.48	19	1.0U	59	3.40	5.00	
11/13/2018	1.94	1.11	1.0U	169	7.68	2.81	
4/24/2019	5	10	1.0U	177	9.91	0.00	
10/15/2019	1.0U	1.0U	1.0U	198	1.70	5.00	
MW-85S <sup>(2)</sup>	4/20/2011	3.6 J	5.0 U	5.0 U	46	4.38	0.5
	10/26/2012	2.0 J	0.60 J	0.89 J	NM	NM	NM
	2/4/2013	2.5 J	5.0 U	5.0 U	NM	NM	NM
	4/30/2013	1.0 J	5.0 U	5.0 U	180	7.88	>5.0
	7/24/2013	5.0 U	5.0 U	5.0 U	12	1.39	0.4
	10/28/2013 <sup>(5)</sup>	5.0 U	5.0 U	5.0 U	NM	NM	NM

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-85S <sup>(2)</sup> (cont'd)	1/27/2014	0.97 J	5.0 U	5.0 U	112	11.37	NM
	4/24/2014	0.99 J	5.0 U	5.0 U	161	5.97	0.0
	7/17/2014	1.1 J	5.0 U	5.0 U	26	4.98	NM
	10/31/2014	2.3 J	5.0 U	5.0 U	20	9.22	1.4
	4/23/2015 <sup>(5)</sup>	5.0 U	5.0 U	2.0 U	NM	NM	NM
	10/20/2015	0.75 J	5.0 U	2.0 U	-44	29.15	0.4
	5/18/2016 <sup>(5)</sup>	5.0 U	5.0 U	2.0 U	NM	NM	NM
	10/18/2016	5.0UJ	5.0U	2.0UJ	-45	2.63	0.0
MW-85I <sup>(2)</sup>	4/20/2011	5.2	5.0 U	5.0 U	93	2.90	2.4
	10/26/2012	2.6 J	0.54 J	5.0 U	NM	NM	NM
	2/4/2013	1.9 J	5.0 U	5.0 U	NM	NM	NM
	4/30/2013	1.7 J	0.68 J	5.0 U	-57	5.63	>5.0
	7/24/2013	1.3 J	0.53 J	5.0 U	-139	0.42	0.1
	10/28/2013	2.7 J	5.0 U	5.0 U	-137	10.87	1.3
	1/27/2014	2.2 J	0.78 J	5.0 U	-61	10.43	NM
	4/24/2014	1.2 J	5.0 U	5.0 U	87	10.21	0.19
	7/17/2014	1.2 J	0.67 J	5.0 U	92	5.36	2.30
	10/31/2014	1.2 J	0.68 J	5.0 U	24	9.22	>5.0
	4/23/2015	2.4 J	5.0 U	2.0 U	59	6.55	0.34
	10/20/2015	2.2 J	5.0 U	2.0 U	-3	17.60	NM
	4/25/2016	3.4 J	2.5 J	2.0 U	237	15.03	NM
	10/18/2016	5.5	5.0U	2.0UJ	-124	0.33	0.00
	10/16/2017	4.4	3.6	1.0U	NM	0.00	0.00
11/12/2018	3.70	2.58	1.0U	57	6.43	4.46	
MW-85D1 <sup>(2)</sup>	4/20/2011	34/31	10/9.9	70/70	-33	3.75	(3)
	10/26/2012	5.0 U	5.0 U	9.9	18	>20	5.0
	2/4/2013	5.8	9.2	17	1	7.26	2.0
	4/30/2013	15	14	1.4 J	28	9.02	>5.0
	7/24/2013	9.5	17	4.4 J	-130	2.06	>5.0
	10/28/2013 <sup>(5)</sup>	22	26	7.9	NM	NM	NM
	1/27/2014	25	21	12	-83	11.37	NM
	4/24/2014	30	23	5.7	50	6.35	0.0
	7/17/2014	20	26	7.2	39	4.68	2.0
	10/31/2014	13	16	5.0 U	-10	11.29	>5.0
	4/23/2015	4.6 J	14	2.0 U	120	11.43	0.0
	10/20/2015	3.3 J	9.7	2.0 U	33	21.24	0.0
	4/25/2016	4.1 J	10	2.0 U	186	10.27	0.0
	10/18/2016	6.9	12	2.0UJ	19	11.24	0.0
	4/25/2017 <sup>(5)</sup>	4.4	4.9	1.0	NM	NM	NM
	10/16/2017	1.4	1.6	2.1	110	0.33	1.4
	4/20/2018	5.79	9.99	1.66	NM	NM	NM
	11/12/2018	2.84	12.7	3.22	30	4.63	3.4
4/23/2019	2	4	0.3J	150	4.33	0.1	
10/15/2019	1.5	1.9	1.0U	195	3.40	NM	
MW-85D2 <sup>(2)</sup>	4/20/2011	170	160	1100	-190	1.59	4.0
	10/26/2012	66	37	280	29	14.34	5.0
	2/4/2013	21/23	24/25	40/40	NM	NM	NM
	4/30/2013	9.2	21	25	155	7.90	>5.0
	7/24/2013	27	44	15	6	1.89	1.6
	10/28/2013	5.7	8.3	2.6 J	-98	3.03	0.7
	1/27/2014	11	21	2.3 J	-98	12.81	NM
	4/24/2014	5.9	13	0.93 J	36	9.77	0.09
	7/17/2014	6.8	14	5.0 U	13	2.82	2.60
	10/31/2014	4.7 J	12	5.0 U	-46	7.77	1.60
	4/23/2015	1.8 J	5.0 U	2.0 U	141	11.07	NM

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MW-85D2 <sup>(2)</sup> (cont'd)	10/20/2015 <sup>(5)</sup>	1.0 J	4.3 J	2.0 U	NM	NM	NM
	4/25/2016	2.3 J	5.4	2.0 U	174	5.79	0.24
	10/18/2016	11	21	4.9J	27	9.45	NM
	4/25/2017	2.4	4.6	1.0U	109	4.88	0.00
	10/16/2017 <sup>(5)</sup>	4.2	5.6	1.0U	NM	NM	NM
	4/20/2018	4.17	8.04	1.0U	90	8.75	NM
	11/12/2018	2.31	4.9	1.0U	152	3.99	4.44
	4/23/2019	2	5	1.0U	172	8.85	0.00
	10/15/2019	4.1	7.4	1.0U	199	9.92	NM
MW-86D1 <sup>(2)</sup>	4/18/2011	2.7 J	5.0 U	14	-107	0.74	2.0
	10/24/2012	2.4 J	0.66 J	36	67	>20	0.68
	2/6/2013	6.3	5.0 U	44	87	14.5	1.0
	4/29/2013	6	1.5 J	62	135	5.99	2.5
	7/24/2013	3.1 J	1.3 J	24	-103	2.61	0.0
	10/29/2013 <sup>(5)</sup>	5	1.8 J	78	NM	NM	NM
	1/23/2014	6.7	1.6 J	150	27	14.90	NM
	4/29/2014	8.2	1.3 J	160	25	3.56	0.1
	7/17/2014	9.5	0.89 J	180	-102	4.35	3.0
	10/31/2014	13	1.3 J	110	39	6.42	0.0
	4/24/2015	6.4	5.0 U	33	-37	7.48	0.1
	10/26/2015	3.0 J	5.0 U	2.0 U	-59	10.56	0.6
	4/28/2016	2.3 J	5.0 U	2.0 U	56	0.46	0.2
	10/21/2016	5.0UJ	5.0U	2.0UJ	87	1.30	0.1
	4/28/2017	1.1J	1.0U	1.0U	46	6.08	0.1
	10/20/2017	1.2	1.0J	1.0U	175	11.97	0.0
	4/24/2018	1.61	1.55	1.0U	126	0.00	>5
	11/8/2018	2.18	4.70	1.0U	38	1.52	4.5
	4/25/2019	2	2	1.0U	39	13.73	0.0
	10/16/2019	2.8	1.1	1.0U	322	7.22	5.0
MW-86D2 <sup>(2)</sup>	4/18/2011	19	280	5.0 U	-107	1.24	3.0
	10/24/2012	8.2	170	5.0 U	-115	2.49	0.39
	2/6/2013	17	370	0.54 J	-45	13.05	2.0
	4/29/2013	17	320	0.51 J	-64	5.44	3.4
	7/24/2013	13	270	5.0 U	-165	0.93	1.8
	10/29/2013	10	200	5.0 U	-43	4.30	0.0
	1/23/2014	14	240	5.0 U	-101	12.18	0.0
	4/29/2014	17	230	5.0 U	168	5.83	0.0
	7/17/2014 <sup>(5)</sup>	15	170	0.79 J	NM	NM	NM
	10/31/2014	12	180	5.0 U	39	6.63	0.7
	4/24/2015	9.9	130	2.0 U	-89	10.90	0.0
	10/26/2015	7.4	83	2.0 U	-59	8.69	0.1
	4/28/2016	9.8	58	2.0 U	24	2.12	0.5
	10/21/2016	12	62	2.0UJ	-77	0.00	0.0
	4/28/2017	28J	71J	1.0U	-125	1.35	0.5
	10/20/2017	29	150	2.0U	-10	0.00	0.0
	4/24/2018	11	153	5.0U	NM	NM	NM
	11/8/2018	10.7	141	1.0U	152	1.31	3.2
	4/25/2019	6	75	1.0U	-72	13.12	0.0
	10/16/2019	4.3	55	1.0U	216	1.35	5.0
MW-87D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	234	0.70	0.17
	10/25/2006	NA	NA	NA	221	0.00	0.35
	10/26/2006	96 J	320	230	226	2.63	0.05
	1/24/2007	74	410	220	248	0.78	0.10
	4/17/2007	56	470	160	169	0.00	0.14
	7/17/2007	83	400	190	223	0.44	0.09

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MW-87D1 <sup>(1)</sup> (cont'd)	10/8/2007	37	190	190	203	4.39	0.40
	4/16/2008	52	240	4	322	8.35	0.05
	10/21/2008	99	360	10	463	>20	0.00
	4/7/2009	10	22	5.0 U	289	8.62	0.00
	10/13/2009	100	410	16	379	16.18	0.17
	5/3/2010	170/170	360/330	41/44	282	5.74	0.0
	11/29/2010	5.0 U/3.8 J	4.8 J/17	5.0 UJ/5.0 UJ	192	2.75	0.0
	4/19/2011	150	420	250	300	3.72	0.0
	11/30/2011	95	300	3.2 J	NM	13.98	NM
	5/24/2012	73 J	270	75	149	11.51	1.4
	11/5/2012	53	290	2.1 J	105	>20	1.6
	5/2/2013 <sup>(5)</sup>	43	160	1.4 J	NM	NM	NM
	10/28/2013	26	36	5.0 U	-67	13.76	0.1
	4/29/2014	88	58	2.2 J	201	8.53	0.0
	7/21/2014	140	22	5.0 U	177	13.90	1.4
	10/31/2014	150	19	5.0 U	123	12.91	1.3
	4/24/2015	130	23	2.0 U	-75	19.54	1.7
	10/22/2015	130	18	2.0 U	179	8.49	3.8
	4/26/2016	99	11	2.0 U	71	9.20	0.2
	10/21/2016	66	10	2.0UJ	168	9.77	0.5
	4/26/2017	69	12	1.0U	163	12.35	0.4
	10/19/2017	49	4.3	1.0U	215	31.89	0.0
	4/19/2018	49	9.14	1.0U	238	17.12	2.9
	11/5/2018	57.4	27	1.0U	195	15.79	0.0
	4/26/2019	40	20	1.0U	191	14.49	0.0
	10/16/2019	21.1	8.3	1.0U	256	12.10	2.6
MW-87D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	212	4.00	0.08
	10/25/2006	NA	NA	NA	137	6.68	0.09
	10/26/2006	13	77	5 U	226	4.53	0.02
	1/24/2007	25	96	5 U	131	3.64	0.25
	4/17/2007	14	56	5 U	106	3.89	0.09
	7/16/2007	16	54	2 U	145	3.31	0.07
	10/9/2007	14	32	2 U	287	7.45	0.12
	4/16/2008	12	23	2 U	288	5.39	0.01
	10/21/2008	17	31	2 U	440	9.66	0.00
	4/7/2009	76	370	5.0 U	346	9.90	0.06
	10/13/2009	15	43	5.0 U	341	5.30	0.26
	5/5/2010	18	55	5.0 U	222	4.15	NM
	11/15/2010	35	470	2.7 J	397	12.41	0.0
	4/18/2011	22	75	5.0 U	234	3.46	0.0
	11/30/2011	18	110	5.0 U	NM	11.08	NM
	5/24/2012	16 J/15 J	180/180	5.0 U/5.0 U	NM	NM	2.1
	11/5/2012	25	170	5.0 U	86	>20	1.0
	5/2/2013	35	170	5.0 U	312	15.02	2.2
	10/28/2013	150	150	5.0 U	9	4.86	0.4
	4/29/2014	200	110	5.0 U	160	5.63	0.0
	7/21/2014	420	98	5.0 U	206	7.98	0.0
	10/31/2014	380	120	5.0 U	149	10.72	3.1
	4/24/2015	300	100	2.0 U	172	14.19	2.8
	10/22/2015	470	150	2.0 U	184	7.70	0.5
	4/26/2016	420	170	5.0 U	231	3.15	0.5
	10/21/2016 <sup>(5)</sup>	NA	NA	NA	168	3.61	NM
4/26/2017	940	120	1.0U	154	4.60	0.1	
10/19/2017	909	165	20U	199	2.83	0.0	
4/19/2018 <sup>(5)</sup>	834	64.4	20U	NM	NM	NM	
11/5/2018	731	85.7	1.0U	277	2.89	0.1	
4/26/2019	990	100	1.0U	210	11.76	0.0	
10/16/2019	1000	85.4	1.0U	228	3.24	1.9	

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MW-88D1 <sup>(1)</sup>	10/24/2006	NA	NA	NA	-43	0.00	11.04
	10/25/2006	NA	NA	NA	-13	0.00	10.20
	10/26/2006	39 J	9	58	33	3.36	6.56
	1/30/2007	36	7	74	-45	1.16	2.01
	4/19/2007	32	13	330	172	11.88	1.84
	7/26/2007	37	28 J	1500	232	9.48	0.74
	10/16/2007	66	270	1100	3	0.02	5.47
	4/25/2008	20	27	310	225	5.95	0.52
	10/30/2008	40	29	320	339	>20	0.00
	4/13/2009	27	17	410	205	16.71	0.31
	10/21/2009	18/14	24/24	510/330	253	>20	0.47
	5/11/2010	28	32	320	177	19.00	0.50
	11/17/2010	14	20	440	366	13.04	0.0
	4/15/2011	19	19	160	184	14.39	0.0
	12/1/2011	15	20	11	NM	17.16	NM
	5/24/2012	5.4 J	14	11	65	8.82	0.0
	10/26/2012	12	17	8.2	83	10.88	1.15
	5/1/2013	5.4	6.8	0.92 J	202	13.77	1.22
	10/28/2013 <sup>(5)</sup>	12	12	3.2 J	NM	NM	NM
	4/25/2014	8.7	14	1.1 J	197	8.44	0.06
	10/30/2014	12 J	26 J	3.1 J	82	12.59	0.31
	4/24/2015	19	26	2.1	150	14.59	NM
	10/21/2015	16	23	2.0 U	31	9.74	5.00
	4/26/2016	14	17	1.2 J	136	9.45	0.36
	10/19/2016	21	14	2.0UJ	29	12.12	0.00
	4/25/2017	14	4.9	1.0U	63	6.65	0.45
	10/17/2017	11	5.4	1.4	143	17.94	0.00
	4/20/2018	10.1	3.8	0.51J	163	16.54	1.43
	11/8/2018	7.5	2.67	1.0U	83	6.67	0.14
	4/24/2019	7	2	1.0U	90	15.02	0.00
	10/17/2019	9.1	2.9	1.0U	139	13.33	2.46
MW-88D2 <sup>(1)</sup>	10/24/2006	NA	NA	NA	-282	1.44	18.96
	10/25/2006	NA	NA	NA	-253	1.97	11.40
	10/26/2006	140 J	180	3200	-212	0.00	NM
	1/25/2007	180/190	180/190	3400/2900	-315	0.82	0.16
	4/19/2007	390	330	1200	-219	0.37	2.17
	7/26/2007	97/94	57 J/56 J	2000/1800	-333	0.44	1.21
	10/16/2007	41	25	31	-291	3.04	9.39
	4/25/2008	280 J	130	230	40	8.02	2.65
	10/31/2008	250	83 J	230	45	8.94	2.70
	4/14/2009	200	86	59	41	9.94	0.98
	10/20/2009	47	43	130	-3	4.67	4.49
	5/11/2010	130	85	81	-5	5.70	0.50
	1/20/2011	56	22	160 J	232	5.58	0.00
	4/19/2011	27	10	170	-585	3.35	0
	12/1/2011	24	12	110	NM	9.81	NM
	5/24/2012	1.7 J	1.7 J	91	22	5.73	0
	10/26/2012	1.7 J	0.82 J	5.0 U	NM	NM	NM
	5/1/2013	14	17 J	38 J	154	11.30	1.56
	10/28/2013	5.0 U	5.0 U	5.0 U	52	12.83	0.46
	4/25/2014	5.0 U	5.0 U	0.85 J	62	2.83	0.00
	10/30/2014	19 J	16 J	5.0 U	91	14.22	0.86
	4/24/2015	15	11	2.0 U	26	8.59	NM
	10/21/2015	15	9.7	2.0 U	-44	9.18	5.00
4/26/2016	9.2	8.3	2.0 U	67	1.56	0.0	
10/19/2016 <sup>(5)</sup>	NA	NA	NA	-16	0.95	NM	
4/25/2017	13	11	1.0U	123	8.05	0.3	

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MW-88D2 <sup>(1)</sup> (cont'd)	10/17/2017	17	16	1.0U	-51	0.00	0.1
	5/4/2018	41.5	34.1	0.44	NM	NM	NM
	11/8/2018	13.2	24.1	1.0U	2	2.14	2.2
	4/24/2019	14	22	1.0U	30	8.43	0.2
	10/17/2019	6.9	11.1	1.0U	38	1.72	2.5
MW-89D1 <sup>(2)</sup>	4/21/2011	37	47	63	-142	1.57	6.0
	10/24/2012	2.9 J	5.0 U	6.7	17	9.68	0.0
	2/6/2013	20	10	25	-70	8.99	0.0
	4/29/2013	12	8.3	60	-125	5.49	3.8
	7/24/2013	6.9	3.1 J	31	-198	0.43	1.8
	10/28/2013	6.2	2.8 J	51	-52	2.56	0.5
	1/27/2014	15	14	72	239	12.43	NM
	4/24/2014	7.2	3.5 J	22	-88	3.67	0.0
	7/17/2014	17	7.3	19	-45	2.42	3.6
	10/31/2014	37	23	4.6 J	51	19.08	>5.0
	4/23/2015	37	26	6.9	101	7.52	NM
	10/20/2015	12	8.2	4.3	21	22.43	1.5
	4/25/2016	8.9	12	4.2	-10	2.00	0.1
	10/18/2016	18	20	7.9J	-21	0.00	0.2
	4/25/2017 <sup>(5)</sup>	16	19	9	NM	NM	NM
	10/16/2017	17	14	3.8	69	1.46	0.1
	4/20/2018 <sup>(5)</sup>	16.8	18.4	4.8	NM	NM	>5
	1/12/2018	25	13.7	0.98J	70	1.98	4.7
4/23/2019	13	12	0.7J	156	4.23	0.0	
10/15/2019	14.9	13.9	2	226	4.89	5.0	
MW-89D2 <sup>(2)</sup>	4/21/2011	27	16	24	-154	2.43	1.0
	10/24/2012	1.7 J	2.4 J	21	-95	10.73	0.0
	2/6/2013	5	4.6 J	20	-122	10.05	0.0
	4/29/2013	1.2 J	1.9 J	26	-244	4.49	3.0
	7/24/2013	1.1 J	2.1 J	12	-250	0.75	2.7
	10/28/2013	1.6 J	2.4 J	13	-63	9.45	0.8
	1/27/2014 <sup>(5)</sup>	2.7 J	4.0 J	12	NM	NM	NM
	4/24/2014	1.8 J	2.7 J	6.1	-27	4.26	0.0
	7/17/2014	3.9 J	5.6	3.7 J	-40	2.13	2.0
	10/31/2014	5.8	9.4	6.5	6	12.01	1.8
	4/23/2015 <sup>(5)</sup>	10	13	2.3	NM	NM	NM
	10/20/2015	5.7	9.4	2.0 U	-72	19.70	2.2
	4/25/2016	6.7	6.0	2.0 U	-30	0.27	0.4
	10/18/2016	13	8.3	2.0UJ	-119	0.66	0.0
	4/25/2017	8.4	6.6	1.0U	134	20.49	0.0
	10/16/2017	10	6.5	1.0U	82	1.03	0.0
	4/20/2018	6.89	5.31	0.53J	105	1.24	>5
	11/12/2018	5.79	5.26	1.0U	37	4.70	3.7
4/23/2019	8	7	0.6J	128	12.08	0.1	
10/15/2019	6.7	5.9	1.0U	72	2.11	NM	
MW-90D1 <sup>(2)</sup>	4/25/2007	110	44	6300	-100	0.93	2.30
	4/13/2011	29	12	4100	-103	0.34	NM
	10/25/2012 <sup>(5)</sup>	2.0 J	5.0 U	810	NM	NM	NM
	2/6/2013 <sup>(5)</sup>	27	6.7	2500	NM	NM	NM
	4/30/2013 <sup>(5)</sup>	3.9 J	2.3 J	780	NM	NM	NM
	7/23/2013 <sup>(5)</sup>	32	16	290	NM	NM	NM
	10/25/2013 <sup>(5)</sup>	22	13	84	NM	NM	NM
	1/23/2014 <sup>(5)</sup>	17	18	1600	NM	NM	NM
4/23/2014 <sup>(5)</sup>	42	24	600	NM	NM	NM	

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-90D1 <sup>(2)</sup> (cont'd)	7/18/2014 <sup>(5)</sup>	33	11	27	NM	NM	NM
	10/21/2014 <sup>(5)</sup>	16	9.9	37	NM	NM	NM
	4/24/2015 <sup>(5)</sup>	25	9.6	3.0	NM	NM	NM
	10/23/2015 <sup>(5)</sup>	23	9.5	1.9 J	NM	NM	NM
	4/27/2016 <sup>(5)</sup>	5.0 U	8.4	2.0 U	NM	NM	NM
	10/21/2016 <sup>(5)</sup>	21	9.6	2.0UJ	NM	NM	NM
	5/11/2017 <sup>(5)</sup>	30	8.2	1.0U	NM	NM	NM
	10/19/2017 <sup>(5)</sup>	17	5.8	0.6J	NM	NM	NM
	4/26/2018 <sup>(5)</sup>	14.8	5.78	1.0U	NM	NM	NM
	11/6/2018	10.6	4.59	1.0U	NM	NM	NM
	4/25/2019	4	2	1.0U	NM	NM	NM
	10/14/2019	5.6	4.7	1.0U	NM	NM	NM
	MW-90D2 <sup>(2)</sup>	4/25/2007	46	220 J	49	-47	1.38
5/17/2010		26	68	2.1 J	-112	0.00	2.5
4/14/2011		33	51	1.2 J	12	4.03	1.0
2/6/2013 <sup>(5)</sup>		120	37	3.1 J	NM	NM	NM
4/30/2013 <sup>(5)</sup>		57	25	1.8 J	NM	NM	NM
7/23/2013 <sup>(5)</sup>		43	29	5.0 U	NM	NM	NM
10/25/2013 <sup>(5)</sup>		44	23	5.0 U	NM	NM	NM
1/23/2014 <sup>(5)</sup>		39	25	2.9 J	NM	NM	NM
4/23/2014 <sup>(5)</sup>		37	26	1.5 J	NM	NM	NM
7/18/2014 <sup>(5)</sup>		22	22	5.0 U	NM	NM	NM
10/21/2014 <sup>(5)</sup>		6.1	3.5 J	5.0 U	NM	NM	NM
4/24/2015 <sup>(5)</sup>		26	21	2.0 U	NM	NM	NM
10/23/2015 <sup>(5)</sup>		74	23	2.0 U	NM	NM	NM
4/27/2016 <sup>(5)</sup>		27	11	2.0 U	NM	NM	NM
10/21/2016 <sup>(5)</sup>		6	6.9	2.0UJ	NM	NM	NM
4/27/2017 <sup>(5)</sup>		11	8.2	1.0U	NM	NM	NM
10/19/2017 <sup>(5)</sup>		12	6.6	1.0U	NM	NM	NM
4/26/2018 <sup>(5)</sup>		13	5.1	1.0U	NM	NM	NM
11/6/2018	19	11.3	1.0U	NM	NM	NM	
4/25/2019	17	12.0	1.0U	NM	NM	NM	
10/14/2019	17	16.1	1.0U	NM	NM	NM	
<b>Voluntary Wells</b>							
MW-52S	3/13/2007	25	19	2400	5	1.64	1.66
MW-52I	3/14/2007	14	5	6	259	5.85	0.04
MW-52D	3/14/2007	410	39	5 U	226	3.07	0.11
MW-58D	10/26/2006	20	120	5 U	21	2.42	4.30
	5/18/2010	18	47	5.0 U	30	0.00	1.8
	11/21/2011	8.6	56	5.0 U	74	0.30	NR
	5/23/2013	15 J	110	5.0 U	167	5.94	2
	11/14/2014 <sup>(5)</sup>	500 U	6500	500 U	NM	NM	NM
	6/2/2016	28	6300	2.0 U	-44	9.46	0.0
	11/2/2016	38J	5000	2.0U	-12	0.00	0.1
	4/26/2017 <sup>(5)</sup>	51	5200	1.0U	NM	NM	NM
	10/17/2017 <sup>(5)</sup>	59	3670	50U	NM	NM	NM
	4/24/2018 <sup>(5)</sup>	56	2370	50U	NM	NM	NM
	11/20/2018	17.9	319	1.0U	91	1.31	>5
5/8/2019	36	750	1.0U	151	6.35	0	
10/27/2019	18.3	357	1.0U	153	2.35	4.02	

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-58D1	10/26/2006	20	150	5 U	-101	2.58	8.80
	5/19/2010	18	44	5.0 U	-50	0.00	2.2
	11/21/2011	2.5 J	20	5.0 U	-48	0.52	NR
	5/23/2013 <sup>(5)</sup>	12 J	73	5.0 U	NM	NM	NM
	11/14/2014 <sup>(5)</sup>	250 U	4300	250 U	NM	NM	NM
	6/2/2016	34	5800	2.0 U	-25	10.58	0.1
	11/2/2016	32J	4400	2.0U	46	0.00	1.6
	4/26/2017	51	4600	1.0U	-96	NM	0.0
	10/17/2017 <sup>(5)</sup>	60	3300	50U	NM	NM	NM
	4/24/2018	59	2300	50U	NM	NM	NM
	11/20/2018	23.9	522	1.0U	151	3.26	2.6
	5/8/2019	32	750	1.0U	-77	6.35	0.0
	10/27/2019	18.7	244	1.0U	86	4.28	2.2
MW-58D2	10/25/2006	19 J	120	5 U	-198	0.00	5.16
	4/29/2013	13	74	5.0 U	-81	7.70	3.87
	10/24/2014	20	4900	5.0 U	-10	20.87	0.00
	5/18/2016	38	7600	2.0 U	47	9.57	0.22
	10/19/2016	37	3200	2.0UJ	-46	0.00	0.72
	5/11/2017 <sup>(5)</sup>	44	2400	1.0U	NM	NM	0.00
	11/1/2017	83	4100	1.0U	64	1.69	0.52
	5/22/2018 <sup>(5)</sup>	55	1910	50U	NM	NM	4.62
	11/5/2018	115	436	5.0U	253	4.40	0.10
	4/23/2019	37	319	2.0U	139	8.64	1.04
	10/13/2019	16.5	237	1.0UJ	-123	5.04	5.00
MW-59D1	10/25/2006	10 J	32	5 U	-20	0.58	3.24
	11/29/2011	3.5 J	12	5.0 U	-43	0.30	NR
MW-59D2	10/25/2006	11 J	40	5 U	-99	0.47	2.00
	11/29/2011	2.5 J	8.1	5.0 U	-128	0.10	NR
	5/18/2016 <sup>(5)</sup>	5.0 U	5.5	2.0 U	NM	NM	NM
	10/19/2016	5.0U	5.7	2.0UJ	-137	1.01	0.14
	4/26/2017	1.0U	4.7	1.0U	-114	2.52	0.00
	10/19/2017	0.6J	4.4	1.0U	-64	1.59	0.14
	4/24/2018 <sup>(5)</sup>	1.0U/1.0U	3.97/3.92	1.0U/1.0U	NM	NM	NM
	11/5/2018	0.33J	1.57	1.0U	42	3.18	0.08
	4/23/2019	1.0U	1	1.0U	77	13.08	0.26
10/13/2019	1.0U	1.0U	1.0U	-32	0.46	2.73	
MW-59D	10/26/2006	10	58	5 U	-108	0.00	2.65
	11/29/2011	5.3	13	5.0 U	49	0.35	NR
MW-60S	5/23/2013	45	150	5.0 U	-233	4.74	>5.0
MW-60I	5/23/2013	43	200	5.0 U	-93	3.77	>5.0
MW-60D	5/23/2013	64	99	5.0 U	-204	4.60	2.43
MW-60D1	4/30/2013	1.6 J	26	5.0 U	-108	5.84	>5.0
MW-61S	10/19/2009	7.4	10	5.0 U	372	>20	0.02
	5/10/2010	5.4	8.1 U	3.5 J	100	10.95	0.0
MW-62I	5/16/2007	5.1	1 J	3 J	59	0.00	0.69
	5/25/2010	5.1 J	5.0 U	4.2 J	14.8	0.00	4.2
	11/16/2015 <sup>(5)</sup>	14	3.4 J	8.9	NM	NM	2.5
	10/18/2017	13	2.9	7.9	145	0.00	0.0

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
MW-62D	5/16/2007	5 U	5 U	5 U	-125	0.00	0.38
	5/25/2010	2.4 J	8.2	8	-200	0.00	6.2
	11/16/2015	2.5 J	2.0 J	2.3	116	10.94	0.0
	10/18/2017	1.5	2.2	3.7	-25	0.00	0.0
MW-64S <sup>(2)</sup>	4/26/2007	3 J	2 J	8.7	-114	0.00	2.4
	5/24/2010	1.5 J	5.0 U	2.1 J	-98	0.00	4.0
MW-64I <sup>(2)</sup>	4/26/2007	5	3 J	16	-121	0.00	1.9
	5/24/2010	5.0 UJ	5.0 U	12	-110	0.00	4.0
MW-64D <sup>(2)</sup>	4/26/2007	5.1	4 J	14	-115	0.00	2.0
	5/24/2010	5.0 UJ	5.0 U	11	-107	0.00	2.3
MW-66D2 <sup>(2)</sup>	4/25/2013	100	110	5.0 U	-44	6.58	0.2
	10/29/2013	43	58	5.0 U	-111	3.88	0.3
	4/25/2014	47	61	5.0 U	53	4.55	0.7
	10/27/2014	22	25	5.0 U	166	3.42	2.8
	4/23/2015	10	15	2.0 U	161	13.98	NM
	10/21/2015 <sup>(5)</sup>	5.8	10	2.0 U	NM	NM	NM
	4/25/2016	2.9 J	8.0	2.0 U	-4	13.29	0.2
	10/18/2016	1.4J	2.2J	2.0UJ	35	0.02	NM
	4/26/2017	1.0U	1.0U	1.0U	190	11.67	0.8
	10/16/2017	0.6J	0.9J	1.0U	137	7.45	0.2
	4/24/2018	3.8	6.9	1.0U	223	19.44	3.2
	11/5/2018	10.9	12.0	1.0U	84	6.40	NM
	4/23/2019	27	24.0	0.7J	177	8.12	0.1
	10/13/2019	8.4	13.4	1.0UJ	275	9.61	5.0
MW-67S <sup>(2)</sup>	5/20/2010	26/27	37/39	87/95	-170	0.00	7.0
	11/22/2011	1.5 J	8.7	47	-35	0.14	NR
	4/25/2013	2.8 J	19	140	45	5.14	1.9
	10/29/2013	4.6 J	16	100	-161	2.49	1.0
	4/25/2014	4.9 J	9.6	38	77	2.76	0.0
	10/24/2014 <sup>(5)</sup>	18	19	6.2	NM	NM	NM
	4/23/2015	6	5.4	2.0 U	155	12.71	0.4
	10/21/2015	1.7 J	2.5 J	2.0 U	177	11.68	NM
	4/25/2016	58	44	2.0 U	104	20.69	0.7
	10/19/2016	41	66	2.0UJ	26	0.29	0.2
	4/26/2017	67	61	1.0U	100	4.02	NM
	10/16/2017	60	66	0.7J	87	2.77	0.0
	4/24/2018	43.8	53.4	1.0U	243	9.39	1.6
	11/5/2018	51.3	51.4	1.21	NM	NM	NM
4/23/2019	2	0.6J	1.0U	152	7.11	0.2	
10/13/2019	1.0U	1.0	1.0U	141	0.00	4.2	
MW-67D <sup>(2)</sup>	5/20/2010	74/73	280/280 J	5.0 U/5.0 U	-187	1.30	0.2
	11/22/2011	6.2	58	5.0 U	129	2.97	NR
	4/25/2013	8.6	32	5.0 U	45	11.98	1.9
	10/29/2013	11	36	5.0 U	-204	3.78	0.0
	4/25/2014	4.8 J	25	5.0 U	2	5.35	0.0
	10/24/2014 <sup>(5)</sup>	1.4 J	4.3 J	5.0 U	NM	NM	NM
	4/23/2015	2.9 J	5.0 U	2.0 U	-274	9.51	NM
	10/21/2015 <sup>(5)</sup>	5.0 U	2.1 J	2.0 U	NM	NM	NM

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MW-67D <sup>(2)</sup> (cont'd)	4/25/2016	5.0 J	1.2 J	2.0 U	53	4.62	0.3
	10/19/2016	5.0U	5.0U	2.0UJ	50	2.37	0.1
	4/26/2017	1.0U	2.1	1.0U	2	3.25	0.5
	10/16/2017	0.7J	0.8J	1.0U	NM	0.00	0.0
	4/24/2018	1.0U	1.0U	1.0U	NM	NM	NM
	11/5/2018	1.0U	0.4J	1.0U	8	2.62	NM
	4/23/2019	1.0U	1.0U	1.0U	139	6.83	0.1
	10/13/2019	1.0U	1.0U	1.0UJ	71	0.77	5.0
MW-68S <sup>(2)</sup>	11/28/2011	83	110	690	-107	0.05	NR
	4/25/2013	11	27	940	-190	6.84	1.9
	10/29/2013	6.8	11	580	-128	3.58	1.0
	4/25/2014	99	81	270	-50	2.49	0.0
	10/24/2014	67	93	400	68	21.08	0.0
	4/23/2015	77	110	2.0 U	-15	15.09	NM
	10/21/2015	65	110	260	47	9.22	NM
	4/25/2016	62	100	220	1	24.40	0.0
	10/19/2016	87	120	230J	-201	0.47	0.1
	4/26/2017 <sup>(5)</sup>	50	83	190	NM	NM	NM
	10/16/2017	87	93	143	-163	0.00	0.2
	4/24/2018	60.4	84.4	66	163	3.39	0.5
	1/5/2018	67.4	83.3	27.9J	-36	1.79	1.5
	4/23/2019	58	84	42	-97	4.72	0.0
10/13/2019	18.4	28.2	5.2J	-81	0.00	1.6	
MW-68D <sup>(2)</sup>	5/19/2010	320	970	34	-29	0.00	2.4
	11/28/2011	47	290	1.2 J	-38	0.97	NR
	4/25/2013	36	160	1.3 J	-174	5.88	0.7
	10/29/2013	19	78	5.0 U	-91	4.12	0.2
	4/25/2014	7.3	47	5.0 U	-71	5.27	0.0
	10/24/2014	2.2 J	14	5.0 U	36	12.79	0.0
	4/23/2015 <sup>(5)</sup>	1.8 J	6.8	1.0 J	NM	NM	NM
	10/21/2015 <sup>(5)</sup>	1.7 J	5.9	2.0 U	NM	NM	NM
	4/25/2016	5.0 U	4.3 J	2.0 U	37	9.21	0.0
	10/19/2016	5.0U	4.6J	2.0UJ	-39	0.50	0.0
	4/26/2017	1.0U	4.7	1.0U	18	4.64	NM
	10/16/2017	2.5	5.4	1.0U	82	0.00	0.6
	4/24/2018	2.54	8.1	1.0U	NM	NM	>5.0
	11/5/2018	3.75	9.34	1.0U	0	1.59	0.0
4/23/2019	3	13	1.0U	83	7.22	0.2	
10/13/2019	5.9	20.3	1.0UJ	121	4.38	5.0	
MW-92D1	4/12/2011	5.7	1.3 J	100	-190	1.13	4.0
	4/24/2013	3.7 J	6.2	79	12	6.57	3.0
	10/27/2014	3.4 J	4.6 J	51	-18	2.62	4.1
	10/23/2015	3.9 J	6.2	42	32	6.61	1.0
	10/18/2017	2.4	6.8	24	-105	0.00	0.0
	10/17/2019	1.0U	3.9	14.7	-92	0.88	5.0
MW-92D2	4/25/2011	690	12	5.0 U	-156	2.00	1.5
	4/24/2013	280	17	5.0 U	-104	5.52	>5.0
	10/27/2014	92	8.2	5.0 U	-120	2.20	75.0
	10/23/2015	30	5.4	2.0 U	-77	8.07	0.1
	10/18/2017	18	2.4	1.0U	-91	0.00	0.4
	10/17/2019	29.9	4.3	1.0U	-100	2.30	5.0

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<b>Well</b>	<b>Date Sampled</b>	<b>PCE (µg/L)</b>	<b>TCE (µg/L)</b>	<b>VCM (µg/L)</b>	<b>ORP (mV)</b>	<b>DO (mg/L)</b>	<b>Fe<sup>+2</sup> (mg/L)</b>
MW-93D1	4/26/2011	21	3.7 J	190	-191	2.18	2.5
	4/24/2013	14	4.5 J	20	-140	5.16	2.2
	10/27/2014	16	2.3 J	7.0	33	3.10	2.3
	10/23/2015	8	1.2 J	3.8	11	9.79	0.2
	10/18/2017	1.4	0.5J	1.0U	-94	0.00	0.4
	10/17/2019	1.0U	1.0U	1.0U	6	2.68	4.2
MW-93D2	4/26/2011	110	15	5.0 U	-219	2.96	2.0
	4/23/2013	24	21	5.0 U	-105	4.58	4.5
	10/27/2014	1.0 J	5.0 U	5.0 U	-12	2.98	3.4
	10/23/2015	5.0 U	5.0 U	2.0 U	-105	9.40	0.0
	10/18/2017	13	1.2	1.5	-77	3.48	0.4
	10/17/2019	1.0U	1.0U	1.0U	NM	NM	NM
<b>Northrop Wells</b>							
GP-1 (Well 1)	9/25/2006	NR	NA	ND	NR	NR	NR
	10/23/2006	NR	NA	ND	NR	NR	NR
	11/13/2006	NR	NA	ND	NR	NR	NR
	12/18/2006	NR	634	ND	NR	NR	NR
	1/15/2007	NR	547	ND	NR	NR	NR
	2/12/2007	NR	373	ND	NR	NR	NR
	3/12/2007	NR	439	ND	NR	NR	NR
	4/16/2007	NR	473	ND	NR	NR	NR
	5/14/2007	NR	587	ND	NR	NR	NR
	6/18/2007	NR	414	ND	NR	NR	NR
	7/23/2007	NR	410	ND	NR	NR	NR
	8/13/2007	NR	333	ND	NR	NR	NR
	9/11/2007	NR	452	ND	NR	NR	NR
	10/15/2007	NR	285	ND	NR	NR	NR
	11/12/2007	NR	428	ND	NR	NR	NR
	12/18/2007	NR	371	ND	NR	NR	NR
	1/14/2008	NR	273	ND	NR	NR	NR
	2/18/2008	NR	373	ND	NR	NR	NR
	3/17/2008	NR	212	ND	NR	NR	NR
	4/14/2008	NR	233	ND	NR	NR	NR
	5/19/2008	NR	195	ND	NR	NR	NR
	6/16/2008	NR	113	ND	NR	NR	NR
	7/15/2008	NR	353	ND	NR	NR	NR
	8/18/2008	NR	54	ND	NR	NR	NR
	9/22/2008	NR	78	ND	NR	NR	NR
	10/13/2008	NR	78	ND	NR	NR	NR
	11/18/2008	NR	145	ND	NR	NR	NR
	12/16/2008	NR	82	ND	NR	NR	NR
	1/05/2009	NR	106	ND	NR	NR	NR
	2/16/2009	NR	186	ND	NR	NR	NR
3/16/2009	NR	202	ND	NR	NR	NR	
4/13/2009	NR	203	ND	NR	NR	NR	
5/18/2009	NR	217	ND	NR	NR	NR	
6/15/2009	NR	93	ND	NR	NR	NR	
7/21/2009	NR	156	ND	NR	NR	NR	
8/18/2009	NR	126	ND	NR	NR	NR	
9/16/2009	NR	112	ND	NR	NR	NR	
10/20/2009	NR	132	ND	NR	NR	NR	
11/16/2009	NR	173	ND	NR	NR	NR	

**Select Laboratory and Field Parameter Results  
Operable Unit 3  
Hooker/Ruco Site  
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)	
GP-1 (Well 1) (cont'd)	12/4/2009	NR	151	ND	NR	NR	NR	
	1/18/2010	NR	106	ND	NR	NR	NR	
	2/15/2010	NR	108	ND	NR	NR	NR	
	3/15/2010	NR	149	ND	NR	NR	NR	
	4/20/2010	NR	368	ND	NR	NR	NR	
	7/28/2010	NR	NA	ND	NR	NR	NR	
	8/20/2010	NR	101	ND	NR	NR	NR	
	5/08/2012	48	410	ND	NR	NR	NR	
	12/11/2012	51	410	ND	NR	NR	NR	
	2/18/2013	49	360	ND	NR	NR	NR	
	6/06/2013	48	380	ND	NR	NR	NR	
	8/21/2013	48/44	400/390	ND/ND	NR	NR	NR	
	2/24/2014	39	400	ND	NR	NR	NR	
	6/10/2014	40	490	ND	NR	NR	NR	
	9/11/2014	35	730	ND	NR	NR	NR	
	11/13/2014	39	695	ND	NR	NR	NR	
	3/16/2015	41	713	ND	NR	NR	NR	
	5/05/2015	31	748	ND	NR	NR	NR	
	9/09/2015	35	852	ND	NR	NR	NR	
	12/12/2015	31	768	ND	NR	NR	NR	
	3/14/2016	30	792	ND	NR	NR	NR	
	5/12/2016	24	615	ND	NR	NR	NR	
	8/17/2016	28	838	ND	NR	NR	NR	
	12/15/2016	22	703	ND	NR	NR	NR	
	2/22/2017	28	702	ND	NR	NR	NR	
	9/12/2017	22	603	ND	NR	NR	NR	
	5/10/2018	20	631	ND	NR	NR	NR	
	2/13/2019	17	589	ND	NR	NR	NR	
	8/6/2019	17	546	ND	NR	NR	NR	
	GP-3 (Well 3R)	09/25/2006	NR	NR	100	NR	NR	NR
		10/23/2006	NR	NR	122	NR	NR	NR
		11/13/2006	NR	NR	143	NR	NR	NR
		12/18/2006	NR	3968	148	NR	NR	NR
1/15/2007		NR	3038	121	NR	NR	NR	
2/12/2007		NR	2545	81	NR	NR	NR	
3/12/2007		NR	2200	74	NR	NR	NR	
4/16/2007		NR	2476	49	NR	NR	NR	
5/14/2007		NR	3107	144	NR	NR	NR	
6/18/2007		NR	2268	92	NR	NR	NR	
7/23/2007		NR	2900	128	NR	NR	NR	
8/13/2007		NR	1964	113	NR	NR	NR	
9/11/2007		NR	2013	114	NR	NR	NR	
10/15/2007		NR	2080	117	NR	NR	NR	
11/12/2007		NR	2123	113	NR	NR	NR	
12/18/2007		NR	2264	130	NR	NR	NR	
1/14/2008		NR	1655	109	NR	NR	NR	
2/18/2008		NR	1472	143	NR	NR	NR	
3/17/2008		NR	1700	146	NR	NR	NR	
4/14/2008		NR	1717	130	NR	NR	NR	
5/19/2008		NR	985	81	NR	NR	NR	
6/16/2008		NR	1196	86	NR	NR	NR	
7/15/2008		NR	1106	89	NR	NR	NR	
8/18/2008		NR	907	51	NR	NR	NR	
9/22/2008		NR	1083	101	NR	NR	NR	
10/13/2008		NR	1130	98	NR	NR	NR	
11/18/2008	NR	846	112	NR	NR	NR		
12/16/2008	NR	1227	83	NR	NR	NR		
1/12/2009	NR	862	93	NR	NR	NR		

**Select Laboratory and Field Parameter Results  
Operable Unit 3  
Hooker/Ruco Site  
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe <sup>+2</sup> (mg/L)
GP-3 (Well 3R) (cont'd)	2/16/2009	NR	1159	104	NR	NR	NR
	3/16/2009	NR	1082	112	NR	NR	NR
	4/13/2009	NR	1410	153	NR	NR	NR
	0/18/2009	NR	1012	151	NR	NR	NR
	6/15/2009	NR	856	94	NR	NR	NR
	7/21/2009	NR	1180	148	NR	NR	NR
	8/18/2009	NR	1226	151	NR	NR	NR
	9/16/2009	NR	1462	163	NR	NR	NR
	10/20/2009	NR	1591	178	NR	NR	NR
	11/16/2009	NR	1262	182	NR	NR	NR
	12/14/2009	NR	1262	179	NR	NR	NR
	1/18/2010	NR	1263	188	NR	NR	NR
	2/15/2010	NR	1191	177	NR	NR	NR
	3/15/2010	NR	852	134	NR	NR	NR
	4/20/2010	NR	890	173	NR	NR	NR
	6/21/2010	NR	450	135	NR	NR	NR
	7/19/2010	NR	308	137	NR	NR	NR
	8/12/2010	NR	132	155	NR	NR	NR
	5/08/2012	58	1700	140	NR	NR	NR
	12/11/2012	51	1500	84	NR	NR	NR
	2/18/2013	53	1400	72	NR	NR	NR
	6/06/2013	54	1400	60	NR	NR	NR
	8/21/2013	57	1200	58	NR	NR	NR
	2/24/2014 <sup>(6)</sup>	38	98	38	NR	NR	NR
	6/10/2014 <sup>(6)</sup>	40	140	36	NR	NR	NR
	9/11/2014 <sup>(6)</sup>	43	270	36	NR	NR	NR
	11/13/2014 <sup>(6)</sup>	44	394	35	NR	NR	NR
	3/16/2015 <sup>(6)</sup>	44	493	29	NR	NR	NR
	5/05/2015 <sup>(6)</sup>	34	533	18	NR	NR	NR
	9/09/2015 <sup>(6)</sup>	37	557	13	NR	NR	NR
	12/15/2015 <sup>(6)</sup>	34	510	10	NR	NR	NR
	3/14/2016 <sup>(6)</sup>	31	529	8.6	NR	NR	NR
	5/12/2016 <sup>(6)</sup>	29	487	7.6	NR	NR	NR
8/17/2016 <sup>(6)</sup>	33	579	5.0	NR	NR	NR	
12/15/2016 <sup>(6)</sup>	27	508	3.5	NR	NR	NR	
2/14/2017 <sup>(6)</sup>	31	498	3.9	NR	NR	NR	
9/12/2017 <sup>(6)</sup>	31	365	2.7	NR	NR	NR	
2/28/2018 <sup>(6)</sup>	26	306	2.2	NR	NR	NR	
5/10/2018 <sup>(6)</sup>	28	332	2.0	NR	NR	NR	
2/13/2019 <sup>(6)</sup>	31	333J	1.7	NR	NR	NR	
8/6/2019	28	298	1.3	NR	NR	NR	
MW-3-1	1/30/2012 <sup>(7)</sup>	150	240	170	NR	NR	NR
	3/28/2012	56	220	1300	NR	NR	NR
	6/19/2013	7.8	37	78	NR	NR	NR
	6/5/2015	12	68	4.8	NR	NR	NR
	11/11/2015	11	58	5.2	NR	NR	NR
	5/11/2016	16	87	16	NR	NR	NR
	10/18/2016	14	96	14	NR	NR	NR
6/11/2018	19	139	36	NR	NR	NR	

**Select Laboratory and Field Parameter Results  
Operable Unit 3  
Hooker/Ruco Site  
Hicksville, New York**

<b>Well</b>	<b>Date Sampled</b>	<b>PCE (µg/L)</b>	<b>TCE (µg/L)</b>	<b>VCM (µg/L)</b>	<b>ORP (mV)</b>	<b>DO (mg/L)</b>	<b>Fe<sup>+2</sup> (mg/L)</b>
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Notes:

- (1) Pilot System Monitoring Well
  - (2) Remainder of System Monitoring Well
  - (3) Black colored water prevented reading on colorimetric meter
  - (4) Orange colored water prevented reading on colorimeter meter
  - (5) Insufficient sample volume to obtain measurement/reading
  - (6) Sample from replacement well 3R
  - (7) Sample collected from vertical profile boring at depth 439 ft bgs
- NA - Not analyzed  
 NM - Not measured (insufficient sample volume for all samples subsequent to 11/30/2011)  
 NR - Not reported by Northrop  
 NS - Not Sampled  
 U - Not detected at associated value  
 J - Estimated concentration



Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	RW1-MW3																												
Sample Date	1/20/2010	4/21/2010	7/29/2010	11/10/2010	3/25/2011	6/14/2011	9/28/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	12/7/2012	3/14/2013	6/19/2013 <sup>11</sup>	9/17/2013	12/17/2013	3/25/2014	9/23/2014	3/25/2015	9/14/2015	3/21/2016	9/14/2016	3/1/2017	9/13/2017	3/5/2018	9/12/2018	3/7/2019	9/26/2019	
Comments																													
Well Depth (Ft)	435																												
Screened Interval (Ft)	395-435																												
VOCS (EPA 624) ug/L <sup>(6)</sup>																													
Acrolein	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	
Acrylonitrile	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-butanone	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon disulfide	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon tetrachloride	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	
Chloroform	0.67 J	0.80 J	0.47 J	0.69 J	0.73 J	NR	0.97 J	ND	0.73 J	0.64 J	ND	1.2 J	ND	0.82	ND	ND	0.74 J	0.67 J	0.79 J	ND	0.79 J	0.80 J	0.61 J	0.69 J	0.67 J	0.720 J	0.725 J	ND	
Chloromethane	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND		
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1-dichloroethane	2.4	4.6	1.5	2.3	2.4	9.3	10.1 J	2.1	8.4	5.7	9.4	9.3	8.5	10	9.7 J	8.1	8.6	6.1 J	8.1	7.7	7.4	7.0	4.5	4.4	4.1	3.47	4.14 J	2.86 J	
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-dichloroethene	0.42 J	1.10	ND	0.28 J	ND	1.8	2.2 J	ND	1.8	0.86 J	2.4	2.2	1.7	1.8	1.6	1.9	2.1	1.6 J	2.3 J	2.3	2.5	1.7	1.1	1.2	0.97 J	0.950 J	1.08 J	0.888 J	
cis-1,2-dichloroethene	0.54 J	0.48 J	0.36 J	0.55 J	0.58 J	0.59 J	0.43 J	0.55 J	0.68 J	0.33 J	0.56 J	0.46 J	0.53 J	0.46 J	0.72 J	0.60 J	0.57 J	0.44 J	0.54 J	0.49 J	0.58 J	0.44 J	0.29 J	0.37 J	0.36 J	0.310 J	0.398 J	0.363 J	
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-dichloropropane	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylbenzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-hexanone	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Methylene chloride	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
styrene	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	ND	0.20 J	ND	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Tetrachloroethene	ND	0.49 J	ND	ND	ND	0.33 J	0.62 J	ND	0.65 J	0.30 J	0.97 J	0.40 J	ND	ND	ND	ND	ND	ND	ND	0.50 J	ND	0.35 J	ND	0.22 J	0.23 J	0.290 J	ND	0.397 J	
Toluene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	0.41 J	0.98 J	ND	0.26 J	0.33 J	1.6	2.7 J	ND	ND	1.1 J	1.9	1.7	1.4	1.8	1.5	2.0	1.7	1.2 J	1.5	1.6	2.1	1.6	1	1.1	0.87 J	0.810 J	1.27 J	0.711 J	
1,1,2-trichloroethane	0.62 J	0.60 J	0.36 J	0.55 J	0.41 J	NR	0.57 J	0.63 J	0.70 J	0.61 J	0.56 J	0.54 J	0.61 J	0.46 J	ND	0.55 J	0.46 J	0.46 J	0.43 J	0.44 J	0.47 J	0.41 J	0.51 J	0.35 J	0.37 J	0.400 J	0.296 J	0.284 J	
Trichloroethene	1.2	1.6	0.58 J	0.91 J	1.0	1.4	1.8 J	1.0 J	2.2	1.3	2.3	1.6	1.9	1.7	2.5	3.2	2.5	1.9	2.0	2.4	4.5	3.5	2.3	2.8	2.2	2.24	4.49 J	3.34 J	
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
xylenes (total)	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TSS (SM20 25400) mg/L	NR	8.0	<4.0	<4.0	<4.0	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	1.8	2.1	5.6	7.1	2.7	8.6	2.2	

Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	RW2-MW1																																					
Sample Date	5/4/2005	7/20/2005	5/27/2009	1/18/2010	4/21/2010	7/28/2010	11/3/2010	3/24/2011	6/14/2011	9/27/2011	11/29/2011	3/7/2012	6/6/2012	8/21/2012	12/7/2012	3/13/2013	6/17/2013 <sup>(1)</sup>	9/17/2013	12/17/2013	12/17/2013	3/25/2014	9/23/2014	3/26/2015	9/14/2015	3/21/2016	3/21/2016	9/15/2016	3/1/2017	9/13/2017	3/5/2018	9/11/2018	3/7/2019	9/25/2019					
Comments	Duplicate																																					
Well Depth (Ft)	510																																					
Screened Interval (Ft)	470-510																																					
VOCS (EPA 624) ug/L <sup>(4)</sup>																																						
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR													
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR												
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Benzene	ND	ND	ND	ND	0.15J	0.69J	0.58J	0.30J	NR	0.22J	0.27J	0.22J	ND	0.68J	0.54J	ND	0.59J	ND	ND	0.21J	0.21J	0.56J	ND	ND	0.18J	ND	0.51J	ND	ND	0.250J	ND	ND	ND	ND	ND			
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Carbon tetrachloride	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
Chloroform	ND	NR	ND	ND	ND	0.38J	ND	ND	ND	2.9	ND	ND	ND	2.8J	1.5	0.46J	2.2	3.4	3.5	2.4	0.25J	2.0	1.0	0.550J	2.03J	ND	ND	ND	ND									
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND							
Cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
1,1-dichloroethane	0.53J	0.93J	1.2J	0.82J	0.60J	0.58J	0.42J	ND	0.61J	0.64J	ND	0.50J	4.2	4.8	0.58J	0.52J	7.0	ND	5.8	6.4	5.1	ND	2.1	6.3	8.7	8.5	6.4	1.7	6.6	6.5	2.75	7.81	6.03	6.03	6.03	6.03		
1,2-dichloroethane	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	1.9J	1.7J	1.3	0.69J	0.41J	1.4	1.4	1.3	0.93J	ND	0.71J	0.39J	0.330J	0.552J	0.677J	0.677J								
1,1-dichloroethene	ND	0.58J	0.55J	0.63J	ND	ND	ND	ND	NR	ND	ND	ND	0.55J	0.95J	0.19J	ND	1.9	ND	2.6	2.6	1.8	1.3J	0.61J	2.6	3.7	3.4	1.6	0.27J	1.3	1.5	0.470J	1.67J	1.87J	1.87J	1.87J			
cis-1,2-dichloroethene	ND	0.55J	1.9	1.0	0.78J	0.80J	0.55J	0.43J	0.56J	0.32J	0.39J	0.34J	0.32J	0.39J	0.33J	0.29J	7.7	0.77J	11.0J	11.1J	8.0	4.0	2.6	13.3	15.3	15.0	6.1	1.3	2.6	1.2	1.09	2.42J	7.18	7.18	7.18			
trans-1,2-dichloroethene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dioxane	5.34	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
Ethylbenzene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR							
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND							
Toluene	ND	0.85J	1.0	ND	0.52J	0.49J	0.50J	ND	NR	0.24J	0.29J	0.19J	ND	ND	0.27J	ND	ND	0.31J	ND	ND	ND	ND	0.26J	ND	0.20J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.33J	ND	ND	0.84	ND	0.94J	0.94J	ND	0.39J	ND	ND	0.56J	ND	0.49J	0.43J	ND	0.49J	0.43J	ND	0.761J	0.712J	0.712J	0.712J	0.712J	
1,1,2-trichloroethane	ND	ND	ND	NR	ND																																	



Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	RW3-MW2																																				
Sample Date	1/19/2010	1/19/2010	4/22/2010	7/29/2010	11/9/2010	11/9/2010	3/25/2011	6/14/2011	9/27/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	8/22/2012	12/4/2012	12/4/2012	3/14/2013	6/20/2013 <sup>(1)</sup>	9/17/2013	12/17/2013	3/25/2014	9/23/2014	9/23/2014	3/25/2015	9/14/2015	3/22/2016	9/14/2016	9/14/2016	3/2/2017	3/2/2017	9/12/2017	3/6/2018	9/11/2018	3/5/2019	9/25/2019		
Comments	Duplicate				Duplicate									Duplicate		Duplicate								Duplicate					Duplicate		Duplicate						
Well Depth (Ft)	495																																				
Screened Interval (Ft)	475-495																																				
VOCs (EPA 624) ug/L <sup>(4)</sup>																																					
Acrolein	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR									
Acrylonitrile	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
Acetone	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Benzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND							
Bromodichloromethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-butanone	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
carbon disulfide	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR									
Chloroform	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	0.62 J	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27 J	0.24 J	0.23 J	0.26 J	0.24 J	0.24 J	0.23 J	ND	ND	ND	
Chloromethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
1,2-dichlorobenzene	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
1,3-dichlorobenzene	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
1,4-dichlorobenzene	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
1,1-dichloroethane	ND	ND	0.54 J	ND	ND	ND	0.52 J	0.37 J	ND	0.41 J	0.66 J	0.74 J	0.73 J	0.69 J	0.71 J	0.68 J	ND	0.65 J	0.59 J	0.62 J	0.51 J	0.51 J	0.56 J	0.47 J	0.52 J	0.39 J	0.34 J	0.39 J	0.47 J	0.36 J	0.29 J	0.290 J	0.364 J	ND			
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND										
1,1-dichloroethene	ND	ND	1.2	ND	ND	ND	0.57 J	0.45 J	0.27 J	0.27 J	0.36 J	0.49 J	0.49 J	0.40 J	0.43 J	0.53 J	ND	0.29 J	0.45 J	0.44 J	0.38 J	0.33 J	0.33 J	0.30 J	0.46 J	0.31 J	0.37 J	0.25 J	ND	0.26 J	ND	0.256 J	ND	ND			
cis-1,2-dichloroethene	1.5 J	1.6 J	2.4	1.1	0.92 J	0.92 J	1.6	1.7	1.4	1.3	1.5	1.6	1.5	1.6	1.6	1.6	ND	1.3 J	1.9	1.7	1.4	1.3	1.5	1.4	1.7	1.5	1.5	1.5	1.3	1.2	0.990 J	1.10 J	0.994 J	ND			
trans-1,2-dichloroethene	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-hexanone	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
Methylene chloride	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
4-methyl-2-pentanone	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl-tert-butyl-ether	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR								
styrene	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR										
Tetrachloroethene	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	0.52 J	0.66 J	0.48 J	0.54 J	0.44 J	0.38 J	0.43 J	0.38 J	0.430 J	0.328 J	0.477 J										
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	ND	ND	0.58 J	ND	ND	ND	0.39 J	0.43 J	ND	0.54 J	0.52 J	0.49 J	0.42 J	0.43 J	0.41 J	ND	0.47 J	0.50 J	0.43 J	0.36 J	0.39 J	0.38 J	0.41 J	0.47 J	0.44 J	0.47 J	0.41 J	0.34 J	0.26 J	0.33 J	ND	ND	ND	ND			
1,1,2-trichloroethane	ND	ND	ND	ND	0.25 J	0.27 J	ND	NR	0.32 J	0.32 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	0.31 J	0.21 J	0.32 J	0.2								

Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	RW3-MW3																																								
	1/20/2010	4/22/2010	4/22/2010	7/28/2010	11/3/2010 <sup>(1)</sup>	3/25/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013 <sup>(1)</sup>	9/18/2013	12/17/2013	3/26/2014	9/23/2014	3/25/2015	3/25/2015	9/15/2015	3/21/2016	9/15/2016	3/2/2017	9/12/2017	9/12/2017	3/6/2018	3/6/2018	9/12/2018	9/12/2018	3/5/2019	3/5/2019	9/25/2019	9/25/2019	1/20/2010				
Comments			Duplicate								Duplicate										Duplicate				Duplicate																
Well Depth (Ft)	340																																								
Screened Interval (Ft)	320-340																																								
VOCS (EPA 624) ug/L <sup>(2)</sup>																																									
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR			
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0 R	ND	NR	NR	NR	NR															
Chloroform	ND	ND	0.40J	0.46J	ND	0.33J	NR	0.48 J	ND	0.42 J	0.42 J	2.3 J	ND	0.88 J	ND	ND	ND	3.4 J	ND	0.27 J	0.40 J	0.33 J	ND	ND	0.48 J	0.45 J	0.35 J	0.27 J	0.33 J	0.37 J	0.400 J	0.400 J	0.420 J	0.370 J	ND	ND	ND	NR			
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1-dichloroethane	ND	1.6	1.6	2.3	1.0	1.5	7.1	3.2 J	1.5	3.3	3.3	2.6 J	ND	4.2	4.5 J	ND	ND	3.7 J	4.9 J	1.3 J	1.8	1.8	1.2	4.0	3.5	2.9	2.5	2.2	2.0	2.3	2.08	2.24	2.21 J	1.97 J	1.85 J	1.80 J	2.5	NR			
1,2-dichloroethane	ND	0.52J	0.54J	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30J	ND	NR														
1,1-dichloroethene	ND	1.1	1.3	1.2	ND	0.96J	2.6	1.8 J	0.96 J	1.9	1.9	1.7 J	1.4 J	1.9	2.1 J	ND	ND	2.4 J	0.94 J	1.5 J	1.4 J	1.1	2.4	2.0	1.3	ND	0.78 J	1.1	1.2	1.00	1.14	1.17 J	1.14 J	1.52 J	1.36 J	1.0	NR				
cis-1,2-dichloroethene	ND	2.1	2.1	1.7	ND	2.3	1.2	1.9	2.1	2.1	2.1	1.4 J	1.8 J	1.2	ND	ND	ND	1.2	1.3	1.3	1.3	1.1	1.1	0.83 J	0.8 J	0.63 J	0.59 J	0.590 J	0.640 J	0.840 J	0.805 J	1.07 J	1.05 J	0.46J	NR	NR	NR				
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR			
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	3.2 J	ND	6.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR		
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Tetrachloroethene	ND	0.45J	0.49J	ND	ND	0.40 J	0.50 J	ND	0.72 J	0.69 J	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	0.36 J																					

Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	RW3-MW4																												
Sample Date	4/22/2010	7/28/2010	7/28/2010	11/3/2010 <sup>1)</sup>	3/24/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013 <sup>2)</sup>	9/17/2013	12/17/2013	3/26/2014	9/23/2014	3/25/2015	9/15/2015	3/21/2016	9/15/2016	3/2/2017	9/12/2017	3/6/2018	9/12/2018	3/5/2019	9/25/2019	
Comments			Duplicate																										
Well Depth (Ft)	495																												
Screened Interval (Ft)	475-495																												
VOCS (EPA 624) ug/L <sup>(6)</sup>																													
Acrolein	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	
Acrylonitrile	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-butanone	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon disulfide	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon tetrachloride	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	
Chloroform	ND	ND	ND	0.32 J	ND	NR	0.87 J	ND	0.38 J	ND	ND	0.71 J	ND	1.2	ND	ND	1.2 J	0.38 J	1.2	ND	0.64 J	ND	ND	0.21 J	0.47 J	ND	0.996 J	ND	
Chloromethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1-dichloroethane	0.6	0.54 J	0.50 J	1.8	0.81	0.78 J	5.4 J	0.84 J	1.8	0.50 J	ND	1.2	3.8	4.6	2.9	4.9	5.5	2.7 J	6.9	0.88 J	4.9	2.0	1.5	2.6	3.9	1.47	6.22	5.72	
1,2-dichloroethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.235 J	0.253 J	
1,1-dichloroethene	ND	ND	ND	0.86 J	ND	0.20 J	0.53 J	ND	0.21 J	ND	ND	0.19 J	0.38 J	0.42 J	ND	0.39 J	0.95 J	0.37 J	1.3 J	0.21 J	0.85 J	0.40 J	0.27 J	0.41 J	0.70 J	0.340 J	0.981 J	1.37 J	
cis-1,2-dichloroethene	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21 J	ND	ND	0.351 J	0.475 J	
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-dichloropropane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-dichloropropene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylbenzene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-hexanone	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Methylene chloride	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
4-methyl-2-pentanone	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl-tert-butyl-ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
styrene	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	0.46 J	ND	ND	ND	ND	ND	ND	
Toluene	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	ND	ND	ND	0.57 J	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND	0.29 J	ND	0.39 J	0.48 J	ND	0.60 J	ND	0.48 J	0.24 J	ND	0.26 J	0.40 J	ND	0.481 J	0.668 J	
1,1,2-trichloroethane	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	11	7.5	8.0	308	7.7	6.7	3.4 J	5.6	4.6	5.4	5.5	4.5	2.3	1.8	5.0	4.4	3.3	2.5	2.7	4.1	2.9	4.3	4.1	5.4	1.5	2.66	2.12 J	1.30 J	
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Vinyl chloride	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
xylenes (total)	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Mercury (EPA 245.1) ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TSS (SM20 25400) mg/L	16.0	<4.0	<4.0	<4.0	<4.0	ND	11	6	5	ND	ND	ND	22	ND	ND	ND	9	5	5	ND	ND	1.4	ND	1.3	ND	ND	1.3	2.7	

Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Third Quarter 2019

Sample ID	TP-01																												
Sample Date	1/21/2010	6/15/2011	9/27/2011	9/27/2011	11/30/2011	3/8/2012	6/6/2012	8/22/2012	12/4/2012	3/13/2013	3/13/2013	6/17/2013 <sup>(1)</sup>	9/17/2013	9/17/2013	12/16/2013	3/25/2014	9/22/2014	3/25/2015	9/14/2015	9/14/2015	3/21/2016	9/14/2016	3/1/2017	9/13/2017	3/5/2018	9/11/2018	3/6/2019	9/25/2019	
Comments				Duplicate							Duplicate			Duplicate					Duplicate										
Well Depth (Ft)	470																												
Screened Interval (Ft)	450-470																												
VOCS (EPA 624) ug/L <sup>(6)</sup>																													
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	
Benzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	
Bromoform	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon disulfide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon tetrachloride	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-chloroethylvinyl ether	NR	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	2.0 R	NR	ND	ND	ND	ND	ND	ND	2.0 R	ND	ND	ND	NR	ND	ND	ND	NR	NR	
Chloroform	ND	NR	0.68 J	0.74 J	ND	0.74 J	0.82 J	ND	2.5 J	1.2	1.1	1.1	5.2 J	ND	7.4	6.8 J	1.9	2.6	1.3	1.3	1.7	1.6	1.2	6.3	2.0	1.08	0.684 J	ND	
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,2-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1-dichloroethane	3.6 J	5.0	3.7	3.7	2.9	3.7	3.7	3.4	1.1	1.5	1.4	3.2	2.1 J	2.8	1.5	ND	1.3 J	2.5	2.1	2.0	1.8	2.1	0.78 J	1.3	1.2	1.24	0.717 J	0.381 J	
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.36 J	0.37 J	0.30 J	ND	ND	ND	ND	0.67 J	0.88 J	0.82 J	0.82 J	0.86 J	0.70 J	0.45 J	0.79	0.79 J	0.650 J	ND	ND	
1,1-dichloroethene	ND	1.7	1.1	1.0	1.0	1.2	1.4	1.1	0.23 J	0.44 J	0.42 J	0.77	0.66 J	0.74 J	0.33 J	0.22 J	0.47 J	1.2 J	0.77 J	0.83 J	0.75 J	0.68 J	0.23 J	0.36 J	0.46 J	0.420 J	ND	ND	
cis-1,2-dichloroethene	190	43.4	40.4	40.2	74.9	53.3	29.9	16.1	4.2	5.8	5.8	8.7	14.1 J	14.7	8.0	5.3	7.6	13.4	11.3	11.6	10.8	12	5	11	12	12.1	6.01	3.75 J	
trans-1,2-dichloroethene	3.0 J	1.1	1.0 J	0.92 J	1.1	0.87 J	0.79 J	1.1	0.87 J	0.79 J	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
styrene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Tetrachloroethene	3.4 J	3.3	4.4	4.4	3.6	4.7	6.0	4.0	0.42 J	0.34 J	0.32 J	1.6	0.77 J	1.5 J	0.57 J	ND	ND	0.48 J	0.82 J	0.88 J	0.72 J	0.37 J	0.22 J	ND	ND	ND	ND	ND	
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-trichloroethane	ND	0.63 J	0.73 J	0.76 J	0.29 J	0.57 J	1.1 J	0.86 J	ND	0.35 J	0.35 J	0.62	0.66 J	0.66 J	0.50 J	ND	ND	ND	ND	ND	0.49 J	0.25 J	0.29 J	0.27 J	ND	ND	ND		
1,1,2-trichloroethane	ND	NR	0.31 J	0.31 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	65	35.3	41.0	39.6	38.0	38.1	40.4	27.9	22.0	25.9	25.4	25	27.0	26.7	29.8	21.7	31.9	52.3	53.0	53.9	61.7	47	21	54	55	38.2	28.3	14.4	
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
xylenes (total)	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Mercury (EPA 245.1) ug/L	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TSS (SM20 25400) mg/L	NR	63	18	NR	ND	7	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	

**Table 7**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Summary of Historical Groundwater Analytical Results**  
**Through Third Quarter 2019**

Sample ID	RW1-MW2				RW2-MW2			RW2-MW3				IW-1 MW-1			RW-3 <sup>(3)</sup>					
	5/4/2005	7/22/2005	5/28/2009	6/18/2013 <sup>(2)</sup>	5/4/2005	7/21/2005	6/17/2013 <sup>(2)</sup>	5/3/2005	7/20/2005	5/28/2009	6/18/2013 <sup>(2)</sup>	5/3/2005	6/18/2013 <sup>(2)</sup>	5/27/2009	9/15/2015	3/22/2016	9/15/2016	3/2/2017	9/13/2017	3/5/2018
Comments																				
Well Depth (Ft)	435				510			510				150			230					
Screened Interval (Ft)	395-435				470-510			470-510				20-150			200-230					
VOCS (EPA 624) ug/L <sup>(4)</sup>																				
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	R	R	ND	R	R	ND	ND	R	ND	ND	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	ND	ND	NR	ND	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	NR	ND	NR	NR	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR
Chloroform	ND	1.4	ND	ND	ND	ND	0.55	ND	ND	ND	ND	0.94J	ND	0.98J	ND	0.46 J	0.26 J	ND	0.28 J	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	ND	ND	NR	ND	ND	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	ND	ND	NR	ND	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	4.6	5.5	3.4	3.9	ND	0.78J	4.9	0.68J	0.31J	1.4	7.4	0.39J	0.51	0.22J	1.9	2.1	1.8	1.4 J	1.5	1.3
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	3.2	12.3	ND	ND	ND	0.41J	0.72	ND	ND	0.42J	ND	ND	ND	ND	1.9	2.5	1.5	1.3 J	1.4	0.84 J
cis-1,2-dichloroethene	181.0	47.6	160.0	120	0.33J	0.41J	4.6	0.40J	0.56J	2.3	ND	ND	ND	ND	1.6	2.4	1.4	1.6 J	1.9	3.4
trans-1,2-dichloroethene	2.5	7.6	2.5	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	4.01	NR	NR	NR	7.45J	NR	NR	7.42J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4.7
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.64 J	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.46J	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	134.0	19.0	5.9	ND	ND	ND	ND	ND	ND	ND	0.55	ND	0.68 J	0.79 J	0.64 J	0.60 J	0.65 J	0.59 J	
Toluene	0.32J	ND	ND	ND	0.33J	0.53J	ND	ND	0.50J	0.39J	ND	ND	ND	0.19J	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	1.3	1.0	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	0.47	0.92	0.49J	0.96 J	1.3	0.95 J	ND	0.83 J	ND
1,1,2-trichloroethane	ND	0.65J	ND	ND	D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	0.49 J	0.29 J	ND	0.45 J	0.22 J
Trichloroethene	158.0	198.0	200.0	64	7.8	13.8	12	16.2	20.6	18.0	60	ND	ND	0.17J	237	371	230	230	220	120
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-xylene	NR	NR	NR	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	12.9	187.0	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	NR	ND	ND	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.20	ND	ND	ND	ND	ND	ND
TSS (SM20 25-40D) mg/L	NR	NR	4.0	NR	NR	NR	NR	NR	NR	14.8	NR	NR	NR	NR	2.4	ND	ND	ND	2.4	8.1

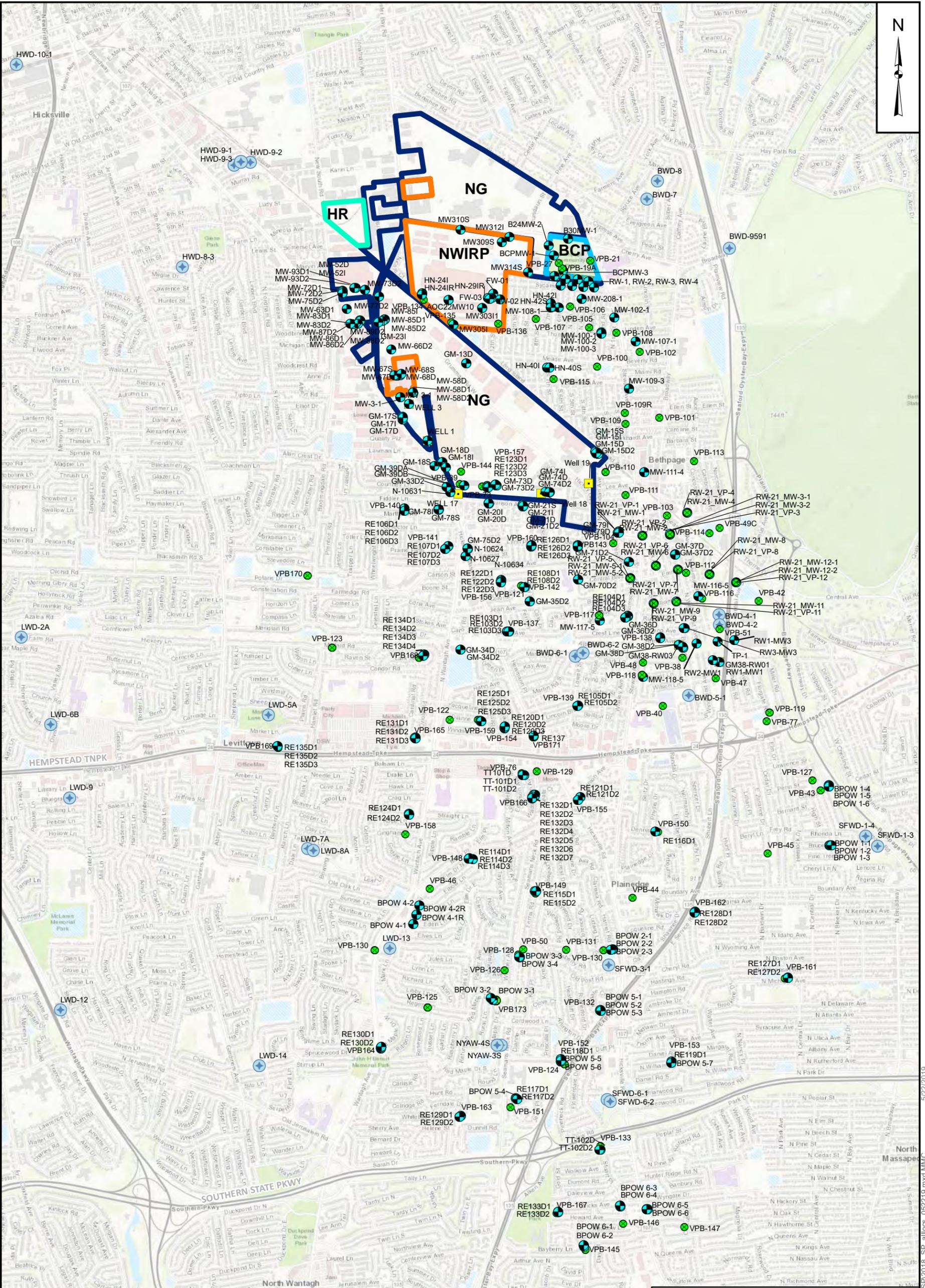
**Note:**  
VOC analysis changed from SW846 8260B to EPA Method 624 in January 2010.  
D = Dilution  
J = estimated value  
ND = not detected  
NR = not reported / required  
R = rejected  
mg/L - milligrams per liter  
µg/L - micrograms per liter

(1) Analytical results presented above for samples collected from RW3-MW3 and RW3-MW4 in November 2010 are not consistent with historical trends, indicating samples may have been switched. For trend analysis, concentrations for RW3-MW3 were used for RW3-MW4 for November 2010 and vice versa.  
(2) VOCs were analyzed by USEPA Method 524.2 (as opposed to Method 624) in June 2013 to correlate with samples collected under the Bethpage Regional Plume Comprehensive Groundwater Sampling Plan conducted in June 2013.  
(3) RW-3, previously an active extraction well sampled on a monthly basis, was taken off-line on 7/1/15. RW-3 is now sampled semi-annually, in conjunction with the semi-annual LTM events.  
(4) Samples were analyzed for TCL VOCs, including tentatively identified compounds (TICs), beginning in March 2016. No TICs were detected, unless otherwise indicated.

Data prior to June 2011 were collected by others.

APPENDIX B  
CHEMICAL RESULTS MAPS FOR 2001-2018

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**Legend**

- Monitoring Well
- Vertical Profile Boring
- ⊕ Public Water Supply Well
- Recovery Well

0 1,000 2,000 3,000 4,000 Feet

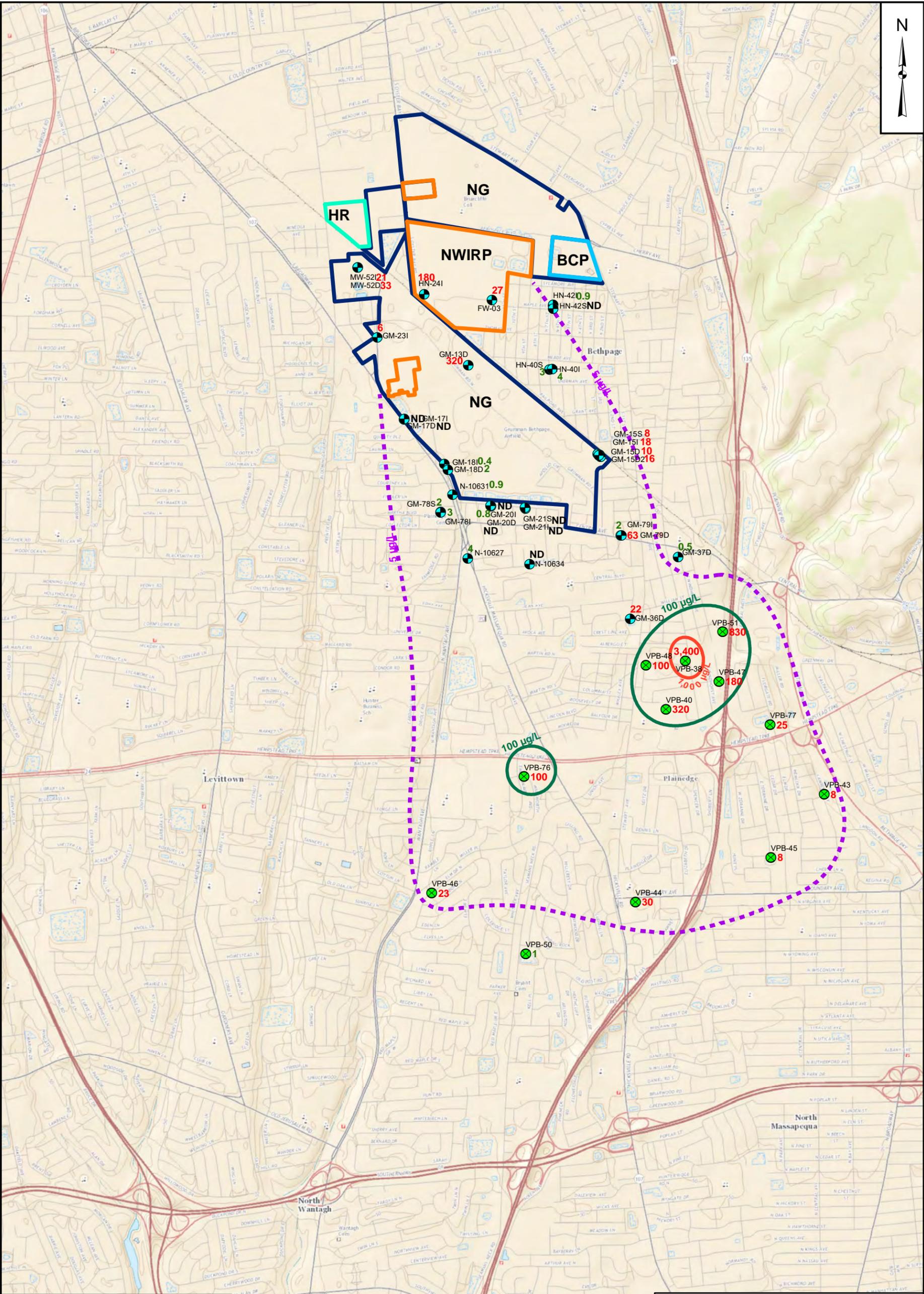
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 HR- Hooker Ruco Superfund Site  
 NG- Former Northrup Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit



**2000-2018  
 LOCATIONS  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE16	SCALE	AS NOTED
FIGURE NO.	<b>B-1</b>	REV	DATE
			5/22/2019

NOR-P:\GIS\_files\Bethpage\MAP DOCS\MXD\2019\_SP\2018\_SP\_alllocs\_062219.mxd MMC 5/22/2019



**Legend**

- Monitoring Well
  - Vertical Profile Boring
  - 2001 TCE (0 to 300 ft bgs)**
  - 5 µg/L TCE (inferred)
  - 100 µg/L TCE
  - 1,000 µg/L TCE
- 0 1,000 2,000 3,000 4,000 Feet

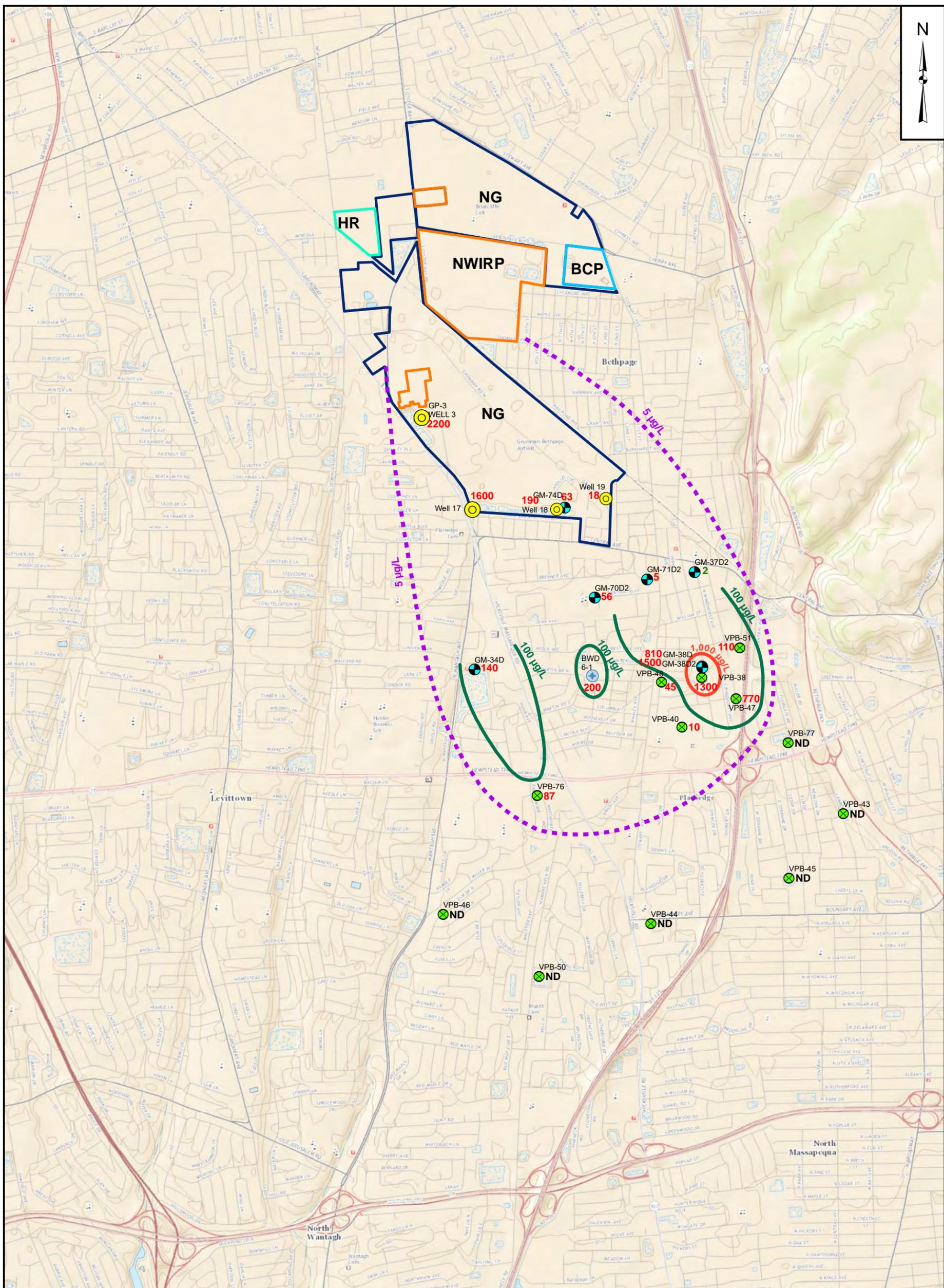
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
 100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L



**2001 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

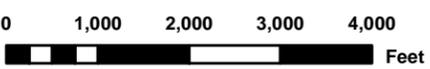
FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-2</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2001\_BP\_0-300\_TCE.mxd MMC 5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- NG Production Well
- Public Water Supply Well
- 2001 TCE (300 to 500 ft bgs)**
- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



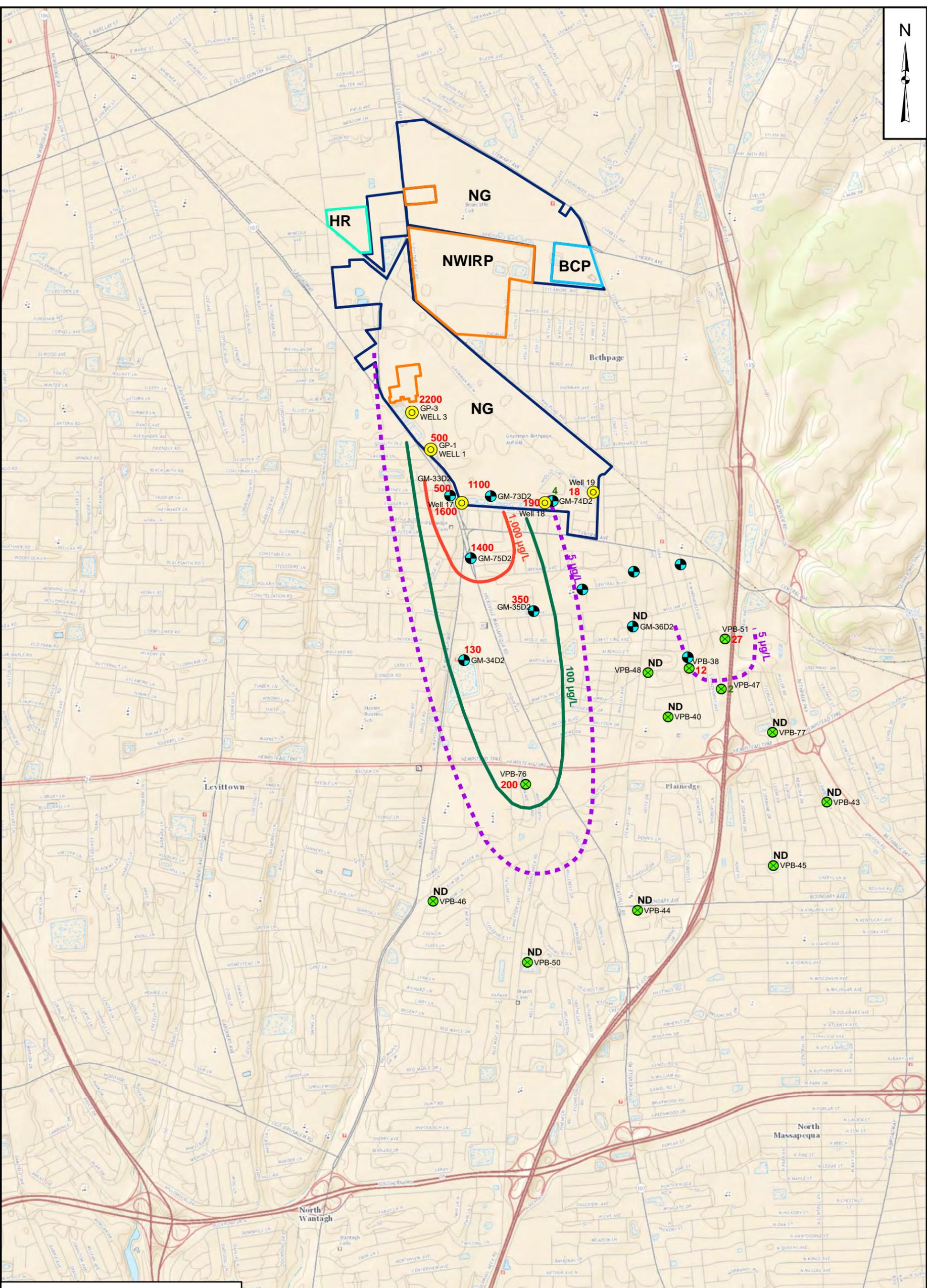
**Notes:**  
 BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2001 TCE CONCENTRATION  
 IN GROUNDWATER  
 (300 to 500 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

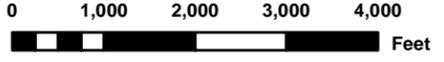
FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-3</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\112G08005\2017\_Sp\Final\2001\_BP\_300-500\_TCE.mxd MMC 5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Production Well
- 2001 TCE (500 to 700 ft bgs)**
- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



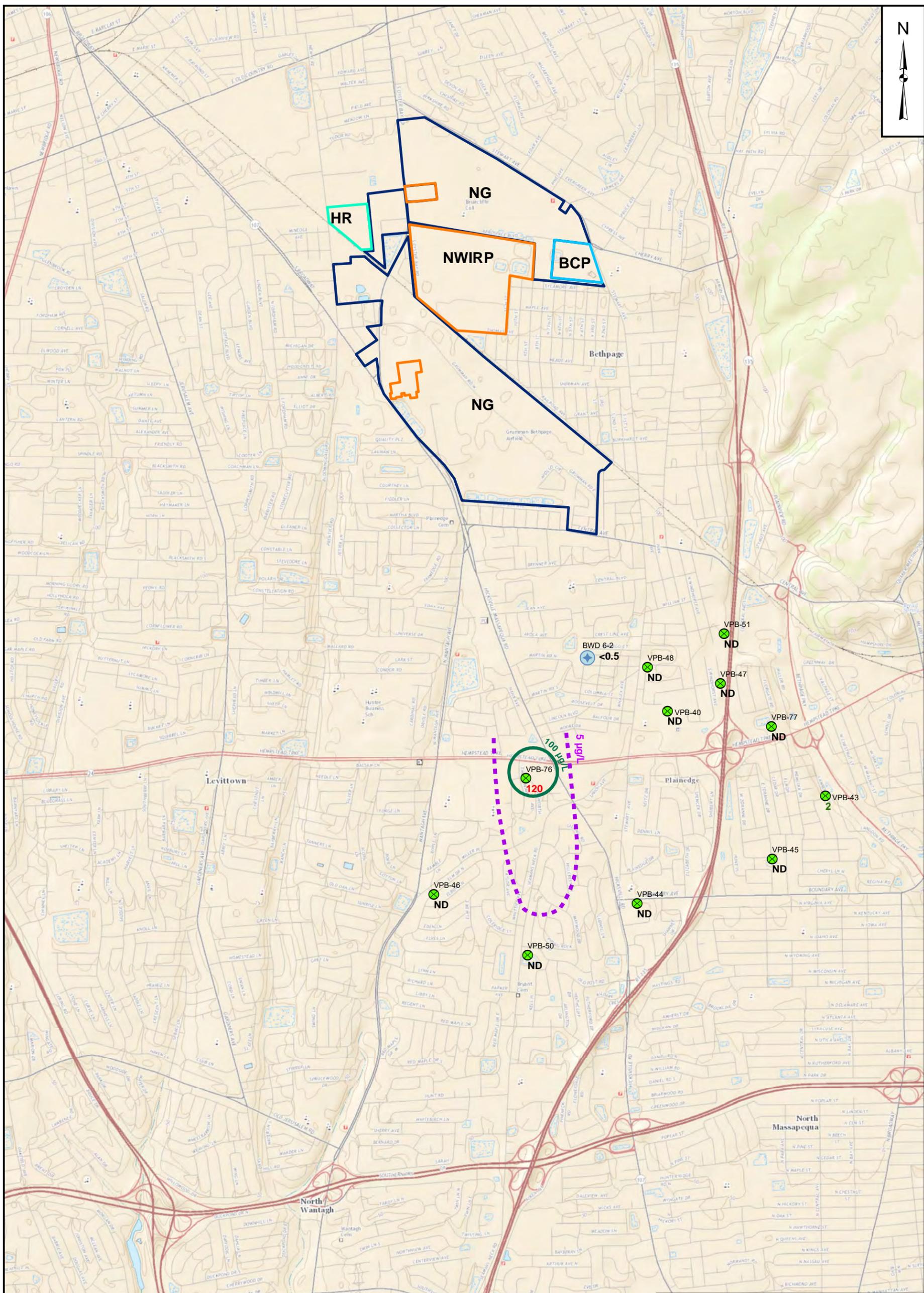
**Notes:**  
 BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant  
 Bethpage  
 Levittown  
 North Wantagh  
 North Massapequa  
 Plainedge



**2001 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-4</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2001\_BP\_500-700\_TCE.mxd MMC 5/18/2017



**Legend**

- Vertical Profile Boring
- Public Water Supply Well

**2001 TCE (Greater than 700 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE



**Notes:**

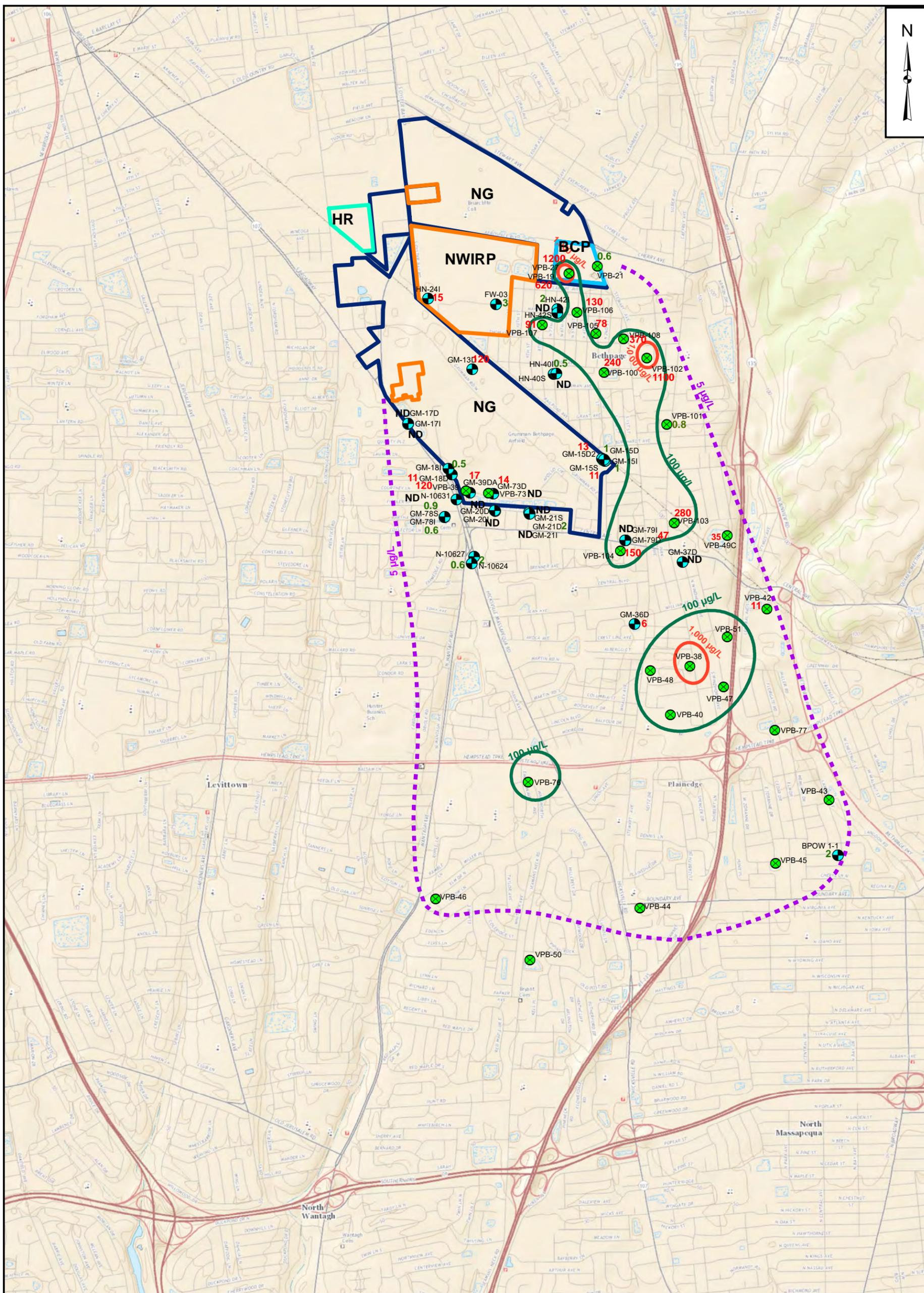
- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- HR- Hooker Ruco Superfund Site
- MCL- maximum contaminant level
- ND- non detect
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- OU- Operable Unit
- µg/L- microgram per liter
- TCE- Trichloroethene

**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



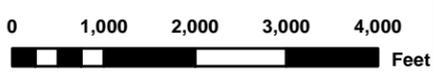
**2001 TCE CONCENTRATION  
 IN GROUNDWATER  
 (GREATER THAN 700 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-5</b>	REV	DATE
			5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- 2006 TCE (0 to 300 ft bgs)**
- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



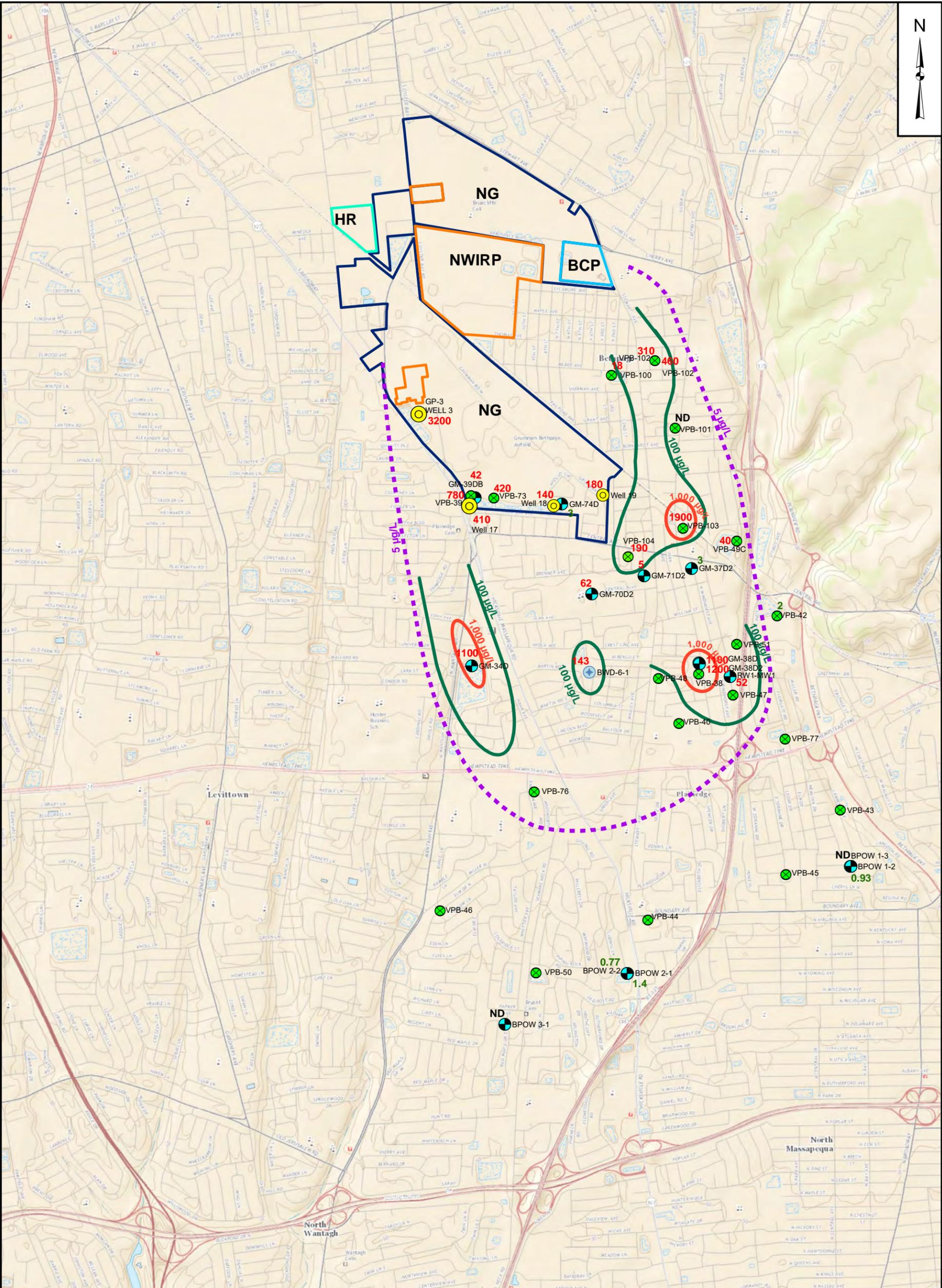
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2006 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-6</b>	REV	DATE
			5/18/2017

5/18/2017  
 NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2006\_BP\_0-300\_TCE.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- NG Production Well
- Public Water Supply Well

**2006 TCE (300 to 500 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

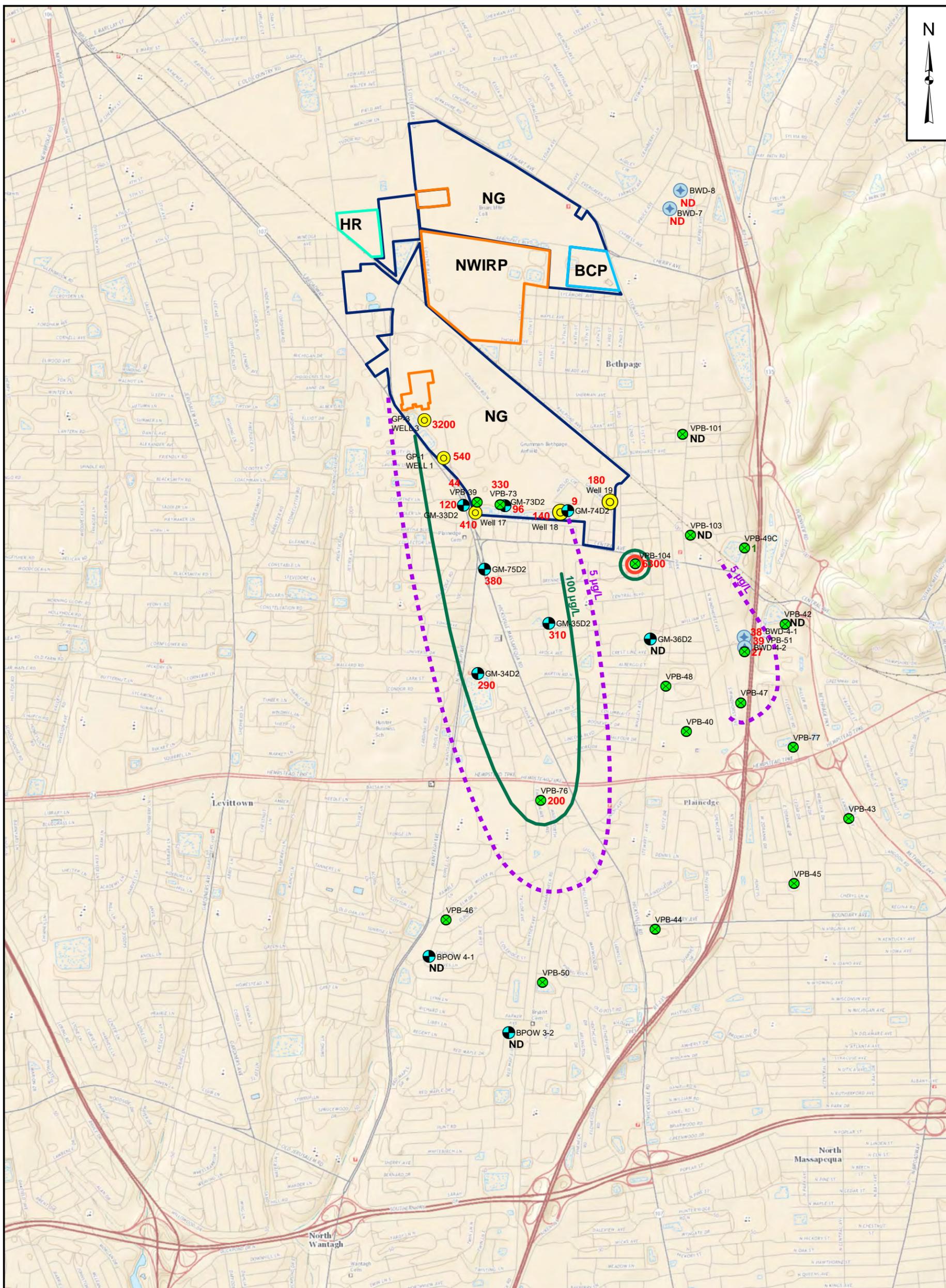
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2006 TCE CONCENTRATIONS  
 IN GROUNDWATER  
 (300 to 500 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-7</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MMXD2017\_Sp\Final\2006\_BP\_300-500\_TCE.mxd MMC 5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- NG Production Well
- Public Water Supply Well

**2006 TCE (500 to 700 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



**Notes:**

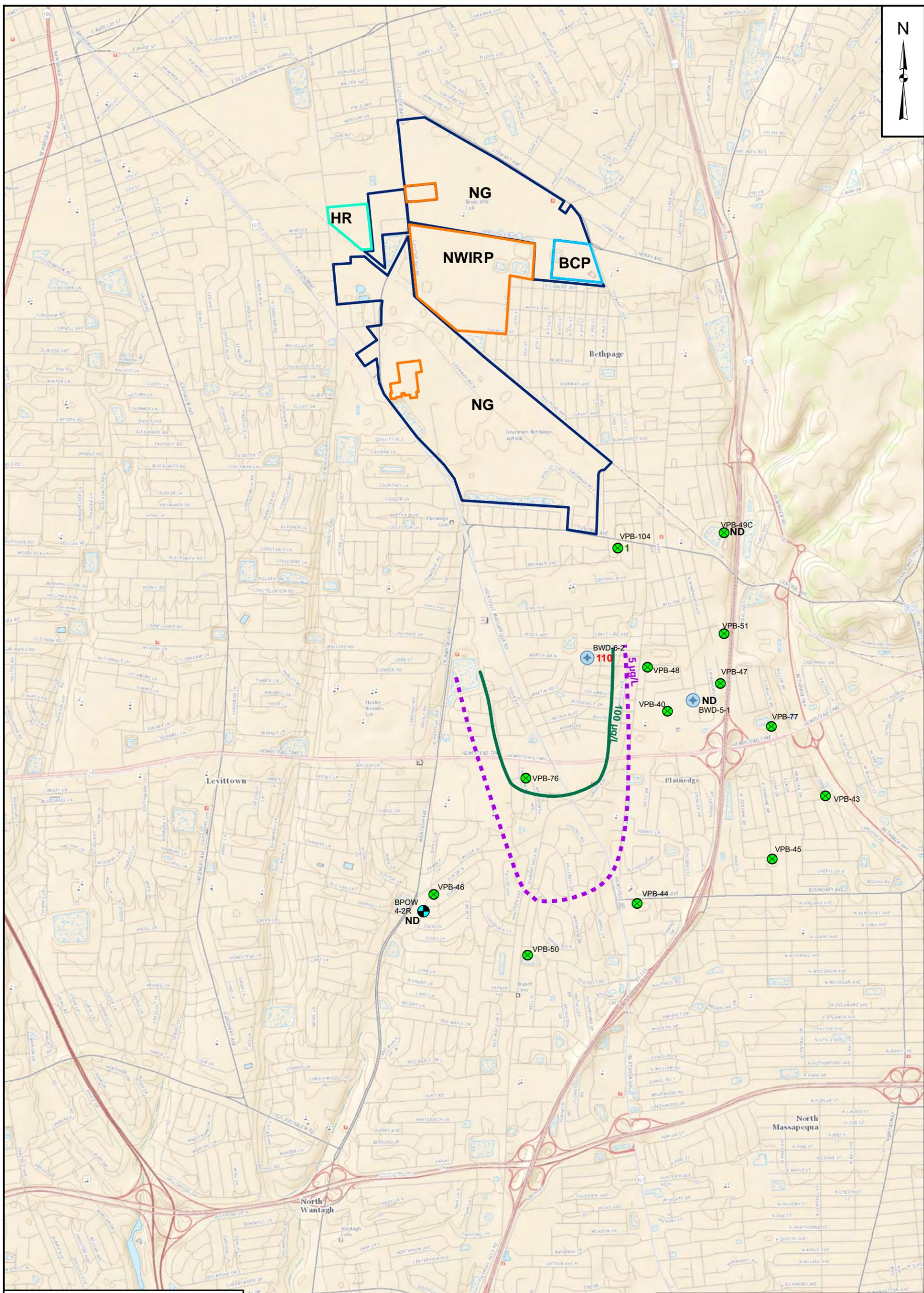
BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2006 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-8</b>	REV	DATE
			5/18/2017

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\112G08005-WE09\_BP\_500-700\_TCE.mxd MMC 5/18/2017



**Legend**

- 2006 Monitoring Well
- 2000 - 2006 Vertical Profile Boring
- Public Water Supply Well

**2006 TCE (Greater than 700 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

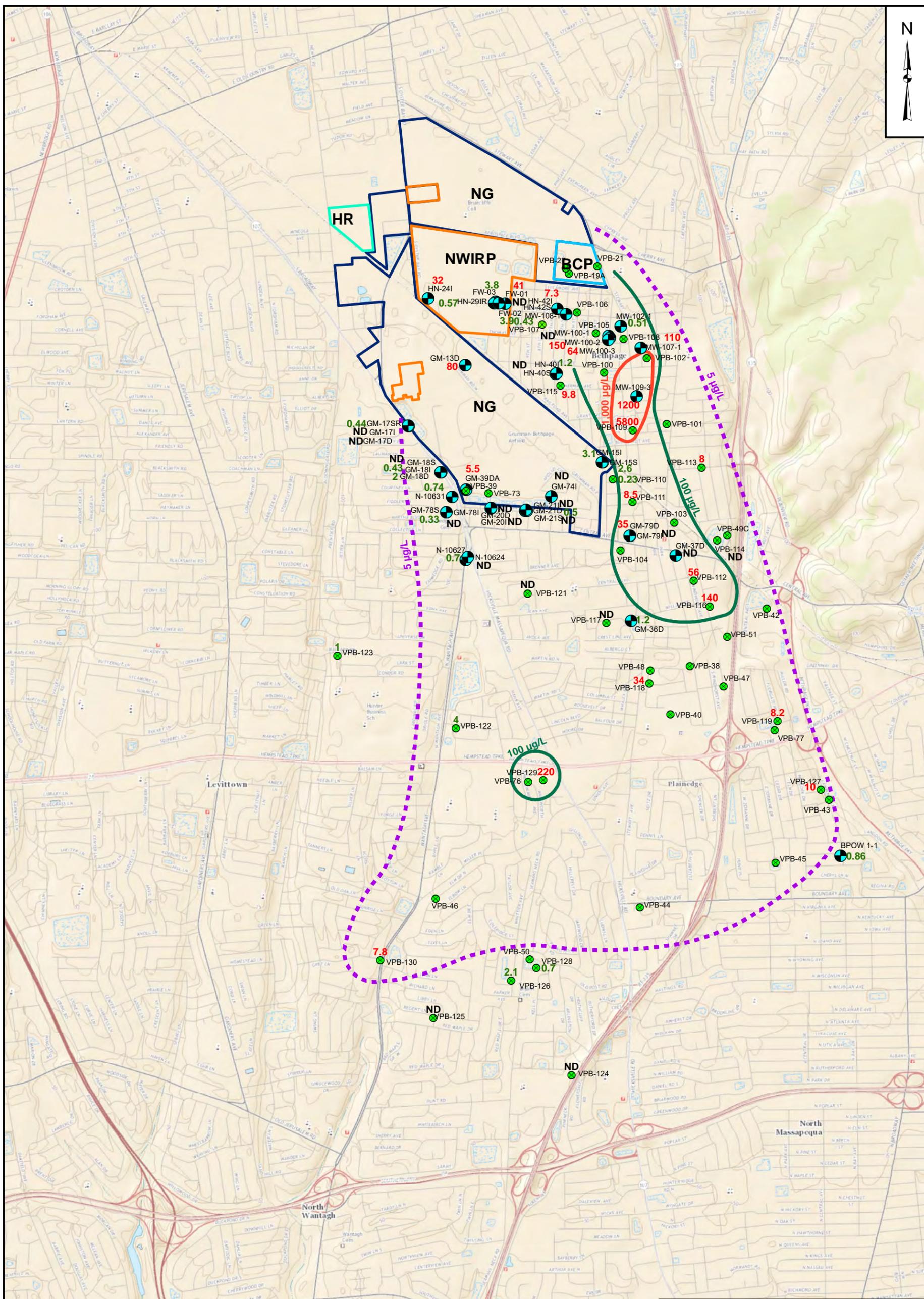
**Notes:**  
 BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**

**NAVFAC**  
 Naval Facilities Engineering Command

**2006 TCE CONCENTRATIONS  
 IN GROUNDWATER  
 (GREATER THAN 700 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-9</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2006\_BP\_700above\_TCE.mxd MMC 5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring

**2011 TCE (0 to 300 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

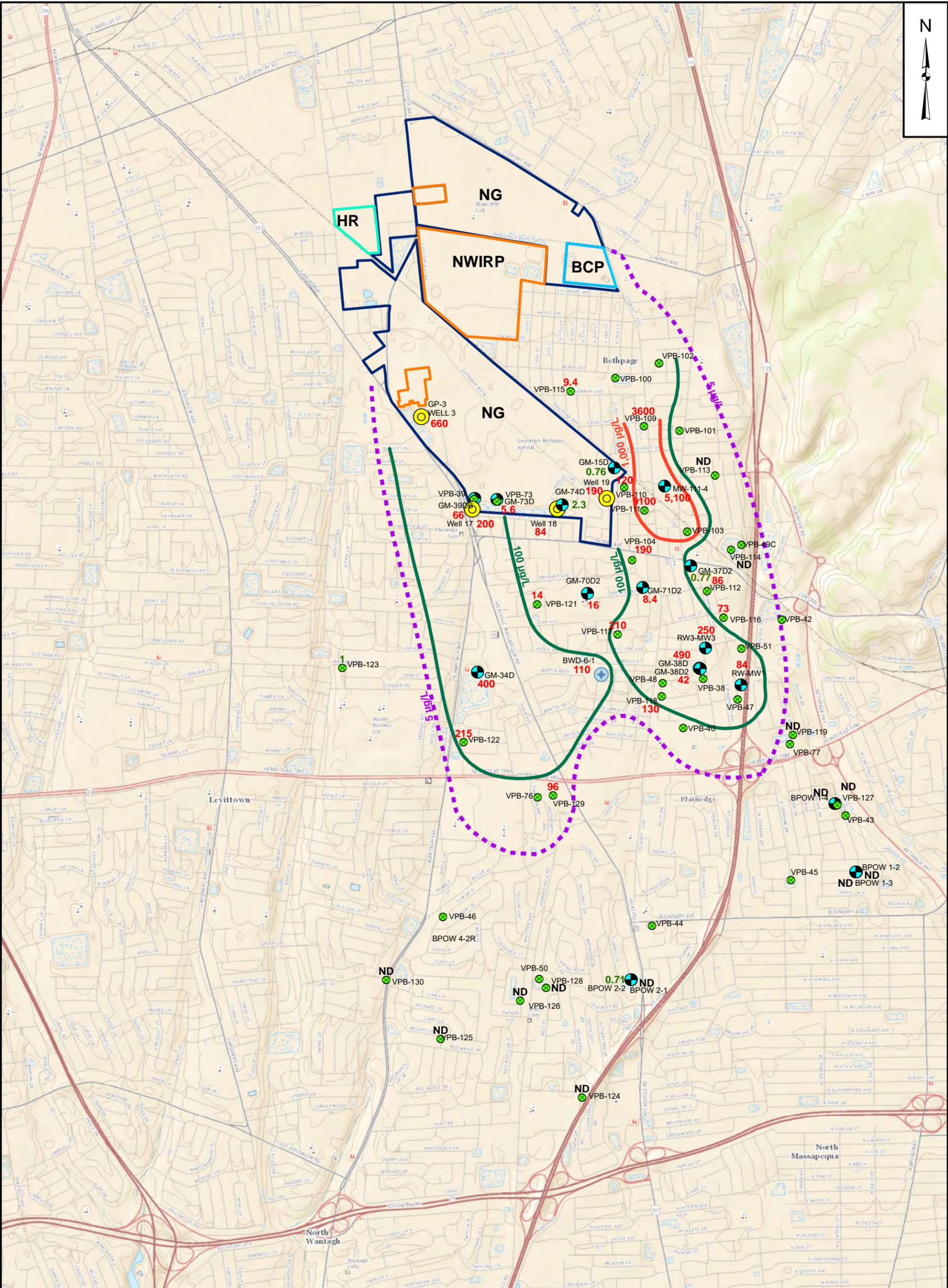
0    1,000    2,000    3,000    4,000  
 Feet

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
 100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L

**NAVFAC**  
 Naval Facilities Engineering Command

**2011 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE09	SCALE AS NOTED
FIGURE NO. <b>B-10</b>	REV DATE 5/18/2017

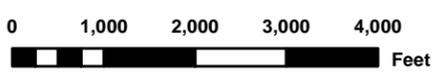


**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply Well

**2011 TCE (300 to 500 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



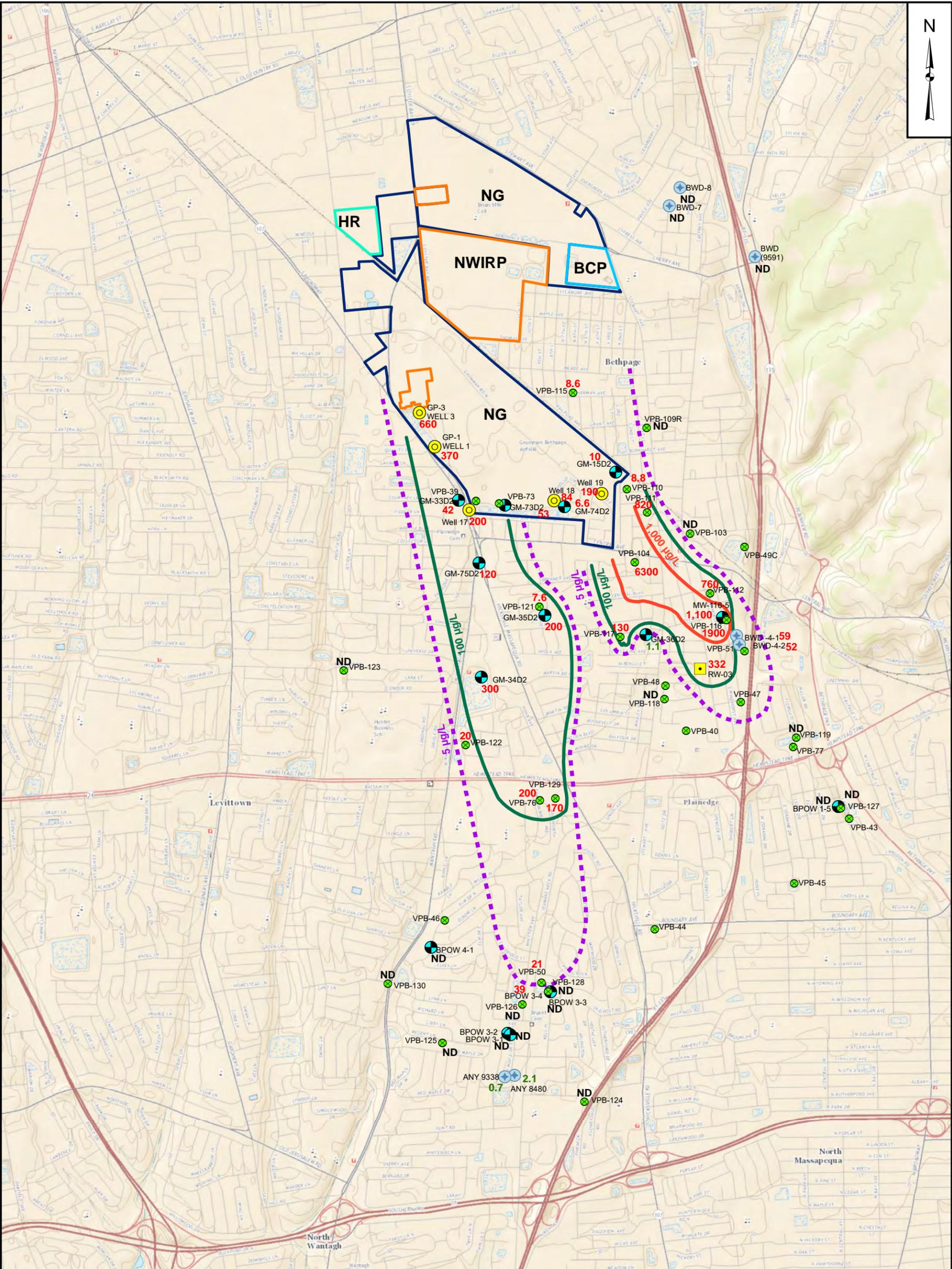
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2011 TCE CONCENTRATION  
 IN GROUNDWATER  
 (300 to 500 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-11</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2011\_BP\_300-500\_TCE.mxd MMC 5/18/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Public Water Supply Well
- Recovery Well
- NG Production Well

**2011 TCE (500 to 700 ft bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 µg/L- microgram per liter  
 TCE- Trichloroethene  
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**

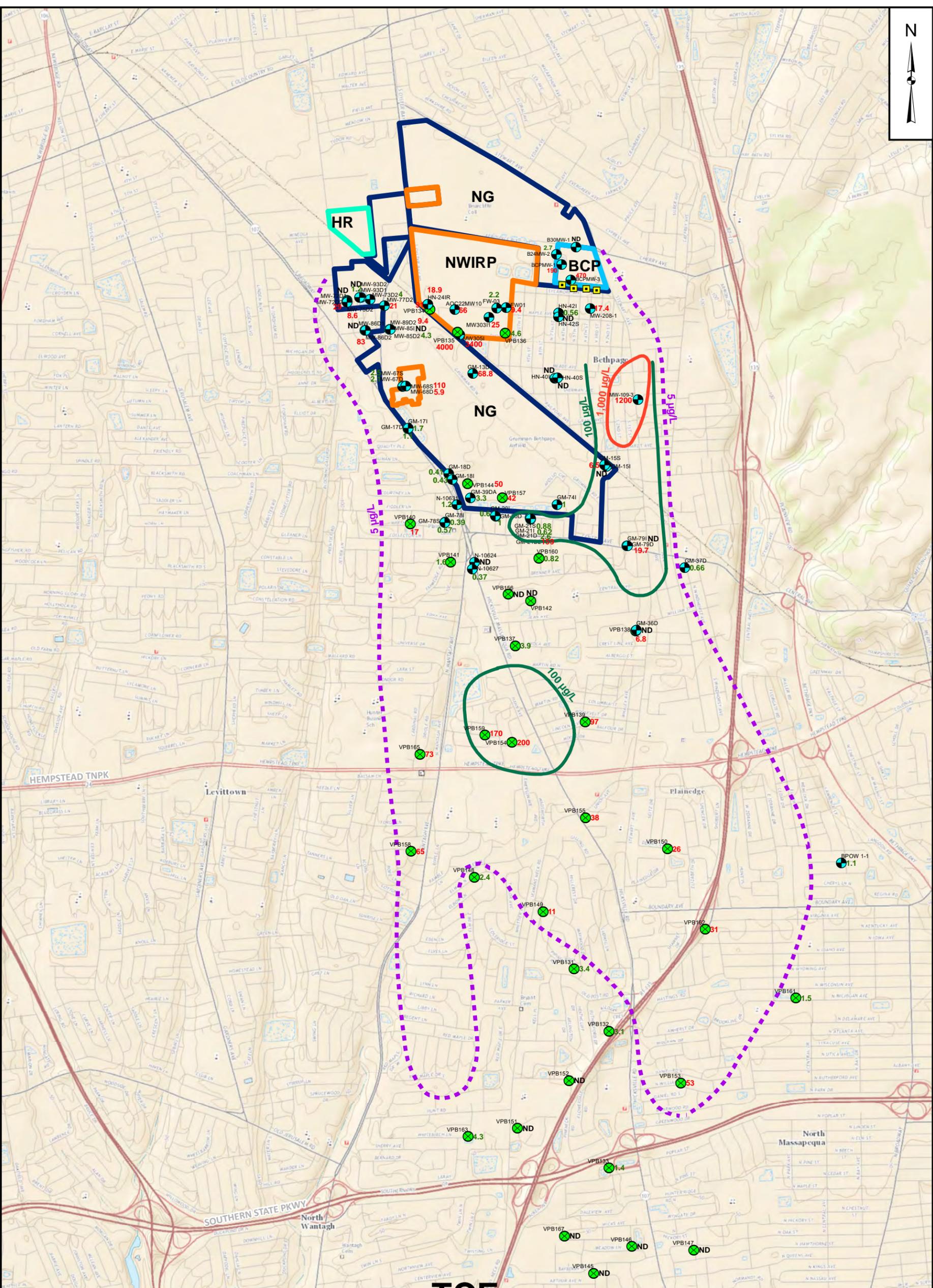
**NAVFAC**  
 Naval Facilities Engineering Command

**2011 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FT BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-12</b>	REV	DATE
			5/18/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MXD\2017\_Sp\Final\2011\_BP\_500-700\_TCE.mxd MMC 5/18/2017





**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well

**2016 TCE (0 to 300 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

**Notes:**

BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility

NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- Trichloroethene  
 µg/L- microgram per liter

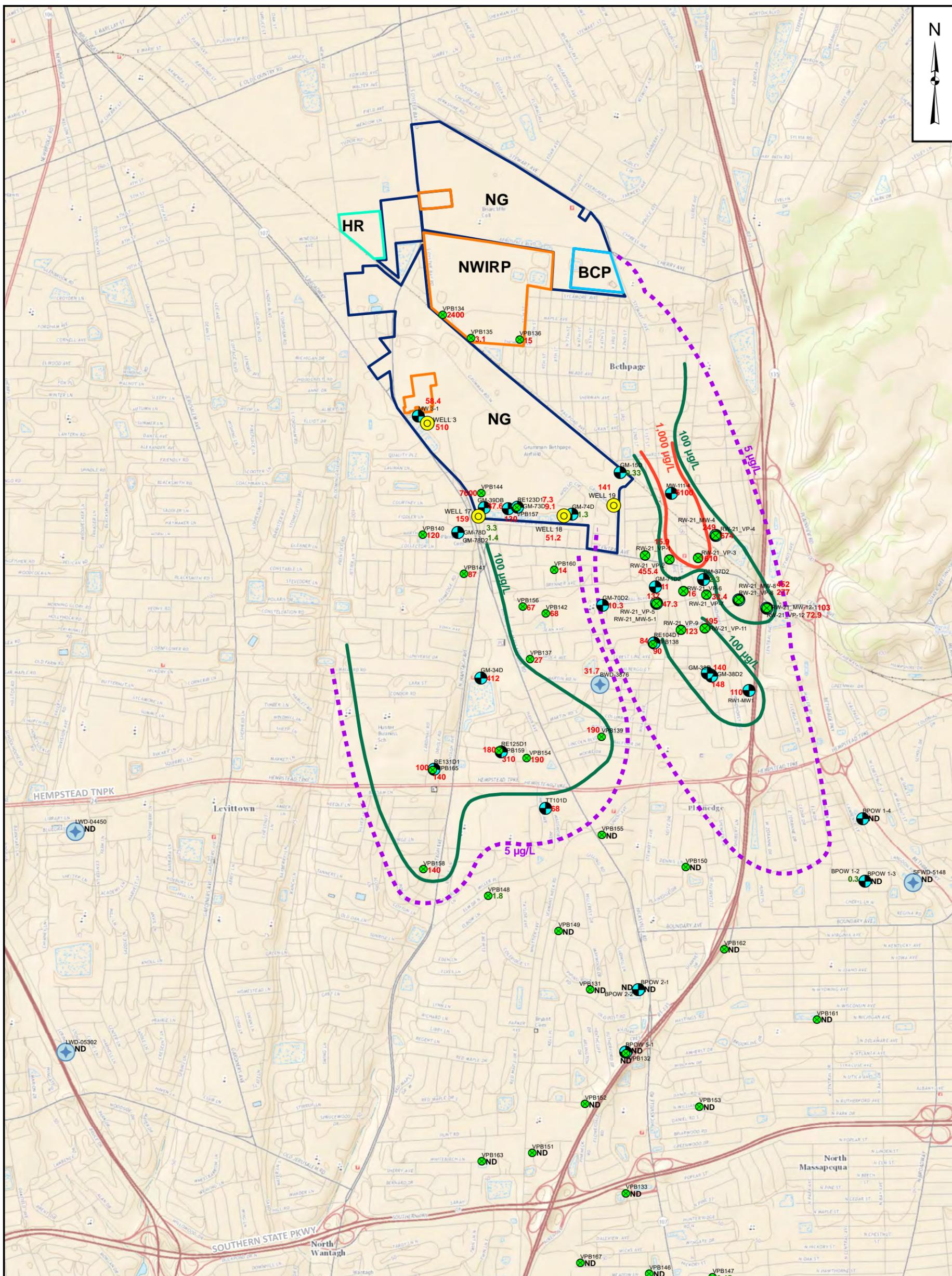
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**

**NAVFAC**  
 Naval Facilities Engineering Command

**2016 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	<b>B-14</b>	REV	DATE
			5/19/2017

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\MXD\2017\_Sp\Final\2016\_BP\_0-300\_TCE\_appB.mxd MMC 5/19/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- NG Production Well
- Public Water Supply Well

**2016 TCE (300 to 500 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE



# TCE (300 to 500 feet bgs)

**Notes:**

NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 OU- Operable Unit  
 TCE- Trichloroethene  
 MCL- maximum contaminant level  
 µg/L- microgram per liter  
 ND- non detect  
 NG- Former Northrop Grumman Facility

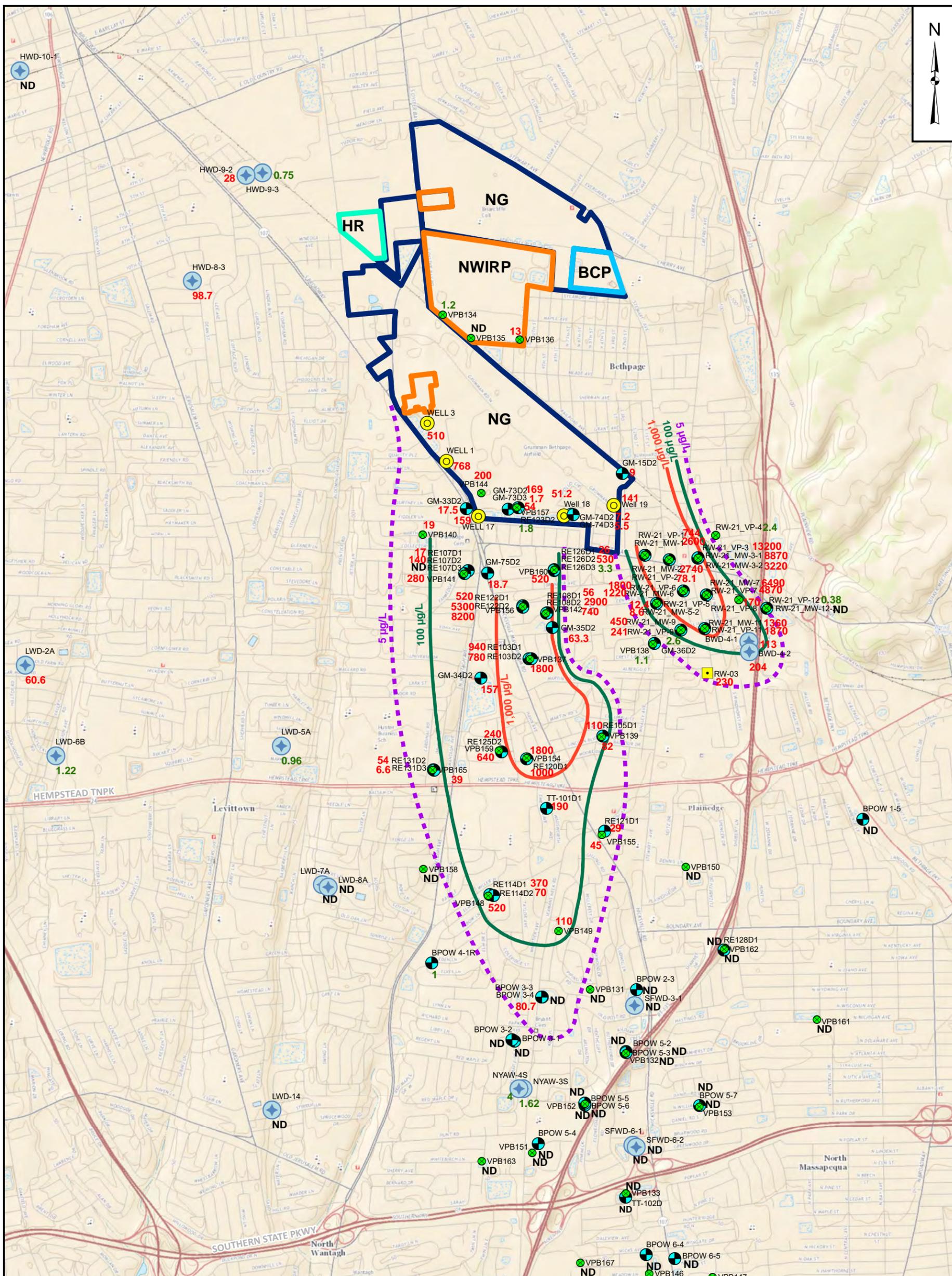
**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**



**2016 TCE CONCENTRATION  
IN GROUNDWATER  
(300 to 500 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	B-15	REV	DATE
			5/19/2017

5/19/2017 NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\MXD\2017\_Sp\Final\2016\_300-500\_TCE\_appb.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- NG Production Well
- Public Water Supply

**2016 TCE (500 to 700 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

**Notes:**  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 BCP- Bethpage Community Park (OU3) bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 OU- Operable Unit  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L

# TCE

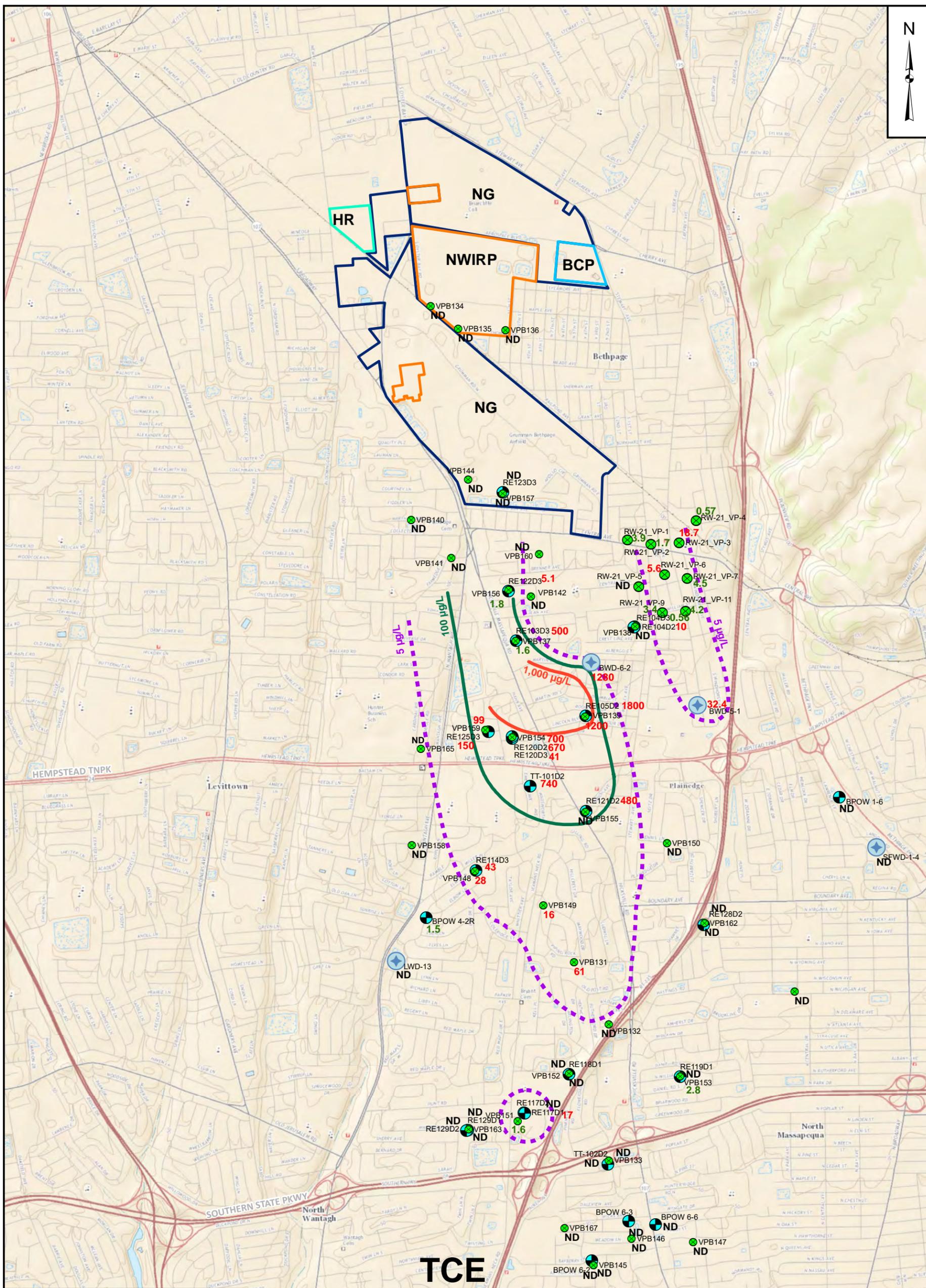
## (500 to 700 feet bgs)

**NAVFAC**  
Naval Facilities Engineering Command

**2016 TCE CONCENTRATION  
IN GROUNDWATER  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE09	SCALE AS NOTED
FIGURE NO. <b>B-16</b>	REV DATE 5/19/2017

5/19/2017 NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\MXD\2017\_Sp\Final\2016\_500-700\_TCE\_appb.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Public Water Supply

**2016 TCE (Greater than 700 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

# TCE (Greater than 700 feet bgs)

**Notes:**  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility

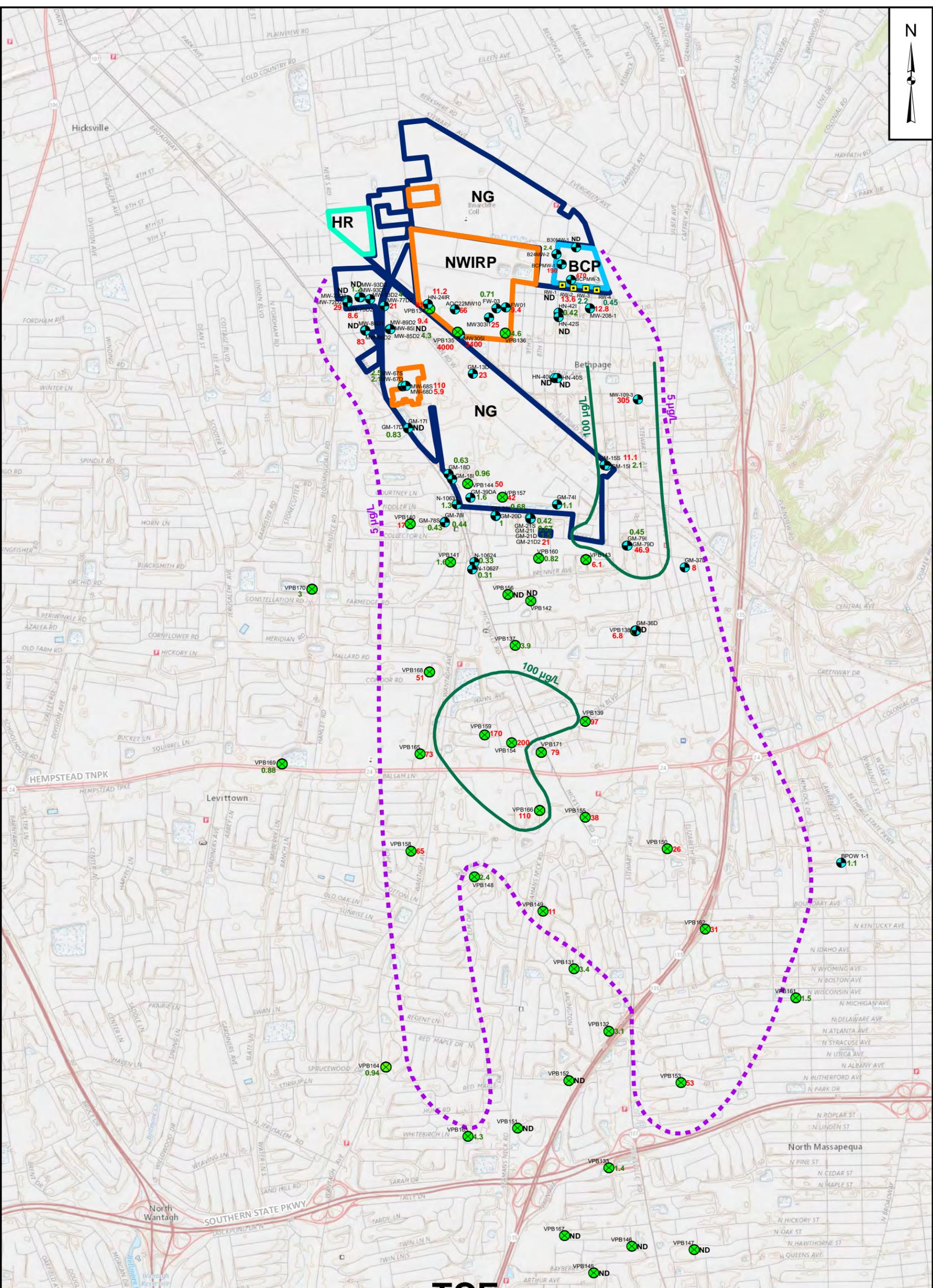
100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L



**2016 TCE CONCENTRATION  
 IN GROUNDWATER  
 (GREATER THAN 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE09	SCALE	AS NOTED
FIGURE NO.	B-17	REV	DATE
			5/19/2017

NOR P:\GIS\_files\Bethpage\MAP DOCS\MMXD2017\_Sp\Final\2016\_BP\_700below\_TCE\_appB.mxd MMC 5/19/2017



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well

**2017 TCE (0 to 300 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0    1,000    2,000    3,000    4,000  
 Feet

**Notes:**

BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility

NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- Trichloroethene  
 µg/L- microgram per liter

**100- Exceeds TCE MCL of 5µg/L**  
**1.6- Below TCE MCL of 5µg/L**

# TCE

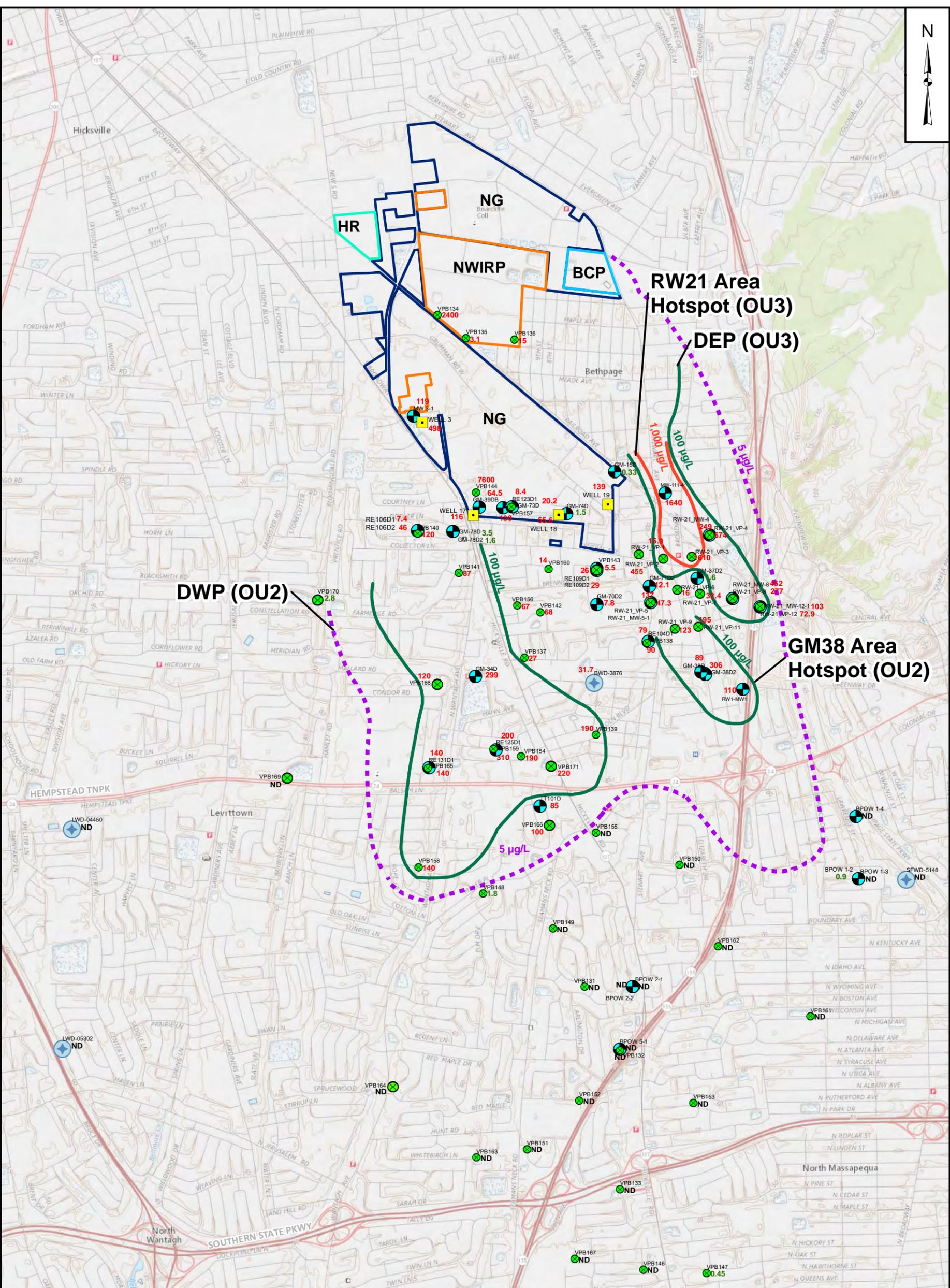
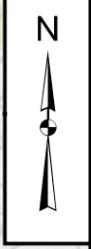
## (0 to 300 feet bgs)



**2017 TCE CONCENTRATION  
 IN GROUNDWATER  
 (0 to 300 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE16	SCALE AS NOTED
FIGURE NO. <b>B-18</b>	REV DATE 5/9/2018

NOR-P:GIS\_files\Bethpage\MAP\_DOCS\MXD\BP\_OU2\_2018\WIN\2017\_BP\_0-300\_TCE.mxd MMC 5/9/2018



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply Well

**2017 TCE (300 to 500 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0    1,000    2,000    3,000    4,000  
 Feet

## TCE

### (300 to 500 feet bgs)

**Notes:**  
 BCP- Bethpage Community Park (OU3)    NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 DEP- Deep Eastern Plume (OU3)    OU- Operable Unit  
 DWP- Deep Western Plume (OU2)    TCE- Trichloroethene  
 HR- Hooker Ruco Superfund Site    µg/L- microgram per liter  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility

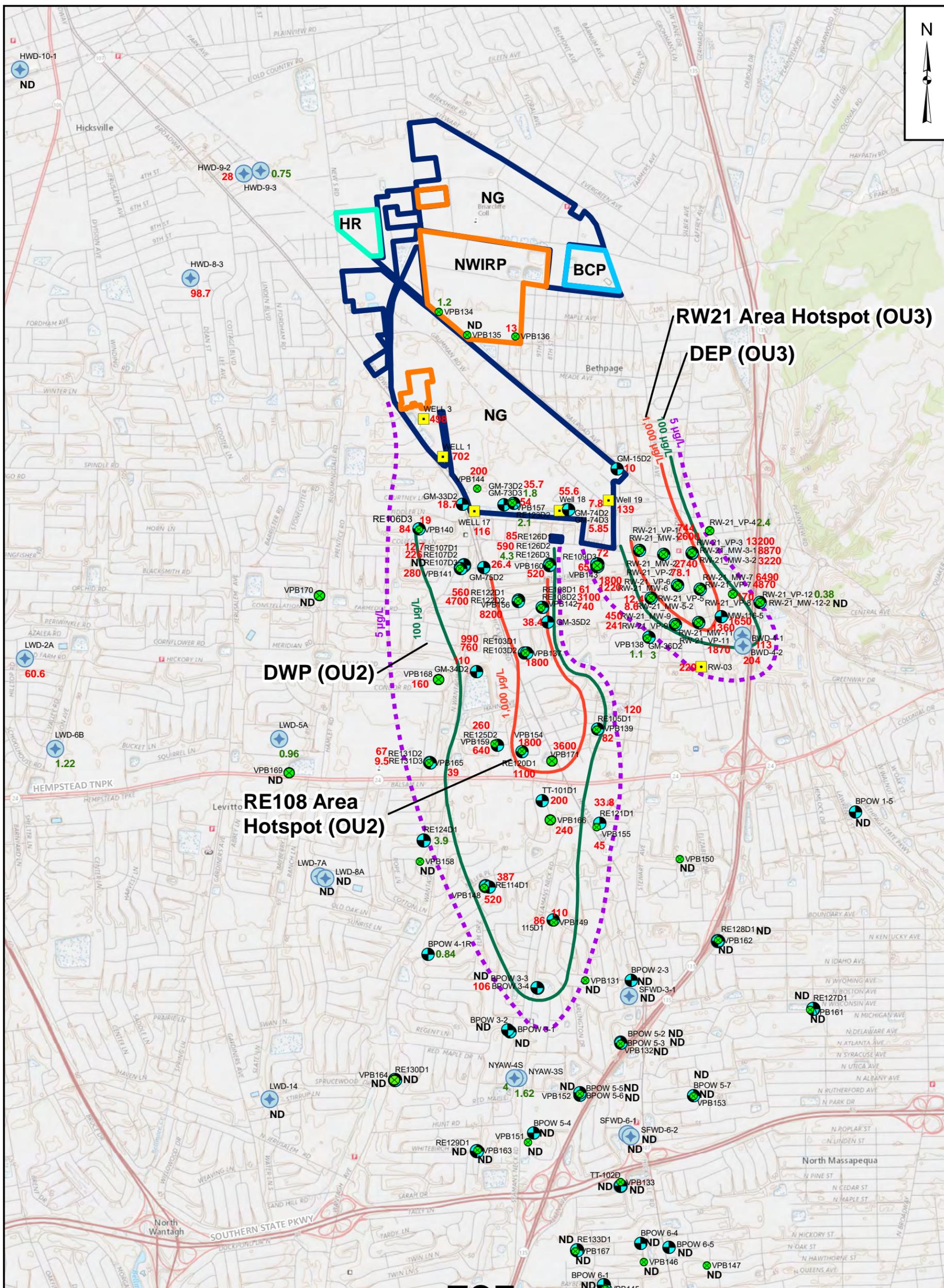
100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L

**NAVFAC**  
 Naval Facilities Engineering Command

**2017 TCE CONCENTRATION  
 IN GROUNDWATER  
 (300 to 500 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE16	SCALE AS NOTED
FIGURE NO. B-19	REV DATE 5/16/2018

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMX\BEP\_OU2\_2018\WIN\2017\_300-500\_TCE.mxd MMC 5/16/2018



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply

**2017 TCE (500 to 700 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

**Notes:**  
 BCP- Bethpage Community Park (OU3) NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 DEP- Deep Eastern Plume (OU3) OU- Operable Unit  
 DWP- Deep Western Plume (OU2) TCE- Trichloroethene  
 HR- Hooker Ruco Superfund Site µg/L- microgram per liter  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility

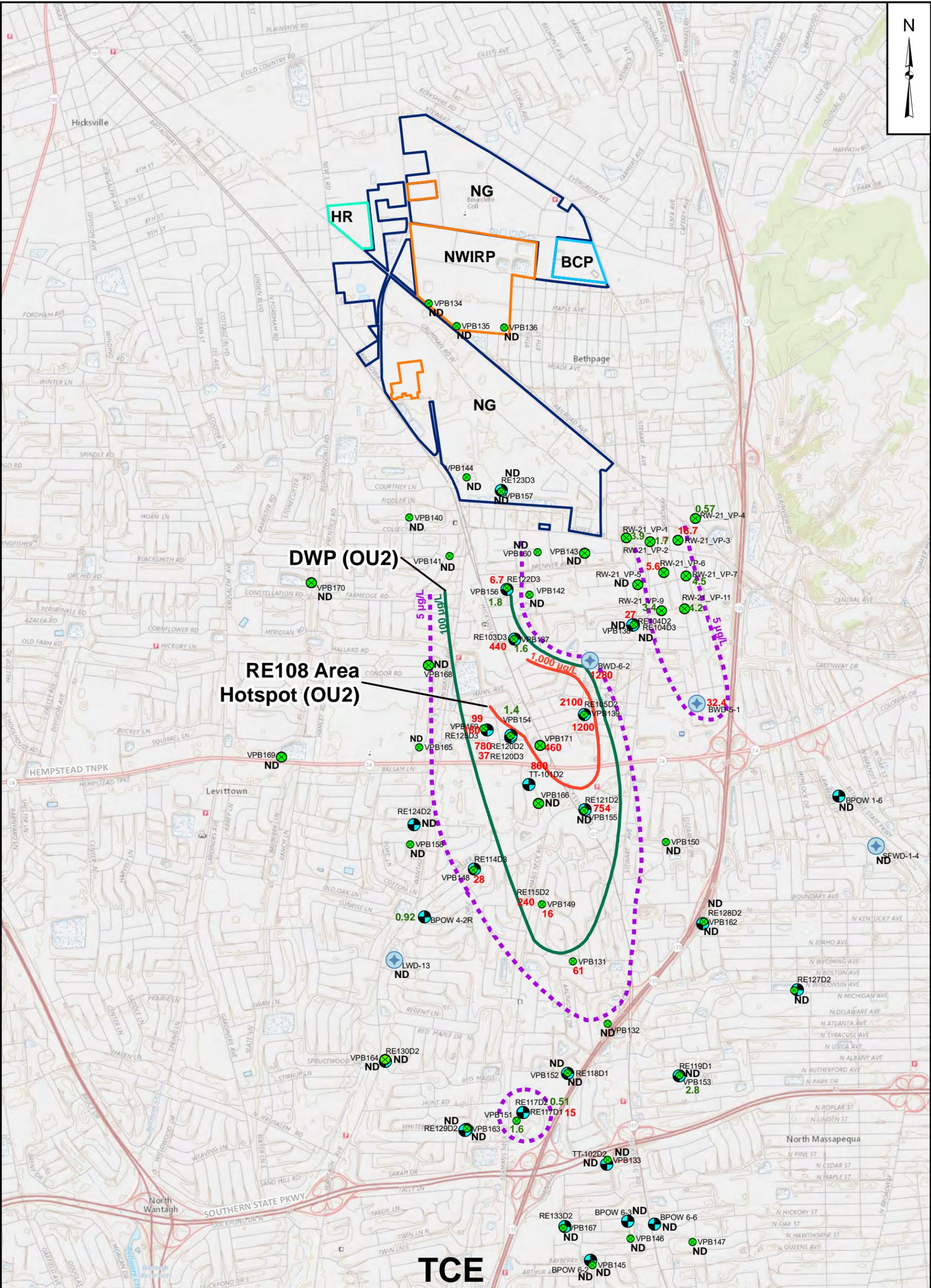
100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L

**NAVFAC**  
 Naval Facilities Engineering Command

**2017 TCE CONCENTRATION  
 IN GROUNDWATER  
 (500 to 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE16	SCALE	AS NOTED
FIGURE NO.	B-20	REV	DATE
			5/8/2018

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMX\BEP\_OU2\_2018\WIN\2017\_500-700\_TCE.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Public Water Supply

**2017 TCE (Greater than 700 feet bgs)**

- 5 µg/L TCE (inferred)
- 100 µg/L TCE
- 1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

# TCE (Greater than 700 feet bgs)

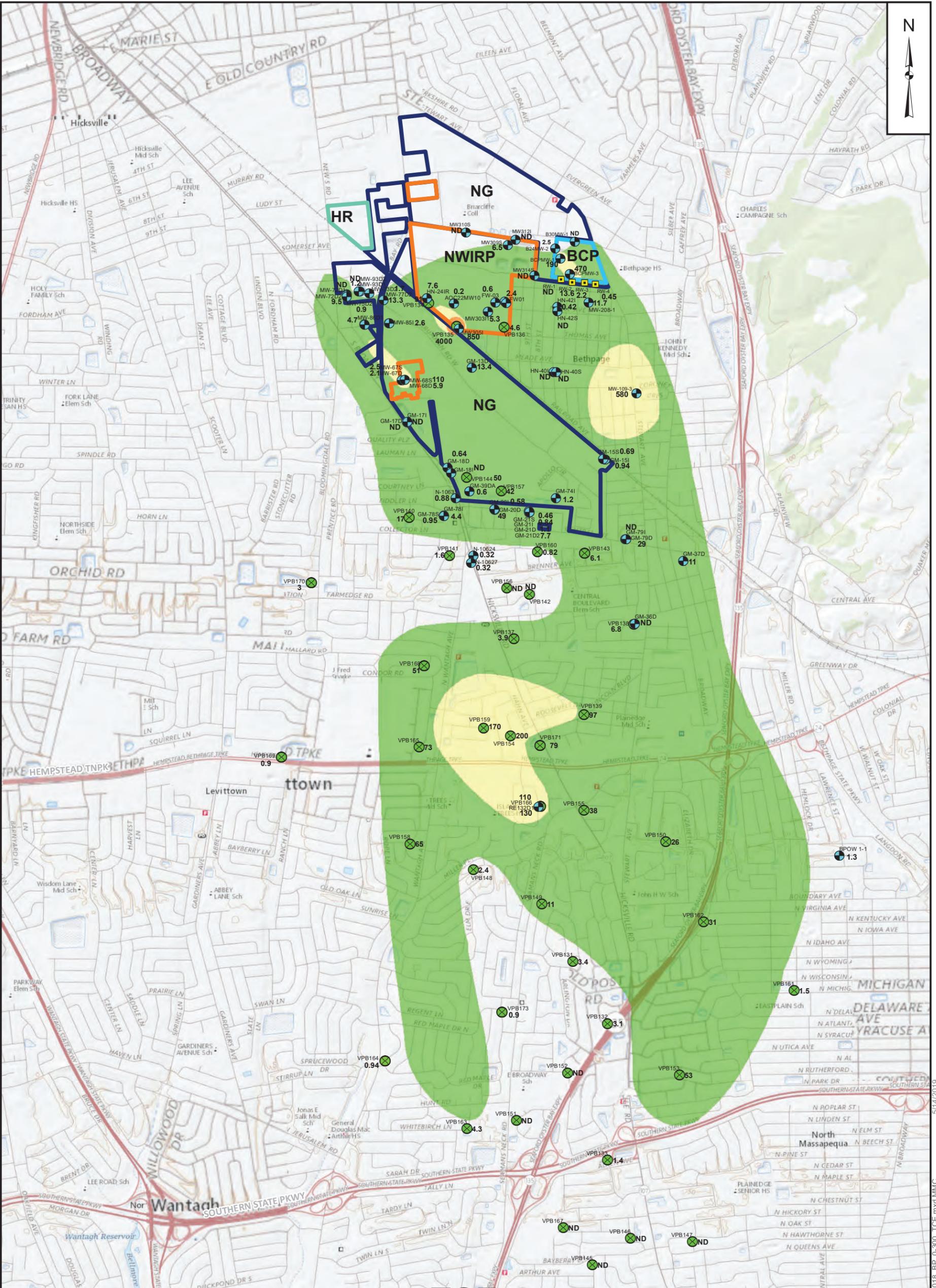
**Notes:**  
 bgs- below ground surface  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 MCL- maximum contaminant level  
 ND- non detect  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 OU- Operable Unit  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 100- Exceeds TCE MCL of 5µg/L  
 1.6- Below TCE MCL of 5µg/L



**2017 TCE CONCENTRATION  
 IN GROUNDWATER  
 (GREATER THAN 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

FILE	112G08005-WE16	SCALE	AS NOTED
FIGURE NO.	B-21	REV	DATE
			5/8/2018

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMXD\BP\_OU2\_2018\WIN\2017\_BP\_700below\_TCE.mxd MMC 5/8/2018



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well

**2018 TCE (0 to 300 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

0    1,000    2,000    3,000    4,000  
 Feet

## TCE (0 to 300 feet bgs)

**Notes:**

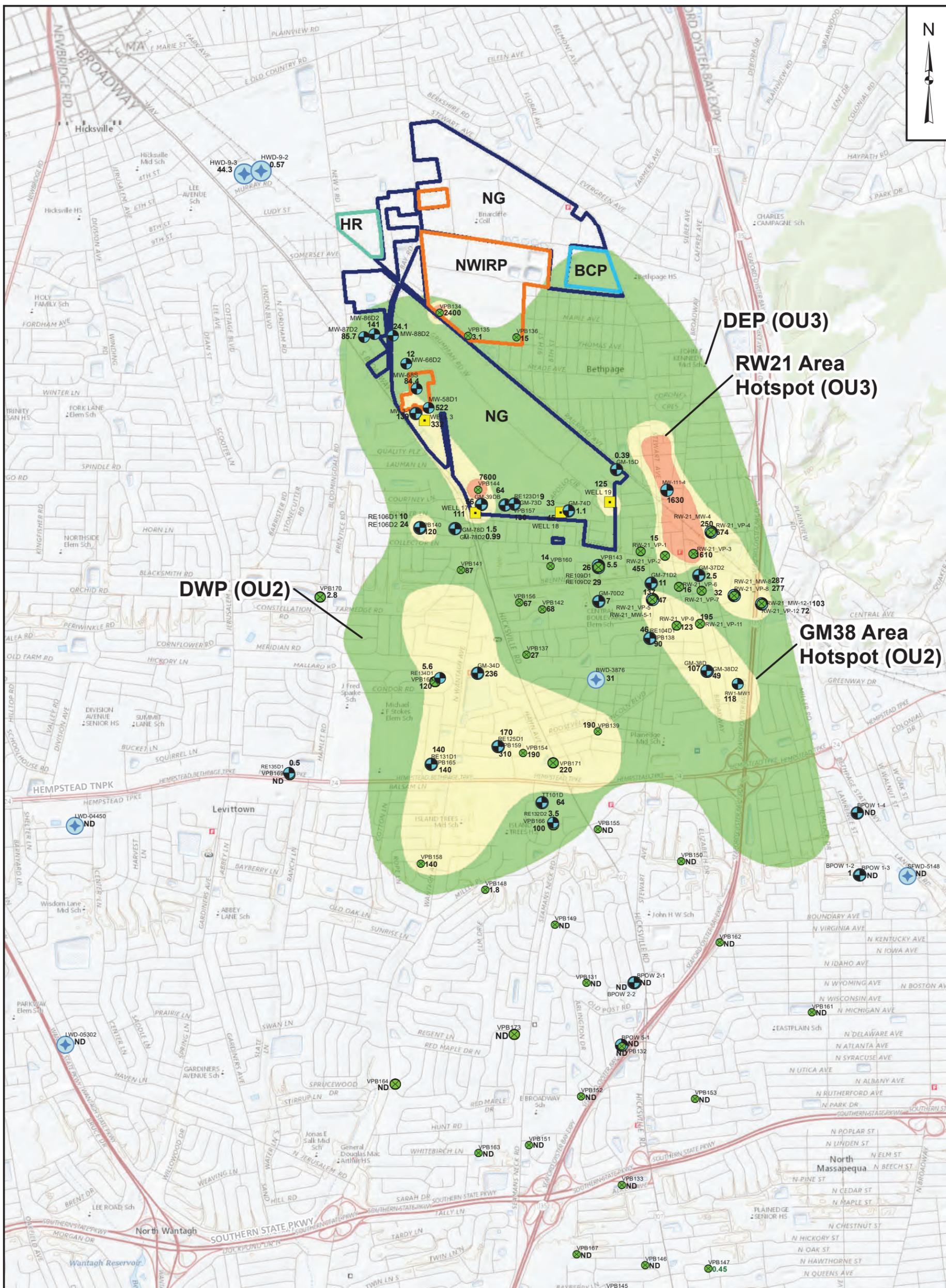
- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- DEP- Deep Eastern Plume (OU3)
- DWP- Deep Western Plume (OU2)
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MCL- maximum contaminant level
- MWD-Massapequa Water District
- ND- non detect
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- OU- Operable Unit
- SFWD-South Farmingdale Water District
- TCE- Trichloroethene
- µg/L- microgram per liter
- 12- TCE value**
- \* VPB-151, 159, 166 & 168 location updated based on survey data



**2018 TCE CONCENTRATION  
IN GROUNDWATER  
(0 to 300 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

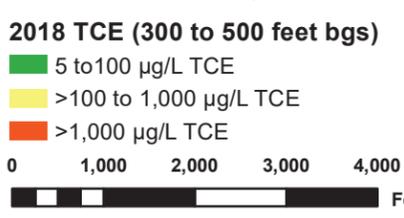
FILE 112G08005-WE16	SCALE AS NOTED
FIGURE NO. <b>B-23</b>	REV DATE 5/14/2019

5/14/2019 NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMXD\2019\_SP\2018\_BP\_0-300\_TCE.mxd MMC



# TCE (300 to 500 feet bgs)

- Legend**
- Monitoring Well
  - Vertical Profile Boring
  - Recovery Well
  - Public Water Supply Well



**Notes:**

BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 DEP- Deep Eastern Plume (OU3)  
 DWP- Deep Western Plume (OU2)  
 HR- Hooker Ruco Superfund Site  
 LWD- Levittown Water District  
 MCL- maximum contaminant level  
 MWD- Massapequa Water District  
 ND- non detect

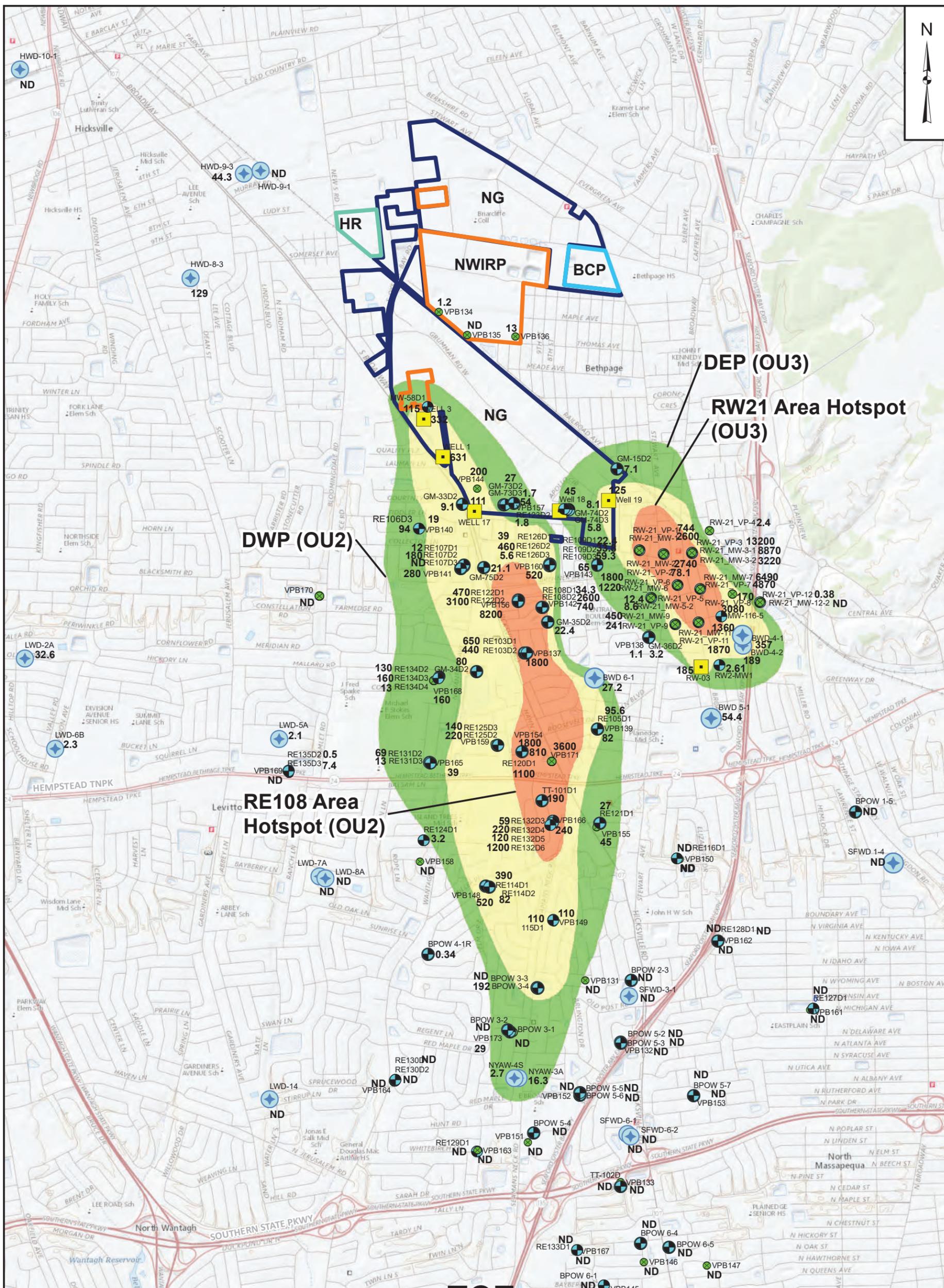
NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW- New York American Water  
 OU- Operable Unit  
 SFWD- South Farmingdale Water District  
 TCE- Trichloroethene  
 µg/L- microgram per liter  
 12- TCE value  
 \* VPB-151, 159, 166 & 168 location updated based on survey data



**2018 TCE CONCENTRATION  
IN GROUNDWATER  
(300 to 500 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE16	SCALE AS NOTED
FIGURE NO. <b>B-24</b>	REV DATE 5/14/2019

5/14/2019 NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\112G08005-WE16\_300-500\_TCE.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Recovery Well
- Public Water Supply

**2018 TCE (500 to 700 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

**TCE**  
**(500 to 700 feet bgs)**

**Notes:**

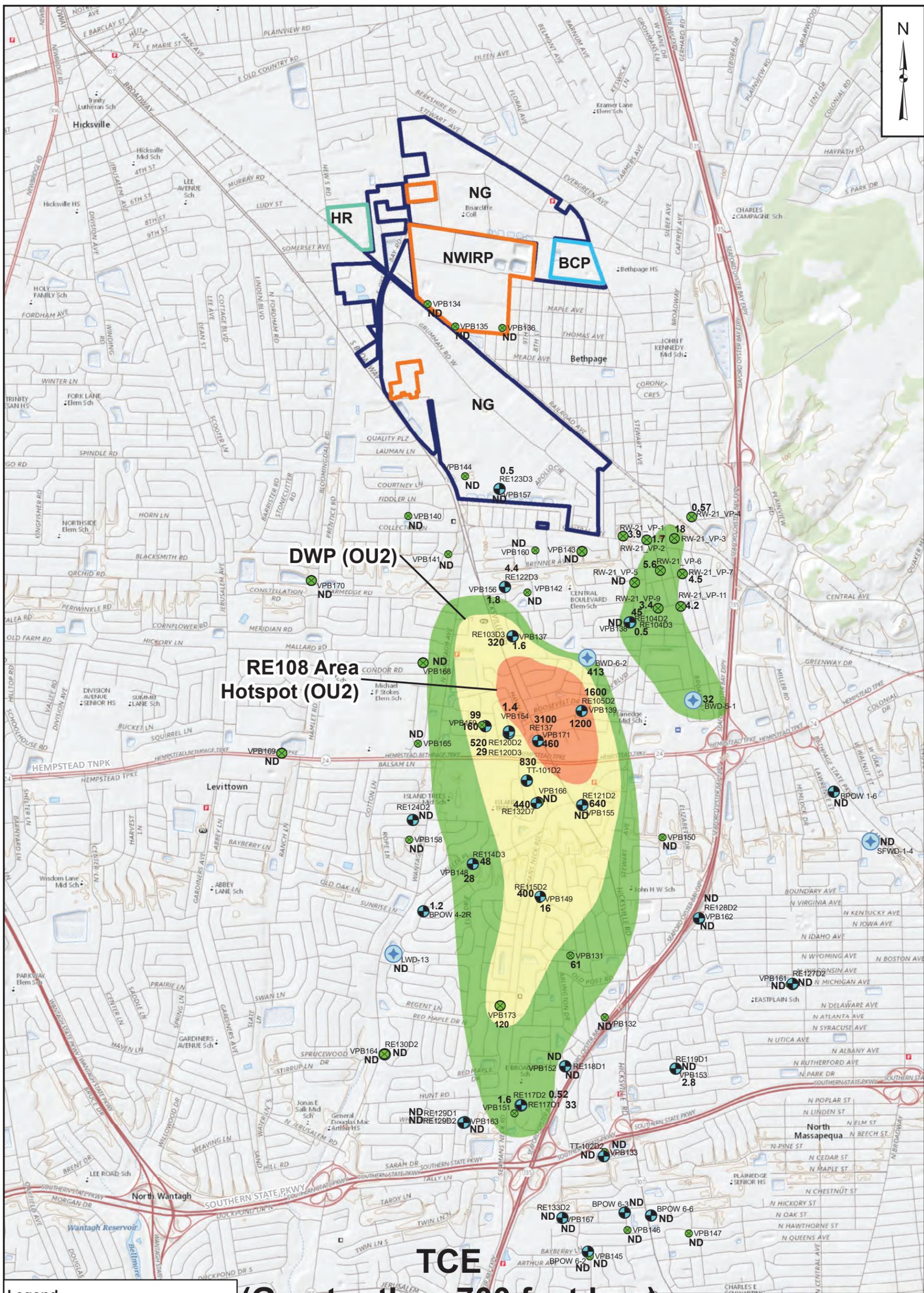
- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- DEP- Deep Eastern Plume (OU3)
- DWP- Deep Western Plume (OU2)
- HR- Hooker Ruco Superfund Site
- LWD-Levitown Water District
- MCL- maximum contaminant level
- MWD-Massapequa Water District
- ND- non detect
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- OU- Operable Unit
- SFWD-South Farmingdale Water District
- TCE- Trichloroethene
- µg/L- microgram per liter
- 12- TCE value
- \* VPB-151, 159, 166 & 168 location updated based on survey data

**NAFAC**  
Naval Facilities Engineering Command

**2018 TCE CONCENTRATION  
IN GROUNDWATER  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

FILE 112G08005-WE16	SCALE AS NOTED
FIGURE NO. <b>B-25</b>	REV DATE 5/14/2019

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMXD\2019\_SP\2018\_500-700\_TCE\_new.mxd MMC



**Legend**

- Monitoring Well
- Vertical Profile Boring
- Public Water Supply

**2018 TCE (Greater than 700 feet bgs)**

- 5 to 100 µg/L TCE
- >100 to 1,000 µg/L TCE
- >1,000 µg/L TCE

0 1,000 2,000 3,000 4,000 Feet

## TCE (Greater than 700 feet bgs)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- DEP- Deep Eastern Plume (OU3)
- DWP- Deep Western Plume (OU2)
- HR- Hooker Ruco Superfund Site
- LWD- Levittown Water District
- MCL- maximum contaminant level
- MWD- Massapequa Water District
- ND- non detect
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW- New York American Water
- OU- Operable Unit
- SFWD- South Farmingdale Water District
- TCE- Trichloroethene
- µg/L- microgram per liter
- 12- TCE value
- \* VPB-151, 159, 166 & 168 location updated based on survey data



### 2018 TCE CONCENTRATION IN GROUNDWATER (GREATER THAN 700 FEET BGS) NWIRP BETHPAGE, NEW YORK

FILE	112G08005-WE16	SCALE	AS NOTED
FIGURE NO.	<b>B-26</b>	REV	DATE
			4/24/2019

4/24/2019 NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\MXD\2019\_SP\2018\_BP\_700below\_TCE.mxd MMC

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APPENDIX C  
HYDROGEOLOGICAL CALCULATIONS

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## **APPENDIX C**

### **HYDROGEOLOGICAL CALCULATIONS**

#### **1.0 INTRODUCTION**

This Appendix provides backup for hydrogeological evaluations presented in the report, with both regional and local groundwater flow patterns presented. Overall, the regional groundwater flow is to the south southeast. The effects of groundwater withdrawal on both the regional and local groundwater flow patterns are illustrated through the construction of several maps depicting the magnitude and areal extent of changes in groundwater elevations caused by the pumping of public water supply wells located south of Hempstead Turnpike. The data used to construct these maps were obtained either during the two rounds of manual groundwater measurements (regional maps) or as recorded by electronic transducers placed in selected wells (local maps).

The withdrawal of groundwater by supply wells lowers the groundwater elevation in the vicinity of the wells. When the pumps are on, the groundwater elevations decrease, and when the pumps are turned off, the groundwater elevations rise back towards their natural (or “ambient”) conditions. The degree or magnitude of groundwater lowering and the areal expanse within which the lowering occurs is related to the hydraulic properties of the aquifer materials and the pumping rate of the supply well or wells; the greater the pumping rate, the greater the effects on groundwater elevation. Because groundwater flows from areas of higher groundwater elevation to areas of lower elevation, the pumping of the supply wells create local “sinks” into which groundwater can flow into and be drawn from any direction, including directions that are different than those delineated by the regional groundwater flow maps. Extensive groundwater modeling has been conducted to further evaluate plume migration and its’ potential impact on currently un-impacted supply wells.

Area-wide groundwater levels in monitoring wells have been measured through the use of transducers, which are battery-powered instruments that are placed in the well and periodically record both time and water level. By recording the water levels at 5-minute intervals, very accurate graphs can be constructed that chart the groundwater levels in the well throughout a single day and throughout an entire pumping season (spring through fall).

#### **2.0 REGIONAL GROUNDWATER FLOW CONDITIONS**

Five rounds of groundwater elevation measurements were performed during 2019. The rounds were collected in March, April, May, July, and December. The depth-to-water measurements that were manually collected at each well were converted to elevations above mean sea level, which are subsequently used to interpret groundwater flow directions. Regional isocontour maps (isocontours are lines connecting locations of equal groundwater elevation) were developed for the two subsurface depth intervals of 500 to

700 feet below ground surface (bgs) and greater than 700 feet bgs. These two depth intervals contain the majority of the off-property mass of VOCs. In addition, there are insufficient monitoring wells screened in the 0 to 300 feet bgs and 300 to 500 feet bgs depth intervals near and south of Hempstead Turnpike (1 and 8, respectively), and therefore isocontour maps were not developed for the two shallower depth intervals.

The 500 to 700 feet bgs and greater than 700 feet bgs isocontour maps for May 2019 in which the manual water level readings were used are included in the report as Figures 3-9 and 3-11 and Figures C-1 and C-3. The isocontour maps for July 2019 in which the manual water level readings were used are included in the report as Figures 3-13 and 3-15 and Figures C-5 and C-7.

The 500 to 700 feet bgs and greater than 700 feet bgs isocontour maps for May 2019 in which the transducer water level readings were used are included in the report as Figures 3-10 and 3-12 and Figures C-2 and C-4. The isocontour maps for July 2019 in which the transducer water level readings were used are included in the report as Figures 3-14 and 3-16 and Figures C-6 and C-8.

There are two seasonal differences in the water levels. One difference is the groundwater elevation at individual locations varies, which is due to either seasonal fluctuation or changes in groundwater withdrawal rates by the supply wells. The second difference is the change in the hydraulic gradient, as determined by the groundwater elevation between two points. The hydraulic gradient gets steeper as the contour lines become closer together on the map. The change in hydraulic gradient is primarily caused by the groundwater withdrawal by the supply wells.

There are also differences in the water levels within each season, including the changes in groundwater elevation and hydraulic gradient discussed above. These changes are primarily due to differences in the hydraulic properties of the various aquifer materials that consist of fine- to coarse-grained sands and gravel but also contain varying amounts of silt and clay. The hydraulic conductivity of the aquifer layers (or the “ease” with which groundwater flows through the material) varies with the grain size of the sands and the amount of finer-grained material that may retard the flow rate.

The interpreted groundwater flow directions are illustrated by blue arrows on the contour maps. Groundwater flow direction is perpendicular to the isocontour lines. On a regional scale, the groundwater south of Hempstead Turnpike consistently flows in a south to southeast direction. These maps are considered regional flow interpretations that define the overall, area-wide groundwater flow directions, but do not define smaller-scale variations in groundwater flow due to more localized changes in groundwater elevations or aquifer properties. Note that the effects of the groundwater pumping by the supply wells are not apparent on these maps, other than the lowering of the groundwater elevations through the summer, particularly in the monitoring wells located closest to the supply wells.

### **Evaluating the Effects of Well Pumping on Regional Groundwater Flow Patterns**

Local municipalities utilizing supply wells create “sinks” or capture zones north of the Southern State Parkway. These sinks create a disruption to the natural groundwater flow as represented in the drawdown

represented in Figure C-11. Under this interpretation, groundwater flowing into the southern sinks (either induced by pumping or under regional flow) will be removed from the aquifer and not continue south. However, this interpretation is highly constrained by the uncertainty introduced by the large periodic (even daily) fluctuations in groundwater levels that were detected by the transducers and illustrated in Charts C-1 to C-4. Because the manual groundwater level measurements represented in Figures C-1, C-3, and C-5 are not truly synoptic (taken at exactly the same time), the measurements for some wells may represent “pump off” conditions (higher water elevation), while the elevations in other wells may represent “pump on” conditions (lower elevation conditions). Thus, these regional flow interpretations based on groundwater elevation are potentially (or very likely) a mix of pumping and non-pumping measurements that are not representative of any particular condition that actually exists during the well pumping cycles. These measurements are not likely to highly impact regional flow interpretations, but they cannot be used to delineate the localized flow conditions that are created by the cyclic pumping of the different supply wells. Figures C-2, C-4, C-6, and C-9 to C-11 are synoptic water levels that reveal some of the influence from the regional supply wells.

### **3.0 LOCALIZED GROUNDWATER FLOW CONDITIONS**

Charts C-1 through C-4 illustrate the groundwater elevations recorded at five-minute intervals in thirteen to eighteen monitoring wells located within the project area from May 2019 through October 2019. These charts reflect short-term and long-term fluctuations in elevation that occurred from spring through fall as the demands from the different supply wells varied throughout the seasons. The charts are annotated with the Navy’s interpretation of the well(s) operating during the recorded intervals, but it is important to understand that these interpretations partly rely on general usage information provided by the water suppliers. The actual pumping histories (principally “on” or “off”) of the wells during the recording period are not known.

Chart C-1 illustrates the groundwater elevations in May 2019, when regional groundwater levels are typically at their maximums. This chart shows a slight decrease in pumping influence over the same period in 2018. This timeframe is interpreted to reflect the conditions attributable to the regular pumping of wells NYAW-3S and NYAW-4S and the periodic pumping of wells SFWD 3-1, SFWD 6-1, and SFWD 6-2. The cyclic pumping creates corresponding short-term changes in groundwater elevations of up to two feet. The changes attributable to the individual wells are interpretative, and are based solely on the assumption that the greatest changes in water levels will occur in the monitoring wells that are located closest to the pumping well. For example, monitoring well BPOW 2-3 is located closest to supply well SFWD 3-1, so the largest variations recorded for BPOW 2-3 are believed to be caused by the pumping of SFWD 3-1. Chart C-1 also contains and reflects the period of maximum groundwater elevation that was observed during the 2019 recording season; this yearly maximum occurred on May 15 and is highlighted by the vertical red bar.

Chart C-2 illustrates the groundwater elevations from June into July 2019, when groundwater demand increases, especially during relatively short-lived “hot spells.” The periodic pumping of SFWD supply wells

3-1, 6-1, and 6-2 and NYAW-3S and 4S are apparent on this chart. The cyclic pumping creates corresponding short-term changes in groundwater elevations of over two feet during this period.

Charts C-3 and C-4 illustrate the groundwater elevations throughout the summer, the months of August 2019 through early October 2019. These months typically represent the period of heaviest groundwater demand, and reflect both the near-continuous usage of primary supply wells and the frequent on-and-off cycling of seasonal supply wells. Note that the combined pumping of the wells can create daily fluctuations in the local groundwater elevations that are greater than 2 feet in magnitude. Chart C-4 also contains and reflects the time of minimum groundwater elevation that was observed during the 2019 recording season; this yearly minimum occurred on October 1 and is highlighted by the vertical red bar.

### **Evaluating the Effects of Well Pumping on Local Groundwater Flow Patterns**

Figures C-9 to C-11 are constructed from groundwater elevations recorded by the transducers. The transducers are synchronized and record the time that the measurements are taken. Contour maps representing synoptic “snapshots” of groundwater elevations can be constructed, which eliminates the uncertainty that is introduced by the cyclic fluctuations in groundwater levels caused by the pumping of the supply wells. Every well does not have a transducer, this limits the number of wells that can be analyzed on Figures C-9 and C-11.

Figure C-9 is a groundwater elevation contour map as measured on May 15 at 12:00 p.m. (the yearly maximum denoted by the red bar on Chart C-1). Groundwater generally flows to the south, which is consistent with the directions illustrated by the regional flow maps. A subtle bending or deflection of the contours is detected in the vicinity of the SFWD 6-1 and SFWD 6-2 supply wells, which is interpreted to reflect the pumping of these wells.

Figure C-10 is a groundwater elevation contour map as measured on October 1 at 12:30 p.m. (the yearly minimum denoted by the red bar on Chart C-4, during a time of the day when all supply wells are apparently pumping, and during the time that represents the maximum drawdown recorded during the entire season). Here, the overall direction of groundwater flow is also to the south and southeast but is diverging slightly to the southwest into an interpreted groundwater sink.

Figure C-11 represents the total drawdown (decrease) in synoptic groundwater elevations as measured by the transducers on May 15, 2019 and October 1, 2019. It is important to note that although the synoptic data removes the uncertainty caused by fluctuating groundwater levels, a different uncertainty is introduced by the absence of elevation data for monitoring wells RE130D2, RE133D1, BPOW 3-4, BPOW 5-2, BPOW 5-6, BPOW 5-7, and TT-102D.

## **5.0 VOC MIGRATION RATES**

Groundwater velocity rates (and the associated VOC plume advection rates) are estimated using hydraulic head (groundwater elevation) data collected from Northrop Grumman and NWIRP wells in 2019 and values of aquifer hydraulic conductivities from recent field studies. Plume migration rates may vary from the

groundwater flow rates due to non-uniform flow pathways, dilution, area-wide pumping by supply wells, and targeted VOC mass removal from groundwater by remedial wells.

The migration of VOCs is dependent on several factors. On a microscopic scale, groundwater (and groundwater contaminants) moves through open pore spaces in saturated aquifer sediments comprised of gravel, sand, silt, and clay in response to elevation and/or pressure-head differences (i.e., hydraulic gradients) between two locations. Over large areas, the “average linear velocity” provides an estimate of how long it would take groundwater (and a non-reactive chemical) to move in an aquifer. Average linear velocity is computed using hydraulic conductivity, hydraulic gradient (determined from the groundwater contour maps), and effective porosity (i.e., specific yield).

Average linear velocity calculations are summarized in Table C-1. The effective porosity and hydraulic conductivity parameters are based on pumping test data collected from trials at Bethpage Water District Well 6-2 (Tetra Tech, 2014 and Resolution, 2016) and GM38 Area Hotspot Treatment System (OU2) (Tetra Tech, 2010). Hydraulic gradients are calculated from the regional groundwater flow maps presented in Figures C-1, C-3, C-5 and C-7.

The estimated groundwater velocities represent the project area south of Hempstead Turnpike and are calculated only for the 500 to 700 feet bgs and the greater than 700 feet bgs subsurface intervals. There is insufficient groundwater elevation data to calculate the gradients for the shallower intervals in this portion of the plume.

Because the hydraulic gradient varies throughout the year in response to seasonal fluctuation and groundwater pumping, two sets of calculations were performed for each of the two subsurface intervals. One calculation was performed for the May 2019 conditions and the other calculation was performed for the July 2019 conditions. The largest difference in average linear velocities was between the subsurface intervals, while a slightly smaller seasonal difference was noted within each interval. The velocities calculated for the 500 to 700 feet bgs interval ranged from 289 feet/year to 423 feet/year in the spring and 287 feet/year to 455 feet/year in the summer; the velocities calculated for the greater than 700 feet bgs interval ranged from 417 feet/year to 440 feet/year in the spring and 434 feet/year to 466 feet/year in the summer. The overall average linear velocity for the aquifer, combining both depth intervals and seasons, was 293 feet/year.

## **6.0 POTENTIAL FUTURE IMPACTS TO DRINKING WATER FACILITIES**

The main body of this report discusses well fields currently impacted by VOCs associated with the former Northrop Grumman and NWIRP facilities, and also identifies those well fields equipped with treatment systems to remove the VOCs migrating or potentially migrating from the former Northrop Grumman and NWIRP facilities. This appendix discusses the potential future migration of the groundwater plume relative to the groundwater patterns that have been discussed.

This discussion focuses on the southern portion of the groundwater plume, or that area located generally south of Hempstead Turnpike, as impacts to wells located north of this area have already been addressed. The discussion also focuses on the 500 to 700 feet bgs and the greater than 700 feet bgs depth intervals, because these deeper intervals correspond with the zones of maximum water withdrawal in the southern area, and because to the south of Hempstead Turnpike there are an insufficient number of shallower data points to confidently contour.

The public water supplies that are currently not impacted by the groundwater plume but are relatively close to the downgradient edge of the plume are South Farmingdale Water District Well 1-4, and South Farmingdale Water District Well Nos. 6-1 and 6-2. These wells do not currently have treatment systems in place, but outpost monitoring wells were installed to provide early indication of when treatment might be necessary for each of these well fields. The outpost monitoring wells are placed at depths associated with the supply wells and are located between the plumes and the supply wells such that VOCs would have to flow through outpost monitoring wells several years prior to entering the public water supply wells. This advance notice of VOCs provides early warning that an action is needed.

As the various groundwater plumes move from the source areas and migrate to the south and southeast, they are undergoing dilution, and are affected by pumping and VOC mass removal systems that serve to weaken them. In addition, portions of these plumes are being intercepted by water supply wells with treatment that further hinder migration. Each of these actions reduces the intensity of the plumes. The result is that many of the water districts to the south may never be impacted, or if they are impacted, the effects from the plumes may not be seen for decades.

For SFWD Plant 6, based on site-specific hydrogeological calculations presented in Table C-1, groundwater could travel from the currently depicted edge of the OU2 plume to South Farmingdale Water District Wells 6-1 and 6-2 (a distance of about 2,200 feet) in approximately 6 years. As discussed however, plume migration would be hindered (and potentially prevented) by the operation of South Farmingdale Water District Plant 3 and New York American Water (both with VOC treatment), and it is unclear whether the plume would ever reach South Farmingdale Water District Wells 6-1 and 6-2. Because of the uncertainty with the groundwater flow interpretations and the uncertainty inherent in groundwater velocity calculations, outpost monitoring wells are in place to provide five-year advance notice so that installation of treatment at these supply wells can be initiated, if necessary.

As part of the AROD issued in December 2019 many steps are being implemented to stop further migration of the plume to un-impacted supply wells. Tetra Tech has conducted groundwater modeling of Scenario 5, the Navy's chosen remedy from the AROD. Scenario 5 includes the installation and operation of 6 recovery wells. The modeling shows a migration of approximately 10% of the plume to the Massapequa Water District wells that are south of the Southern State Parkway. This model also confirms that the effect would not be seen by the water districts to the south for 2-3 decades. Modeling of just Scenario 5 is reflected in figure C-12. This figure shows the plume migration through all layers with the plume tracking in >500' bgs migrating

past the Southern State Parkway toward the Massapequa Water District wells. The Navy is considering integration of portions of the NYSDEC chosen remedy to further contain the plume in the vicinity of the Southern State Parkway. Modeling of Scenario 5 with the integrated NYSDEC recovery wells is shown in Figure C-13. The proposed integration of portions of the NYSDEC remedy with additional recovery wells placed south of the Parkway would further protect the water districts to the south so that they may never see effects from the plume.

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**Table C-1**  
**Average Linear Groundwater Velocity Calculations**  
**May 2019 (SPRING) and July 2019 (SUMMER) Groundwater Elevation Contours**  
**Former NWIRP, Bethpage, New York**

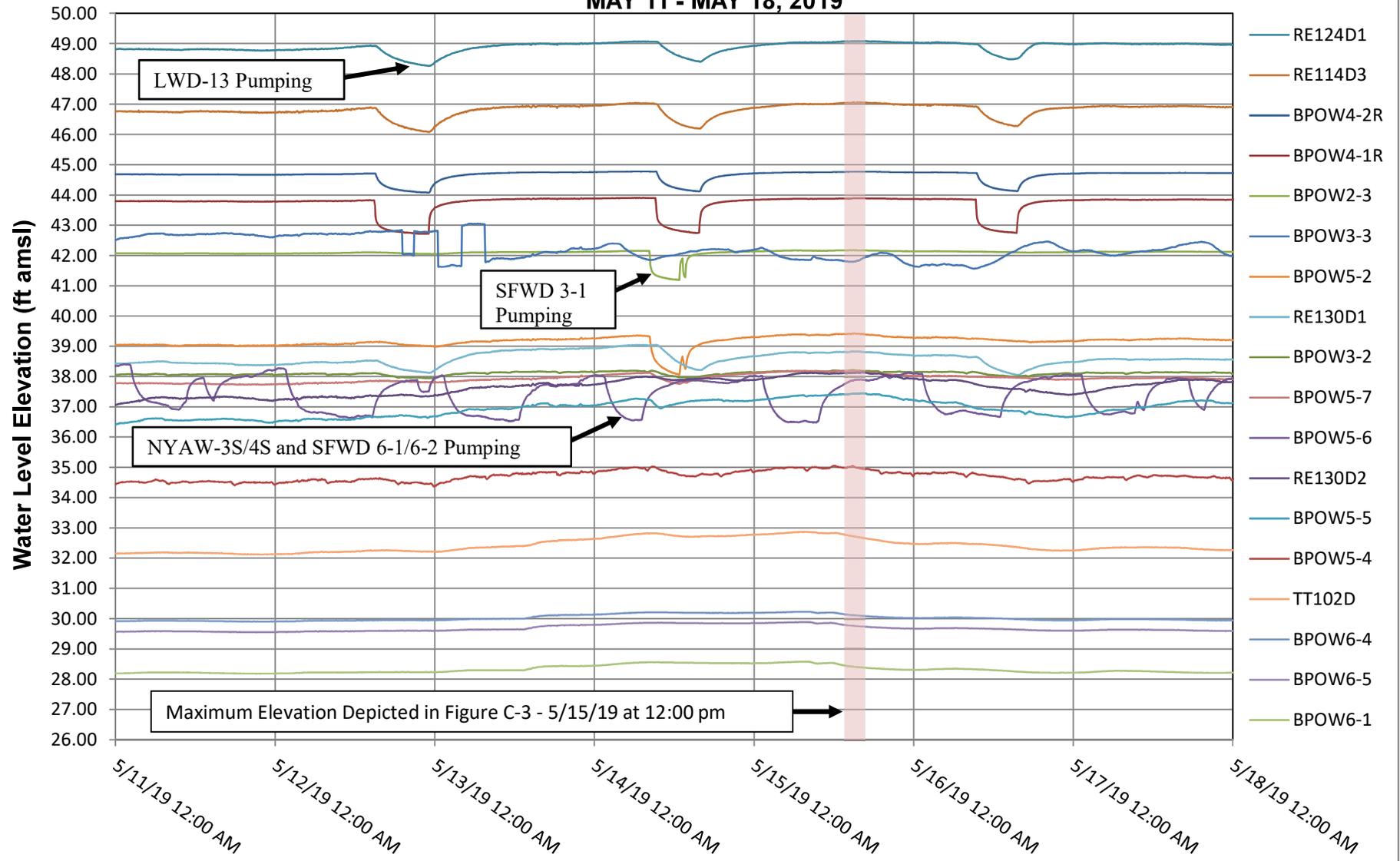
Aquifer Depth Interval: 500 to 700 feet SPRING								Aquifer Depth Interval: 500 to 700 feet SUMMER								Aquifer Depth Interval - 700 feet and below SPRING						Aquifer Depth Interval: 700 feet and below SUMMER							
Contour range on map (feet)	Measured distance between contours (feet)	Gradient (foot/foot)	Hydraulic conductivity (K) (feet/day)	Effective porosity (ft <sup>3</sup> /ft <sup>3</sup> )	Average linear velocity (feet/day)	Average annual velocity (feet/year)	Average of contour range (feet/year)	Measured distance between contours (feet)	Gradient (foot/foot)	Hydraulic conductivity (K) (feet/day)	Effective porosity (ft <sup>3</sup> /ft <sup>3</sup> )	Average linear velocity (feet/day)	Average annual velocity (feet/year)	Average of contour range (feet/year)	Measured distance between contours (feet)	Gradient (foot/foot)	Hydraulic conductivity (K) (feet/day)	Effective porosity (ft <sup>3</sup> /ft <sup>3</sup> )	Average linear velocity (feet/day)	Average annual velocity (feet/year)	Average of contour range (feet/year)	Measured distance between contours (feet)	Gradient (foot/foot)	Hydraulic conductivity (K) (feet/day)	Effective porosity (ft <sup>3</sup> /ft <sup>3</sup> )	Average linear velocity (feet/day)	Average annual velocity (feet/year)	Average of contour range (feet/year)	
46-42	1500	0.003333	87	0.25	1.160000	423.40		1300	0.0038462	87	0.25	1.338462	488.54		2000	0.0025	120	0.25	1.200000	438.00									
	1500	0.003333	87	0.25	1.160000	423.40		1500	0.0033333	87	0.25	1.160000	423.40		2000	0.0025	120	0.25	1.200000	438.00									
							423.40							455.97							438.00								
42-38	2700	0.00185185	87	0.25	0.644444	235.22		1600	0.003125	87	0.25	1.087500	396.94		2100	0.002381	120	0.25	1.142857	417.14		1950	0.002564	120	0.25	1.230769	449.23		
	1600	0.003125	87	0.25	1.087500	396.94		1500	0.0033333	87	0.25	1.160000	423.40		1800	0.0027778	120	0.25	1.333333	486.67		1750	0.002857	120	0.25	1.371429	500.57		
	2200	0.00227273	87	0.25	0.790909	288.68		2200	0.0022727	87	0.25	0.790909	288.68		2100	0.002381	120	0.25	1.142857	417.14		1950	0.002564	120	0.25	1.230769	449.23		
							306.95							369.67							440.32							466.34	
38-34	2200	0.00227273	87	0.25	0.790909	288.68		3000	0.0016667	87	0.25	0.580000	211.70		2100	0.002381	120	0.25	1.142857	417.14		2150	0.002326	120	0.25	1.116279	407.44		
	2000	0.0025	87	0.25	0.870000	317.55		1900	0.0026316	87	0.25	0.915789	334.26		2200	0.0022727	120	0.25	1.090909	398.18		1650	0.003030	120	0.25	1.454545	530.91		
	2000	0.0025	87	0.25	0.870000	317.55		2000	0.0025	87	0.25	0.870000	317.55		2000	0.0025	120	0.25	1.200000	438.00		1900	0.002632	120	0.25	1.263158	461.05		
							307.93							287.84							417.77							466.47	
34-30	2200	0.00227273	87	0.25	0.790909	288.68		2200	0.002273	87	0.25	0.790909	288.68		2000	0.0025	120	0.25	1.200000	438.00		2050	0.002439	120	0.25	1.170732	427.32		
	2100	0.00238095	87	0.25	0.828571	302.43		1600	0.003125	87	0.25	1.087500	396.94		2000	0.0025	120	0.25	1.200000	438.00		1950	0.002564	120	0.25	1.230769	449.23		
	2300	0.00217391	87	0.25	0.756522	276.13		1700	0.002941	87	0.25	1.023529	373.59		2300	0.002174	120	0.25	1.043478	380.87		1800	0.002778	120	0.25	1.333333	486.67		
							289.08							353.07							418.96							454.40	
30-26																						1950	0.002564	120	0.25	1.230769	449.23		
																						2050	0.002439	120	0.25	1.170732	427.32		
																						2050	0.002439	120	0.25	1.170732	427.32		
																												434.62	
<b>Average</b>					323.51	331.84							358.52	366.64						427.92	428.76						451.83	451.83	
<b>Minimum</b>					235.22								211.70								380.87						407.44		
<b>Maximum</b>					423.40								488.54								486.67						530.91		

Input Parameters by Aquifer Depth		
K 500-700 =	87	ft/day
n 500-700 =	0.25	ft <sup>3</sup> /ft <sup>3</sup>
K GT 700 =	120	ft/day
n GT 700 =	0.25	ft <sup>3</sup> /ft <sup>3</sup>

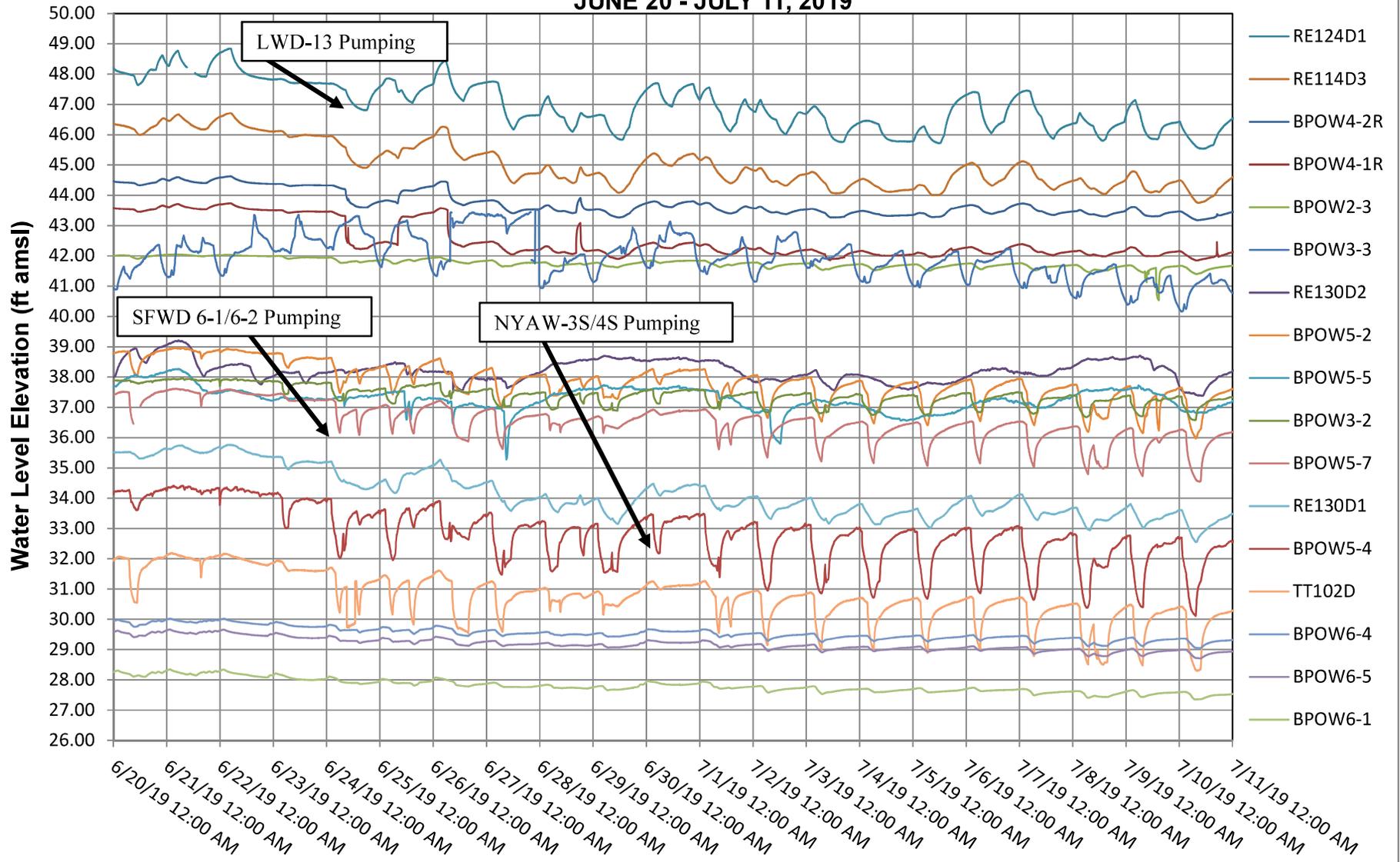
**Overall average linear velocity (all aquifer depths combined)**  
Average = 293 ft/year  
Minimum = 212 ft/year  
Maximum = 391 ft/year



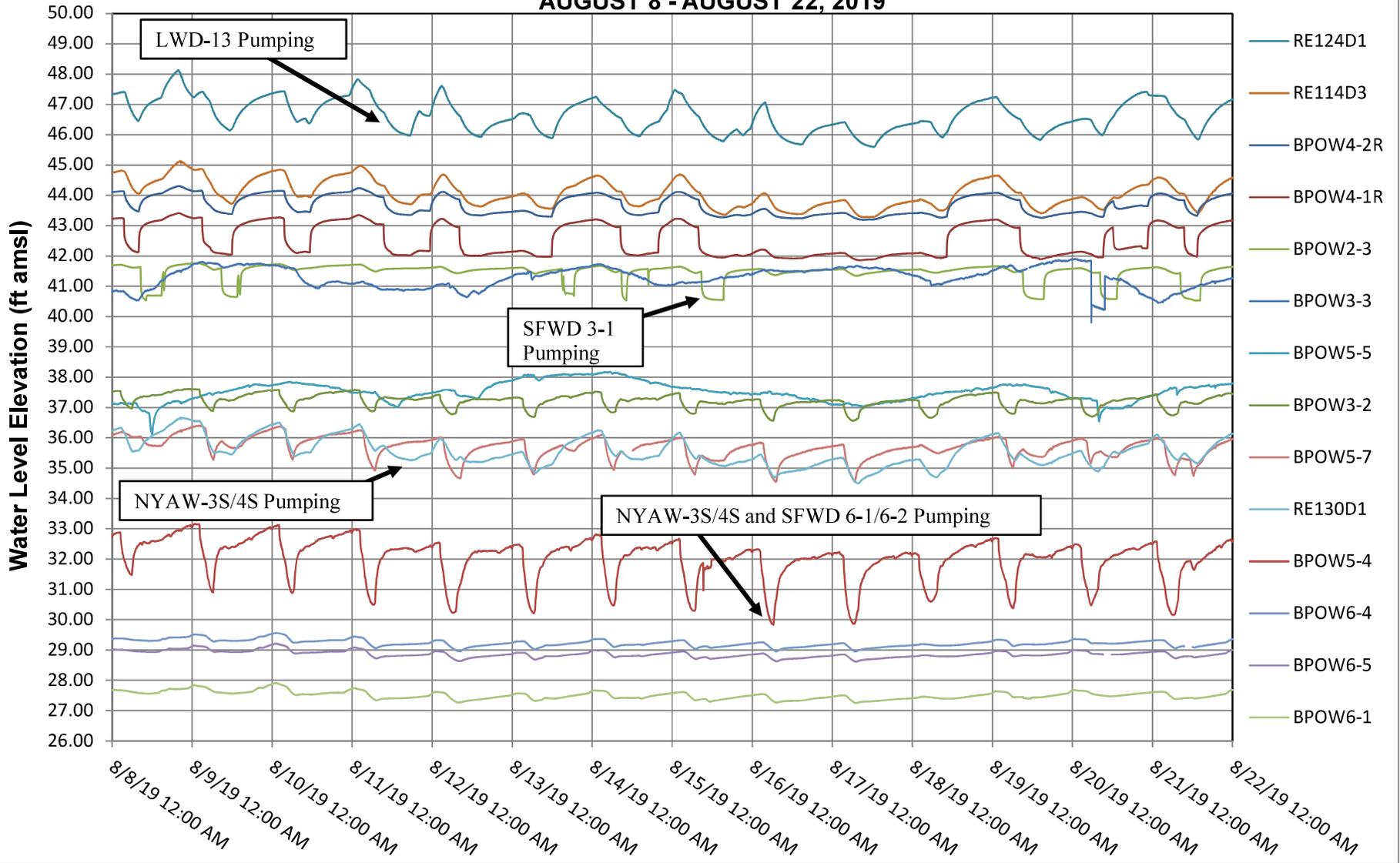
**CHART C-1  
GROUNDWATER ELEVATIONS  
SOUTHERN AREA  
MAY 11 - MAY 18, 2019**



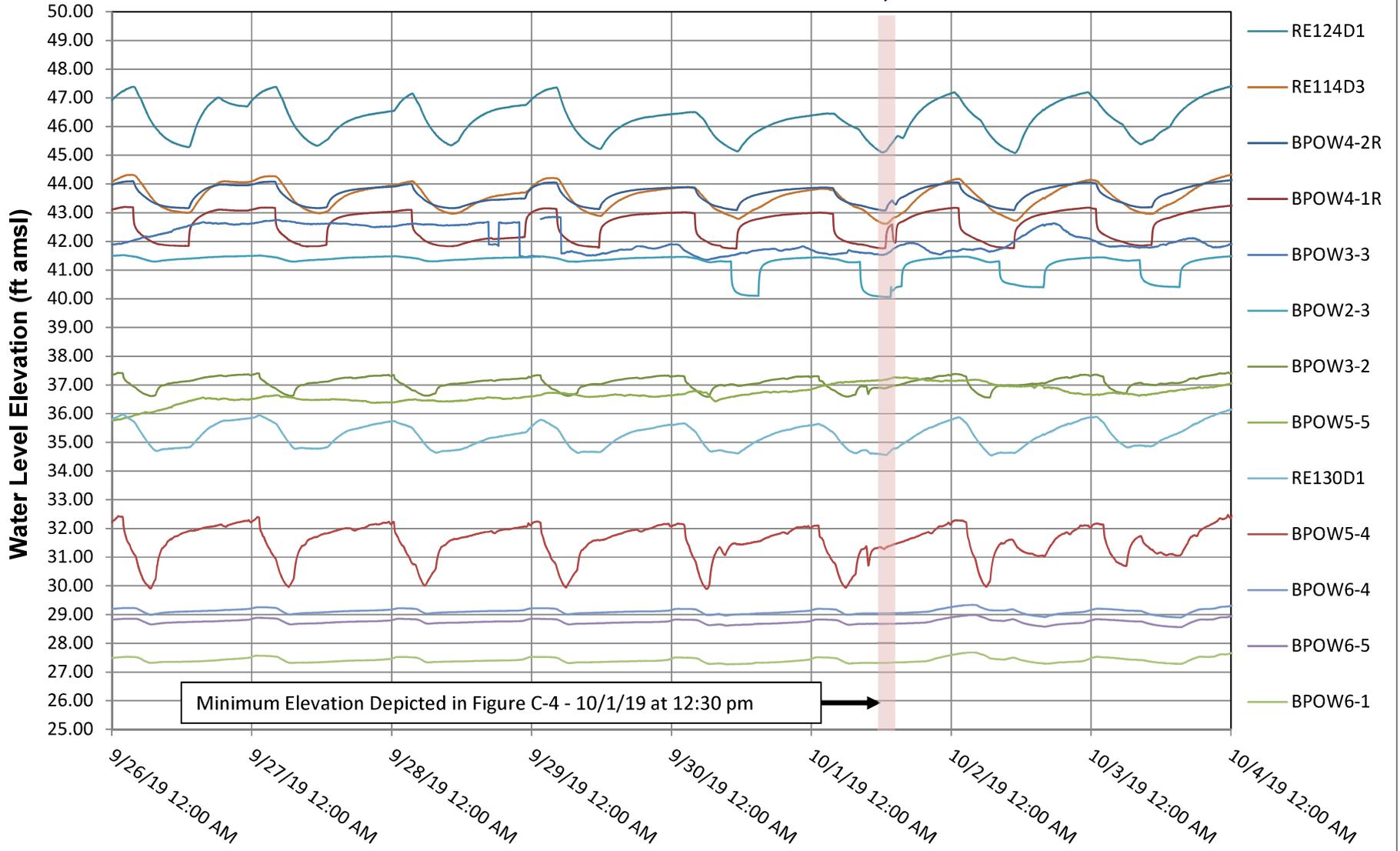
**CHART C-2  
GROUNDWATER ELEVATIONS  
SOUTHERN AREA  
JUNE 20 - JULY 11, 2019**

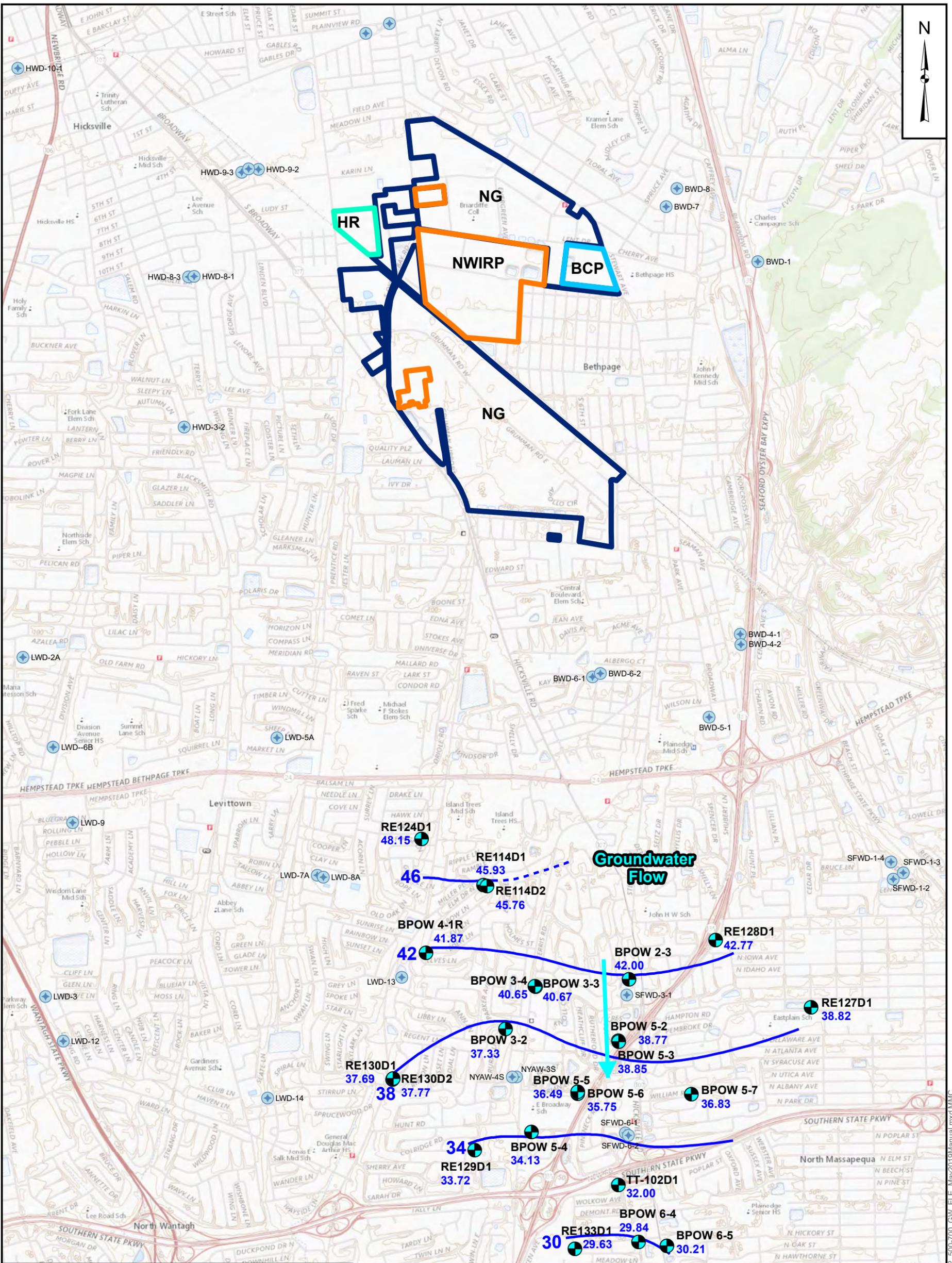


**CHART C-3  
GROUNDWATER ELEVATIONS  
SOUTHERN AREA  
AUGUST 8 - AUGUST 22, 2019**



**CHART C-4  
GROUNDWATER ELEVATIONS  
SOUTHERN AREA  
SEPTEMBER 28 - OCTOBER 5, 2019**





**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

**Groundwater Contours 500 to 700 feet bgs**

Groundwater Contour Manual Reading (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

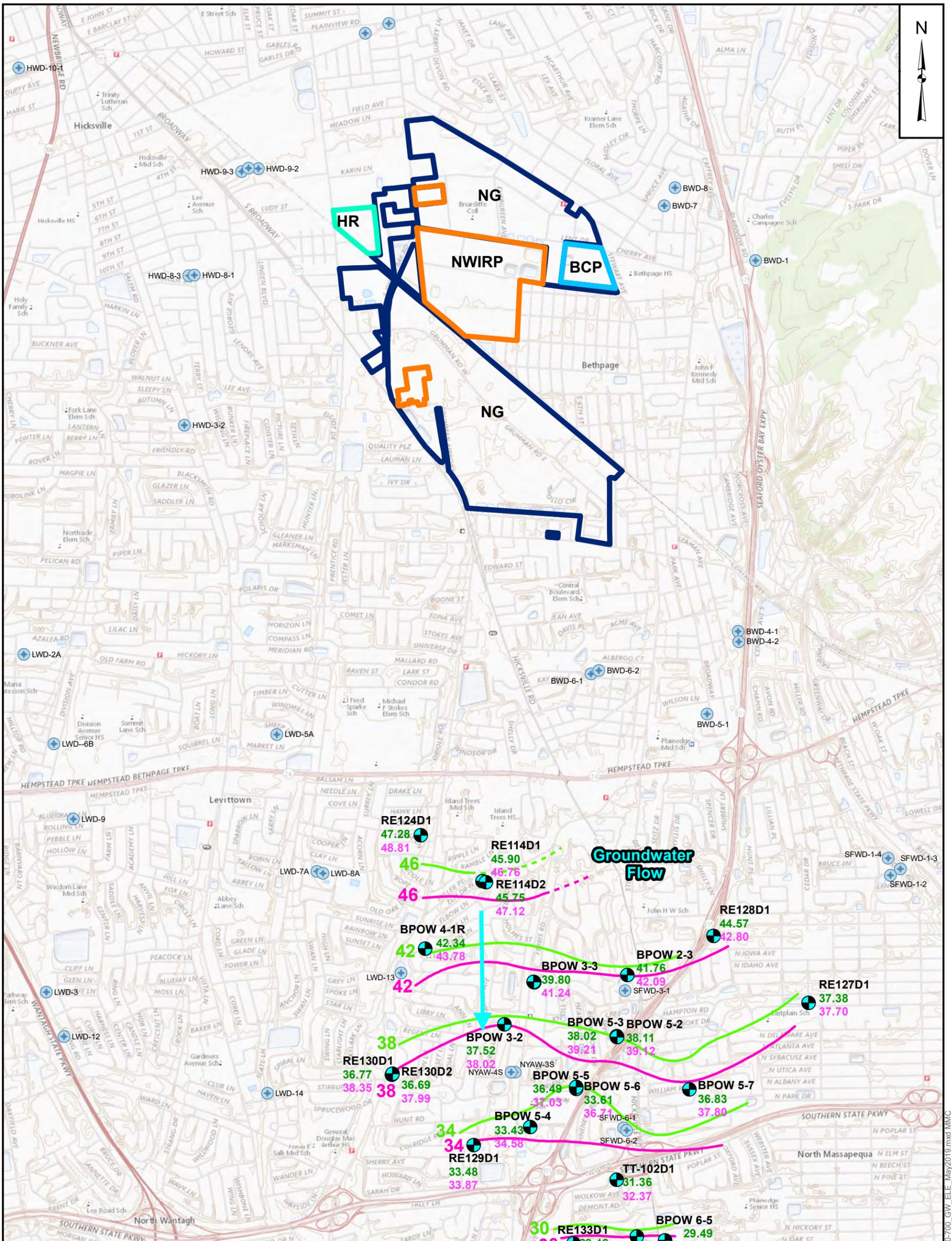
28.12 Manual Reading



**MAY 2019 MANUAL WATER  
LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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CHECKED BY	DATE
FIGURE NUMBER	C-1

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

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- MSL- mean sea level
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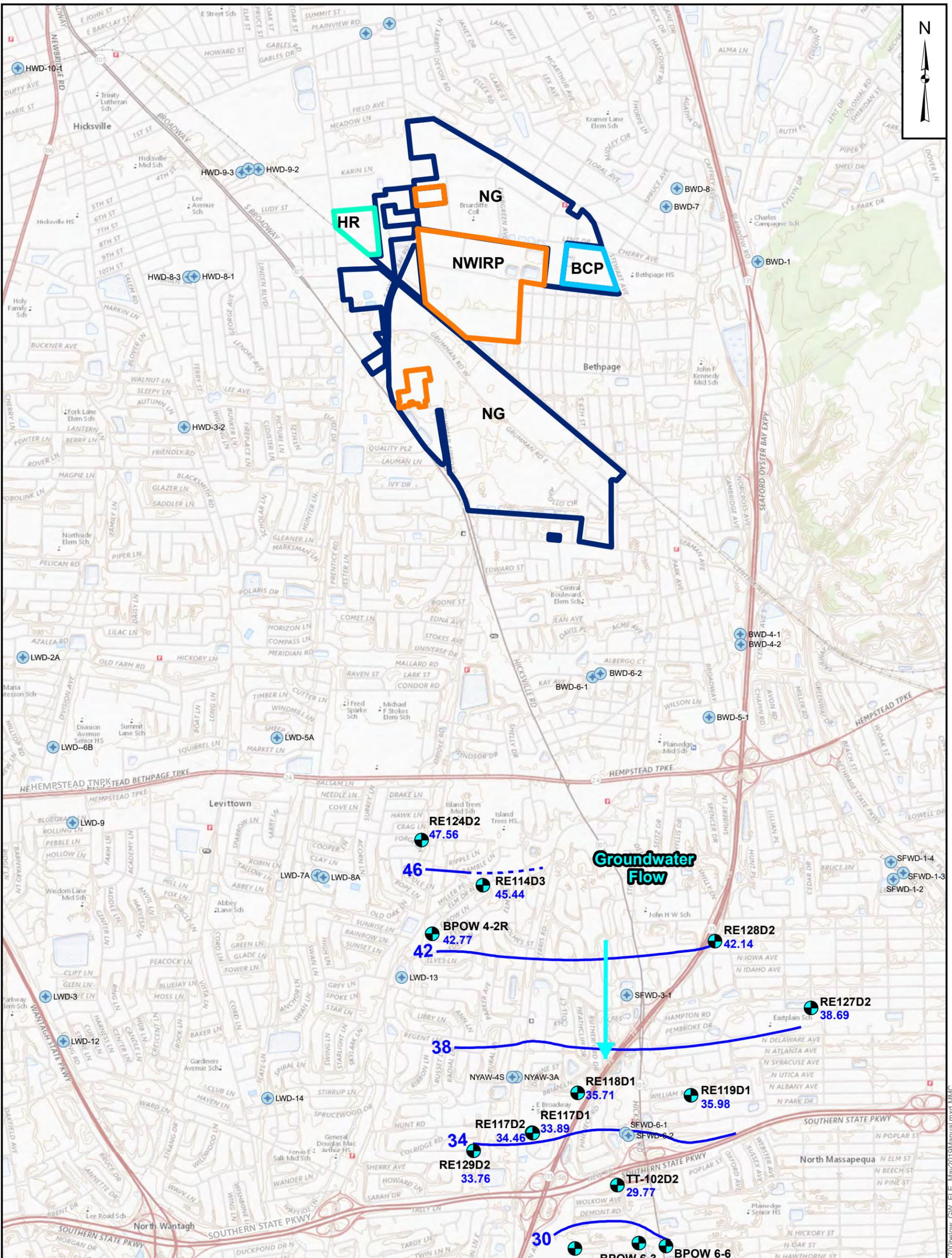
- 26.19 Low (Pump On)
- 29.92 High (Pump Off)



**MAY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
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CHECKED BY	DATE
FIGURE NUMBER	C-2

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**Legend**

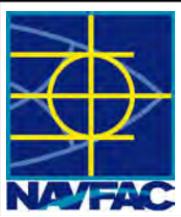
- Monitoring Well (below 700 feet bgs)
- Public Water Supply Well

**Groundwater Contours Greater than 700 feet bgs**

- Groundwater Contour Manual Reading (feet msl)

- Notes:**
- BCP- Bethpage Community Park (OU3)
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  - NYAW-New York American Water
  - SFWD-South Farmingdale Water District

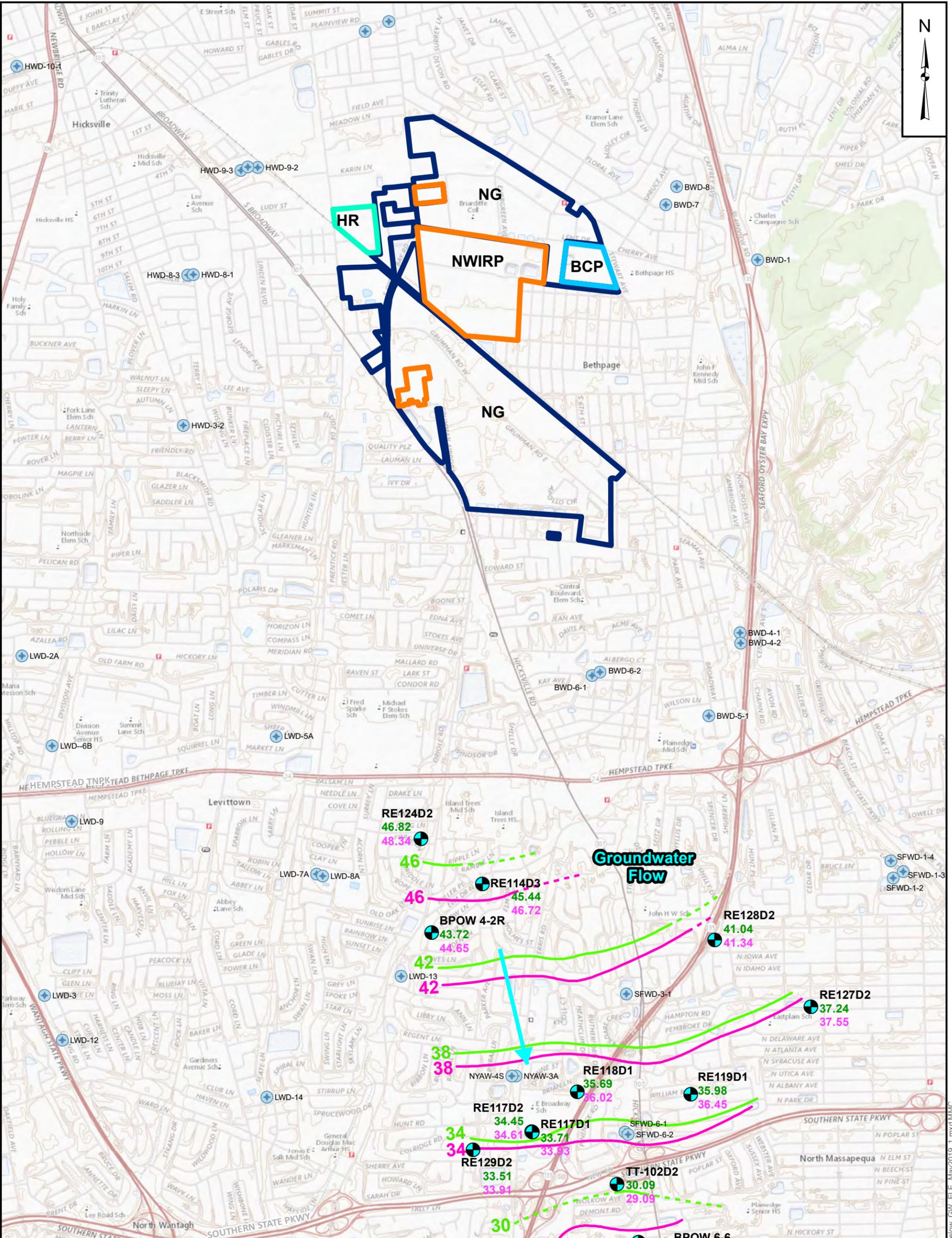
28.12 Manual Reading



**MAY 2019 MANUAL WATER LEVEL READINGS GROUNDWATER POTENTIOMETRIC SURFACE MAP (BELOW 700 FEET BGS) NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	<b>C-3</b>

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**Legend**

- Monitoring Well (below 700 feet bgs)
- Public Water Supply Well

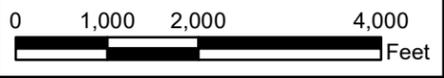
**Groundwater Contours Greater than 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

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- SFWD-South Farmingdale Water District

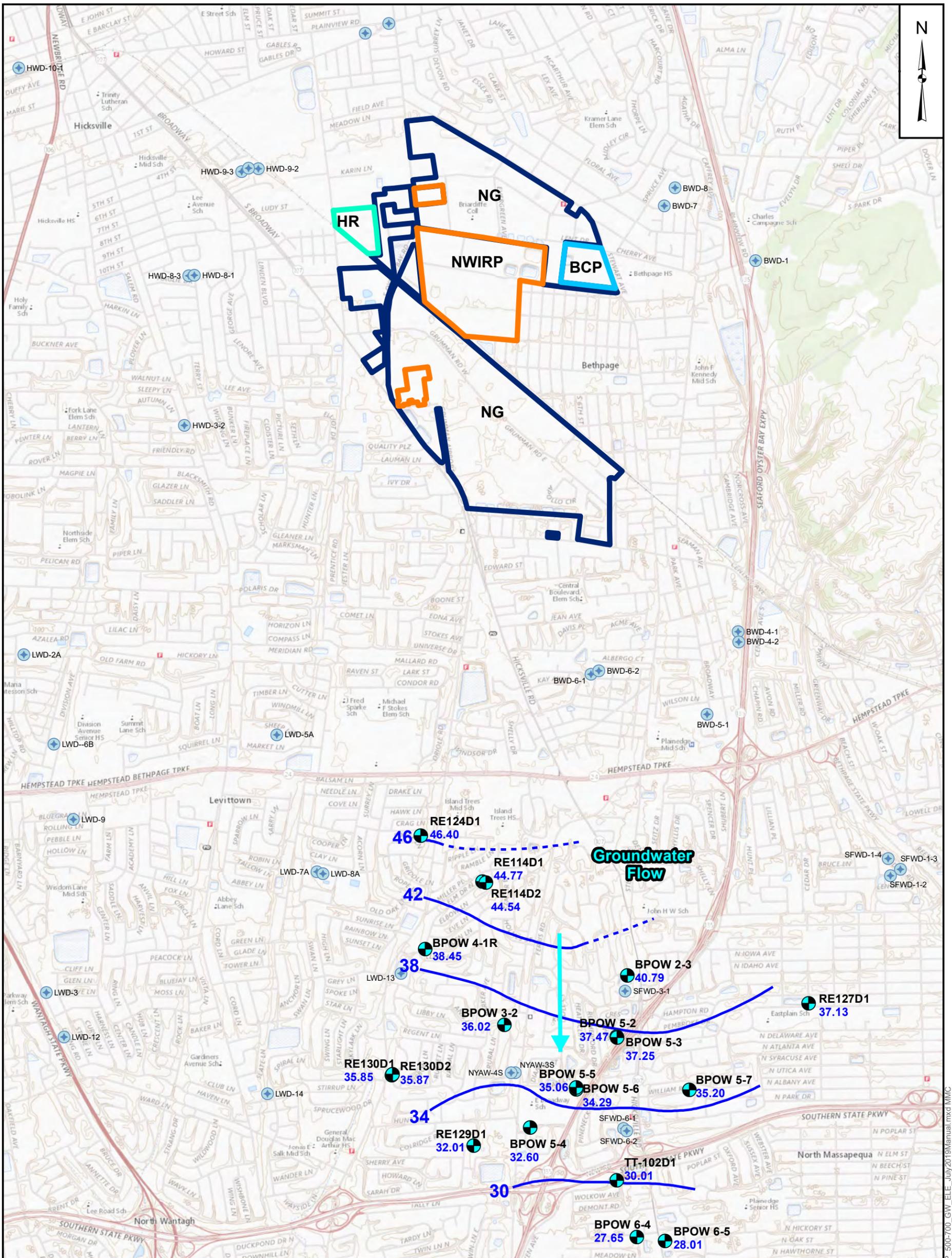
26.19 Low (Pump On)  
29.92 High (Pump Off)



**MAY 2019 TRANSDUCER HIGH AND LOW WATER LEVEL READINGS**  
**GROUNDWATER POTENTIOMETRIC SURFACE MAP**  
**(BELOW 700 FEET BGS)**  
**NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	<b>C-4</b>

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**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

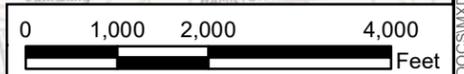
**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour Manual Reading (feet msl)

**Notes:**

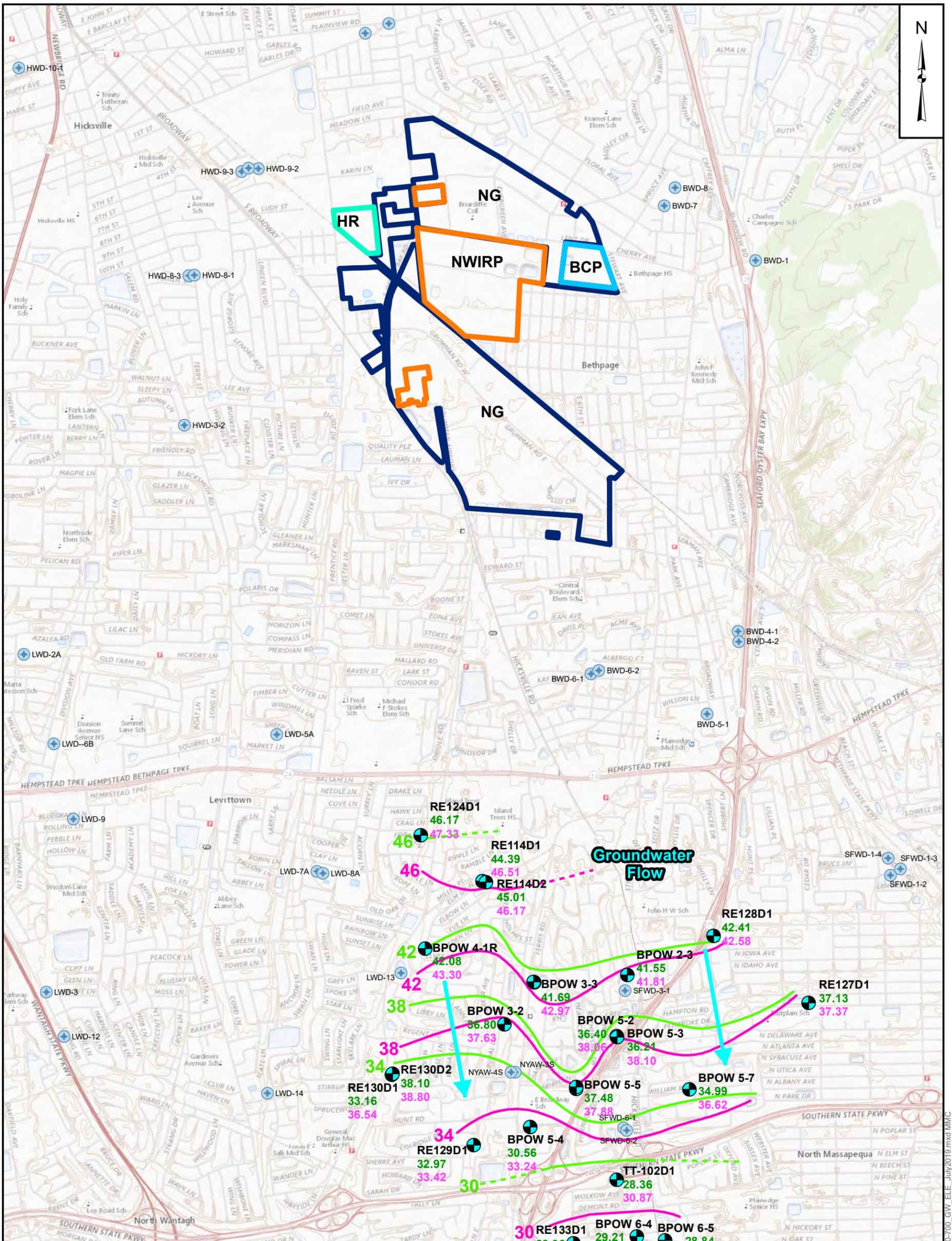
- BCP- Bethpage Community Park (OU3)
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- LWD-Levittown Water District
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- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

28.12 Manual Reading



**JULY 2019 MANUAL WATER  
LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	C-5



**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well

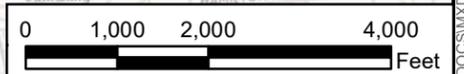
**Groundwater Contours 500 to 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
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- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
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- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

26.19 Low (Pump On)  
29.92 High (Pump Off)

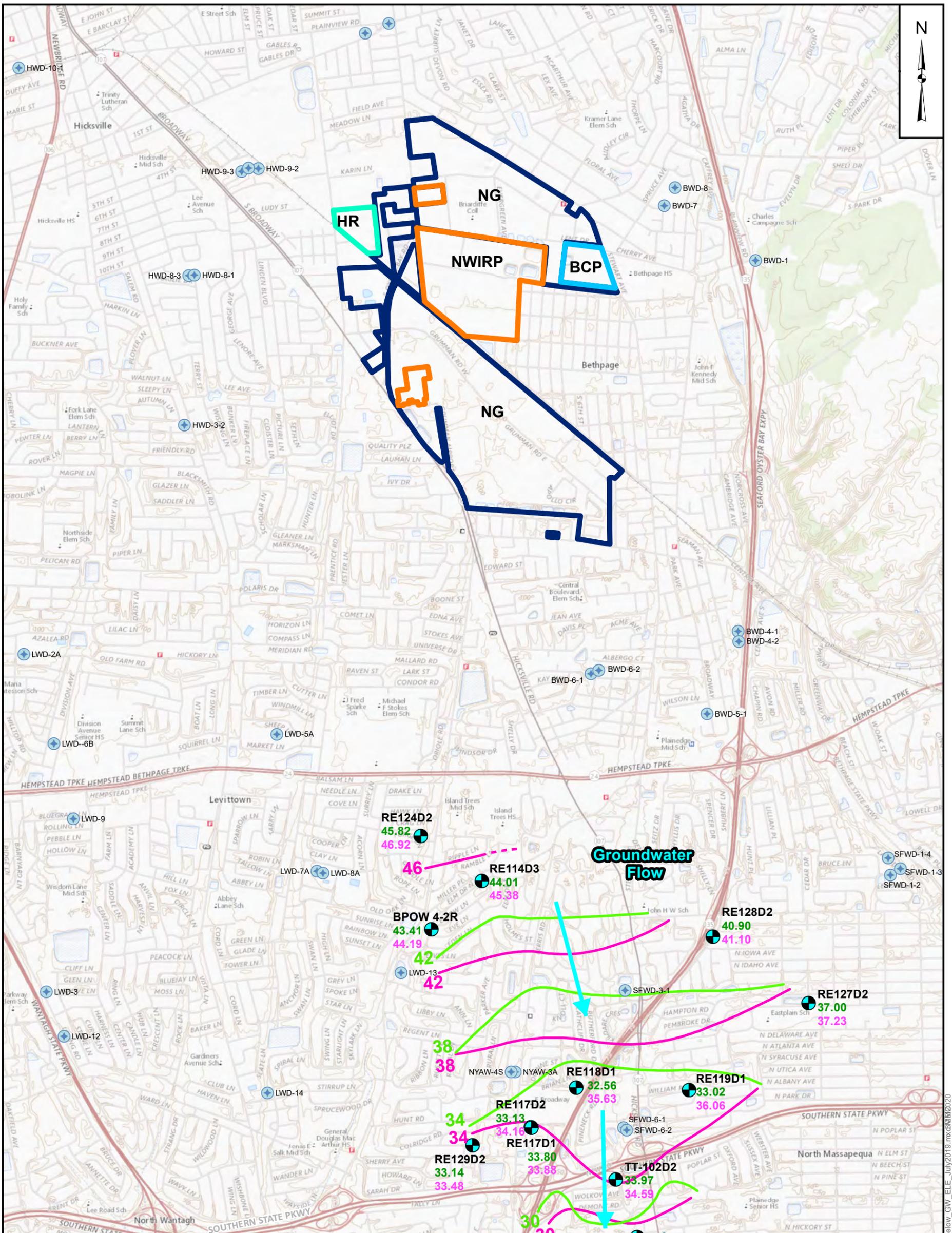


**JULY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(500 to 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	C-6

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**Legend**

- Monitoring Well (below 700 feet bgs)
- Public Water Supply Well

**Groundwater Contours Greater than 700 feet bgs**

- Groundwater Contour High (feet msl)
- Groundwater Contour Low (feet msl)

**Notes:**

- BCP- Bethpage Community Park (OU3)
- bgs- below ground surface
- BWD- Bethpage Water District
- HR- Hooker Ruco Superfund Site
- LWD-Levittown Water District
- MSL- mean sea level
- MWD-Massapequa Water District
- NG- Former Northrop Grumman Facility
- NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility
- NYAW-New York American Water
- SFWD-South Farmingdale Water District

26.19 Low (Pump On)  
29.92 High (Pump Off)

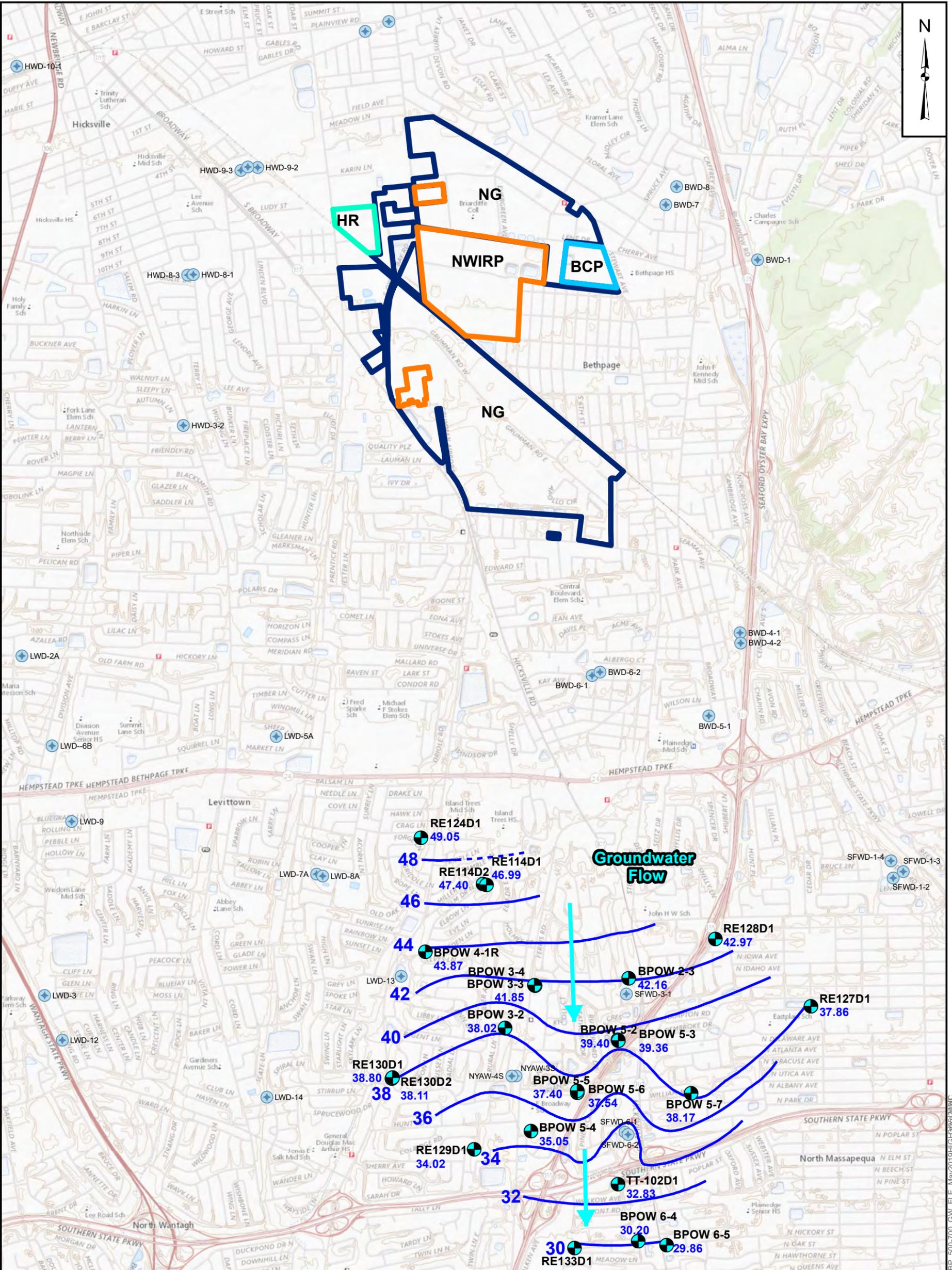


**JULY 2019 TRANSDUCER HIGH AND LOW  
WATER LEVEL READINGS  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP  
(BELOW 700 FEET BGS)  
NWIRP BETHPAGE, NEW YORK**



CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	C-8

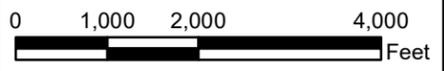
NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMXDIBP\_OU2\_2020\WINIBP\_700below\_GW\_ELE\_July2019.mxd\08005



**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well
- Groundwater Contour Inferred (feet msl)
- Groundwater Contour (feet msl)

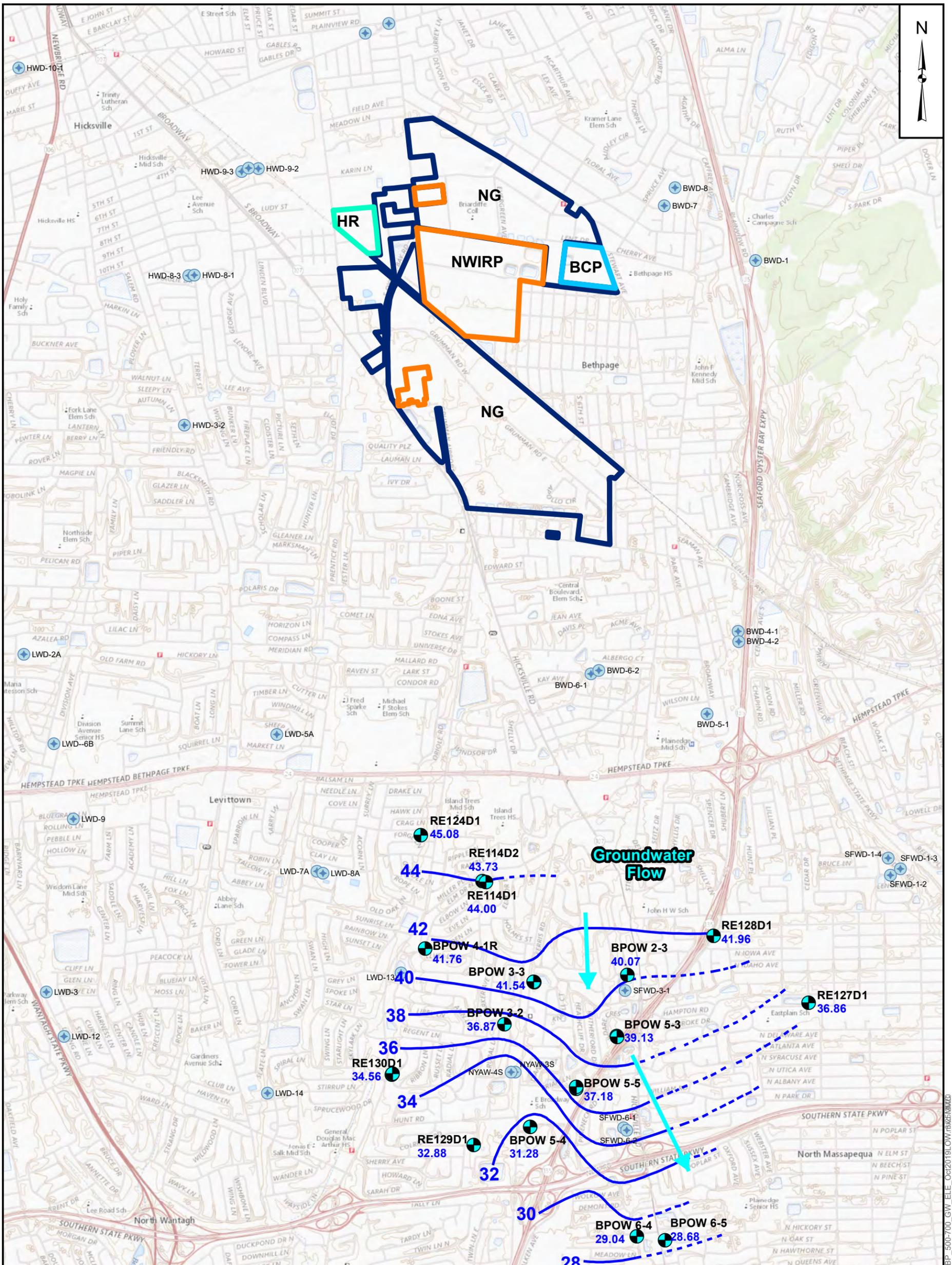
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 HR- Hooker Ruco Superfund Site  
 LWD-Levittown Water District  
 MSL- mean sea level  
 MWD-Massapequa Water District  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW-New York American Water  
 SFWD-South Farmingdale Water District



**MAY 2019 GROUNDWATER POTENTIOMETRIC SURFACE MAP (500 TO 700 FEET BGS) NWIRP BETHPAGE, NEW YORK**

CTO 112G08005-WE16	
DRAWN BY	DATE 03/25/20
CHECKED BY	DATE
FIGURE NUMBER <b>C-9</b>	

NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\112G08005-WE16\_May2019\112G08005-WE16



**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well
- Groundwater Contour (feet msl)
- Groundwater Contour Inferred (feet msl)

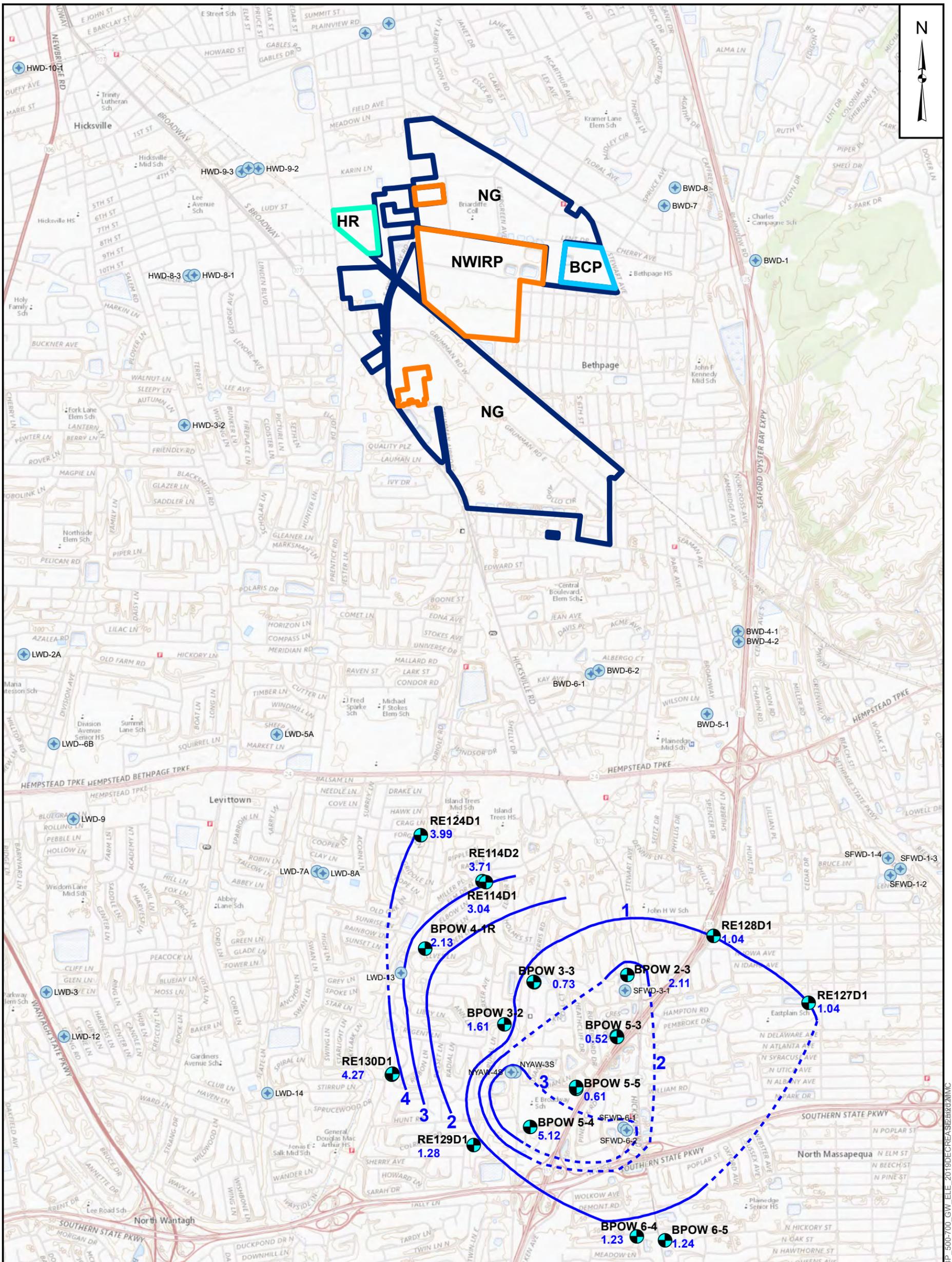
**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 HR- Hooker Ruco Superfund Site  
 LWD-Levittown Water District  
 MSL- mean sea level  
 MWD-Massapequa Water District  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW-New York American Water  
 SFWD-South Farmingdale Water District



**OCTOBER 2019 GROUNDWATER POTENTIOMETRIC SURFACE MAP (500 TO 700 FEET BGS) NWIRP BETHPAGE, NEW YORK**

CTO	
112G08005-WE16	
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	
<b>C-10</b>	

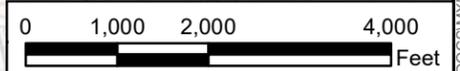
NOR-P:\GIS\_files\Bethpage\MAP\_DOCS\IMXD\BEP\_OU2\_2020\WINNIBP\_8500-700\_GW\_ELE\_Oct2019\LOW\B25103020



**Legend**

- Monitoring Well (500 to 700 ft bgs)
- Public Water Supply Well
- Groundwater Contour (feet msl)
- Groundwater Contour Inferred (feet msl)

**Notes:**  
 BCP- Bethpage Community Park (OU3)  
 bgs- below ground surface  
 BWD- Bethpage Water District  
 HR- Hooker Ruco Superfund Site  
 LWD-Levittown Water District  
 MSL- mean sea level  
 MWD-Massapequa Water District  
 NG- Former Northrop Grumman Facility  
 NWIRP- Former Naval Weapons Industrial Reserve Plant Bethpage Facility  
 NYAW-New York American Water  
 SFWD-South Farmingdale Water District



**POTENTIOMETRIC SURFACE MAP  
 DECREASE FROM  
 5/15/19 TO 10/1/19  
 (500 TO 700 FEET BGS)  
 NWIRP BETHPAGE, NEW YORK**

CTO	112G08005-WE16
DRAWN BY	DATE
CHECKED BY	DATE
FIGURE NUMBER	<b>C-11</b>

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## **Appendix C - Groundwater Modeling Evaluation Tables Scenarios 1 and 5**

Eight Recovery Wells (RWs) have either been, are planned to be, or are being considered as part of Navy near-term actions:

- Phase I, one well - RW4;
- Phase II, two to four wells - RW5A/5B and RW6A/6B;
- Phase II Extension, one well - RW7A/7B; and
- Phase III, four wells - RWs 8 to 11.

The following provides a further summary of the individual scenario's goals/purposes.

- **Scenario 1** – Scenario 1 evaluates planned activities to be conducted under the Navy's OU2 ROD to address Hotspots. Pumping rates are based on long-term averages to account for variable rates used throughout the year. This scenario represents the baseline for comparison to the other scenarios.
- **Scenario 5** – Scenario 5 is an extension of Scenarios 1 and 3 with the goal of achieving full capture of the OU2 groundwater plume to the extent practicable. To support this objective, four additional Navy wells would likely be required (RW8 through RW11) in an east-west trending line along the Southern State Parkway. Based on the modeling, this scenario is expected to achieve the NYSDEC SR goals by controlling migration of the OU2 plume south of the Southern State Parkway.

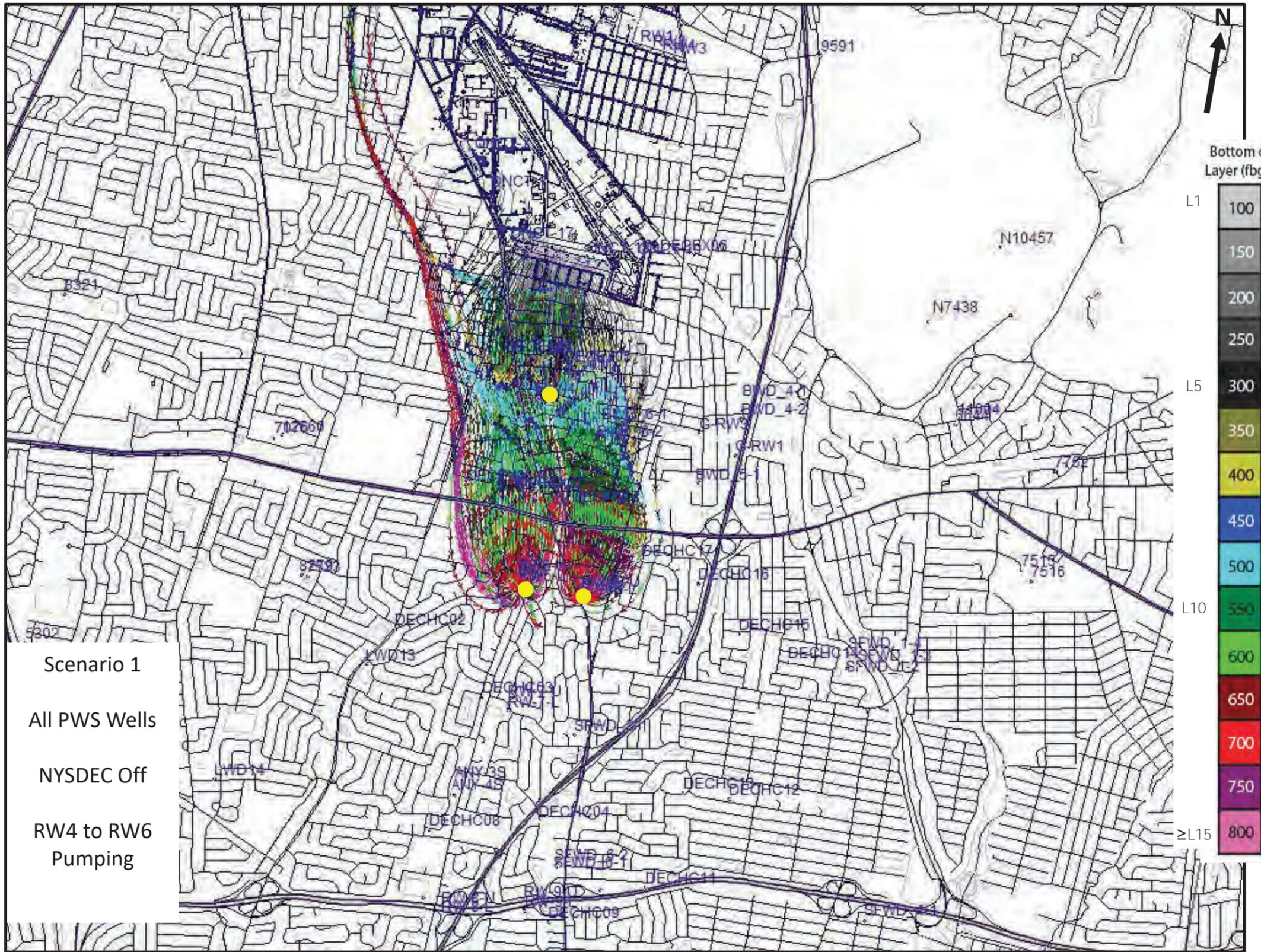
**Table C-1 – Mass-Based Comparison of Scenario 1**

<b>Well Name</b>	<b>Scenario 1 Mass Captured (percent)</b>
RW4	14.61
RW5	40.73
RW6	11.35
GRW1	0.02
GRW3	0.02
LWD-8A	0.15
ANY-4S	28.28
BWD 5-1	0.04
BWD 6-1	0.15
BWD 6-2	2.25
SFWD 3-1	0.40
SFWD 6-2	0.45
MWD-4, MWD-5	0.36
N8837, N9910	0.12
ONCT-17	0.86
ONCT-18	0.10
Bypass	0.09

**Table C-2 – Mass-Based Comparison of Scenario 5**

<b>Well Name</b>	<b>Scenario 5 Mass Captured (percent)</b>
RW4	14.39
RW5	39.43
RW6	10.10
RW7	16.75
RW8	0.26
RW9	0.58
RW10	0.20
RW11	0.11
GRW1	0.02
GRW3	0.02
LWD-8A	0.09
ANY-4S	14.40
BWD_5-1	0.04
BWD_6-1	0.15
BWD_6-2	1.93
SFWD_3-1	0.34
SFWD_6-2	0.30
ONCT-17	0.80
ONCT-18	0.09

-- No capture of particles

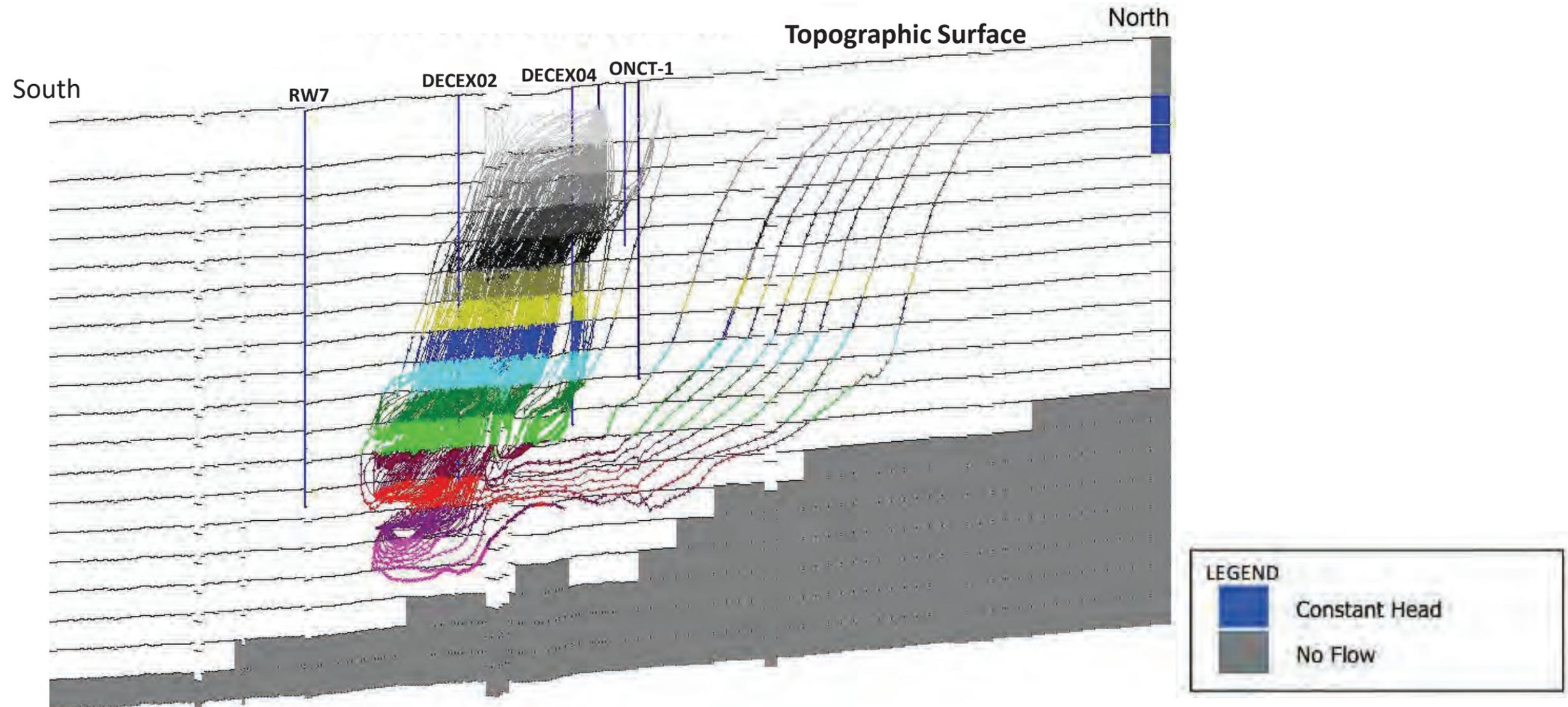


Circle of 25 particles with approximate radius of 50 feet was initiated in the center of the model layers where the screened zone of the RW occurs

Particles are color coded by model layer/depth

Particle tracking represents advective flow through the 3-D simulated groundwater domain, not actual travel of contamination

Navy Groundwater Model – Scenario 1 – Reverse Particle Tracking from RWs

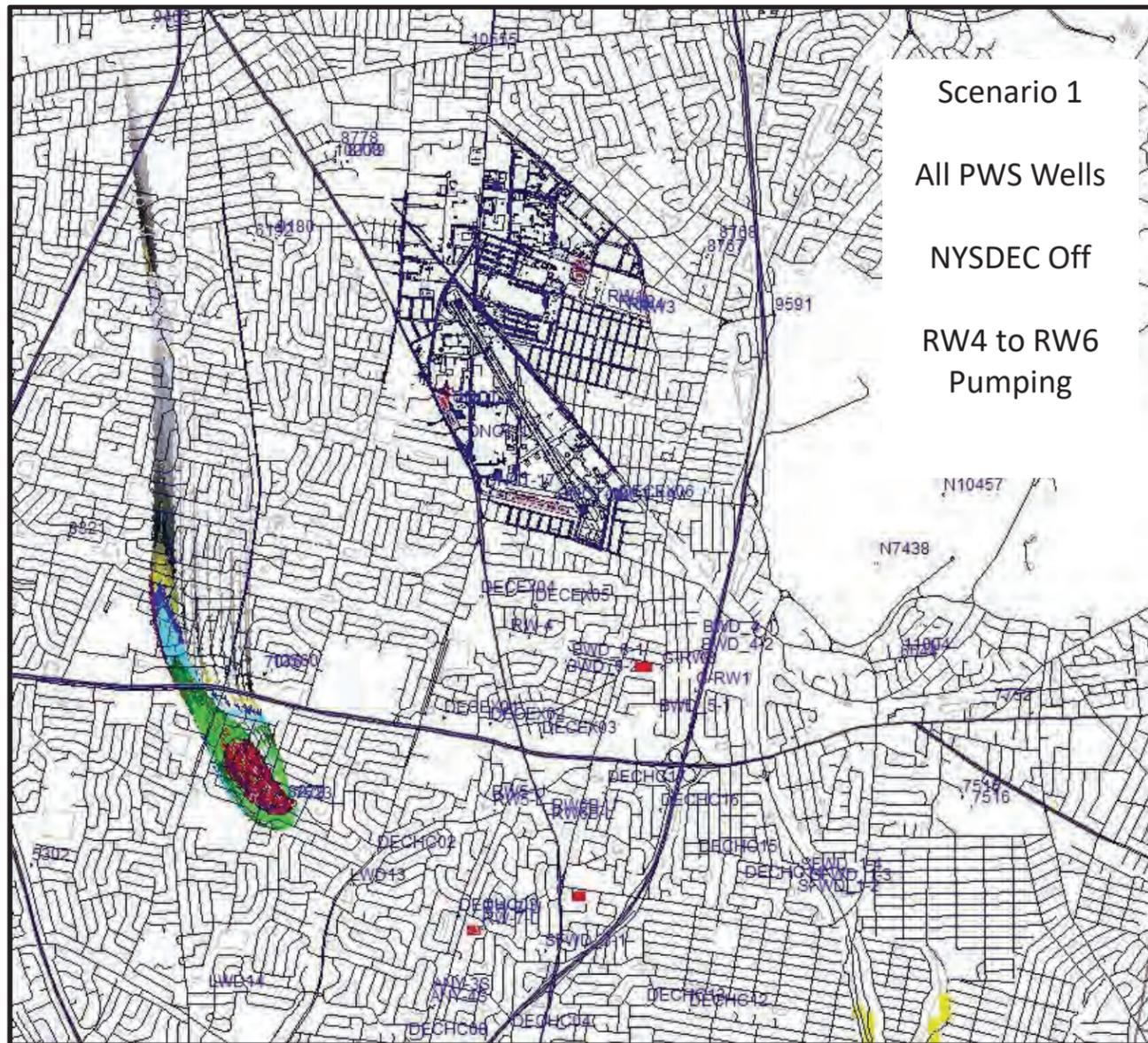


Cross Section exhibits 5 times vertical exaggeration (focused view in RW area)

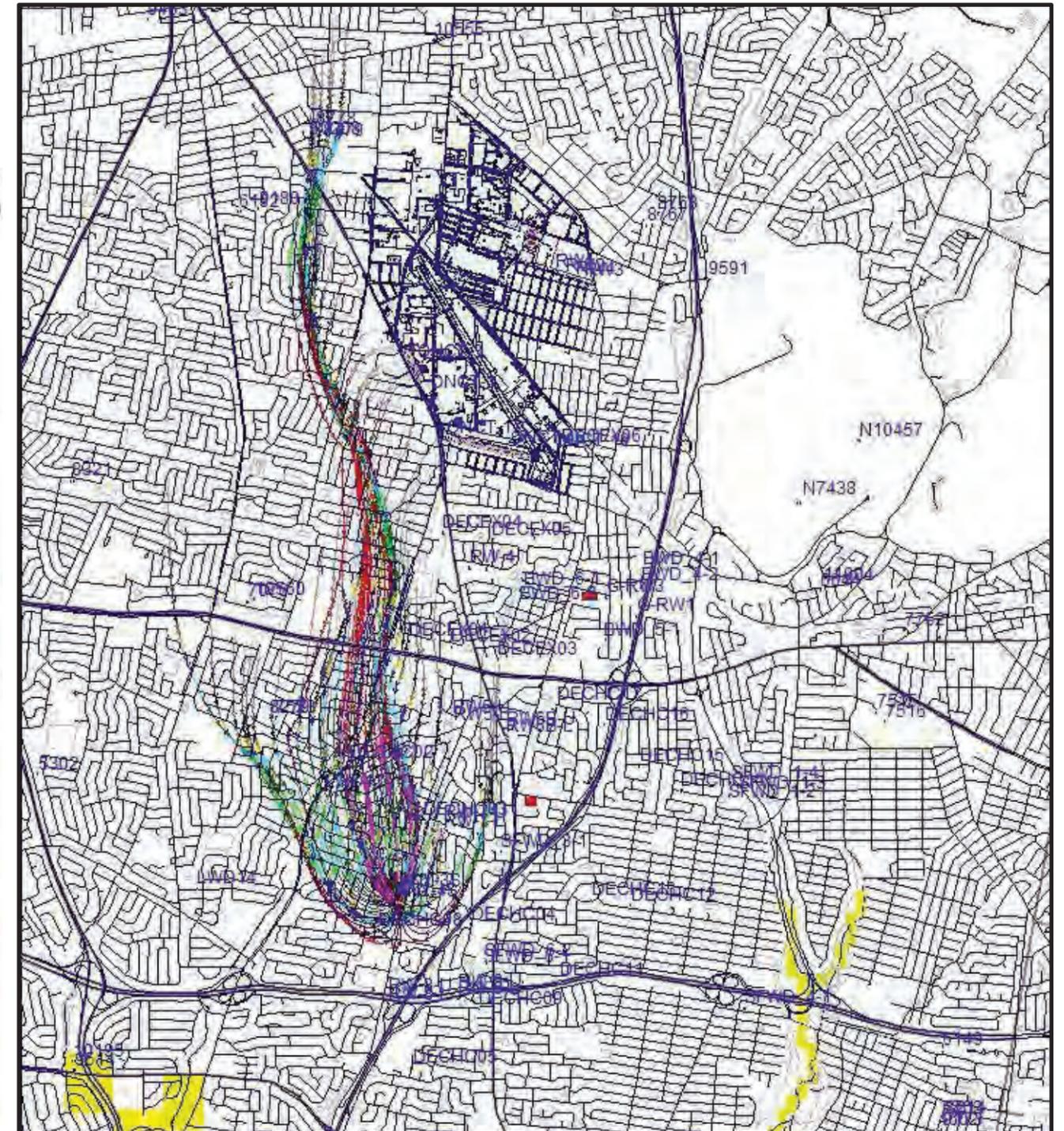
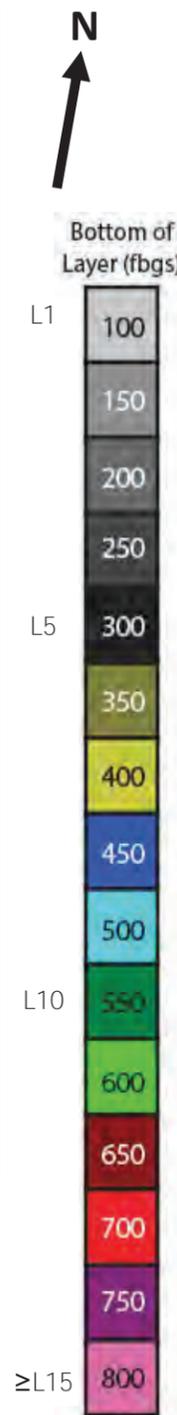
Cross Section Extends from NWIRP Bethpage Facility in North to Southern State Parkway in South

Particles are color coded by model layer/depth

Navy Groundwater Model – Scenario 1 – Reverse Particle Tracking from RWs – Cross Section



Reverse Particle Tracking from Levittown Well 7523



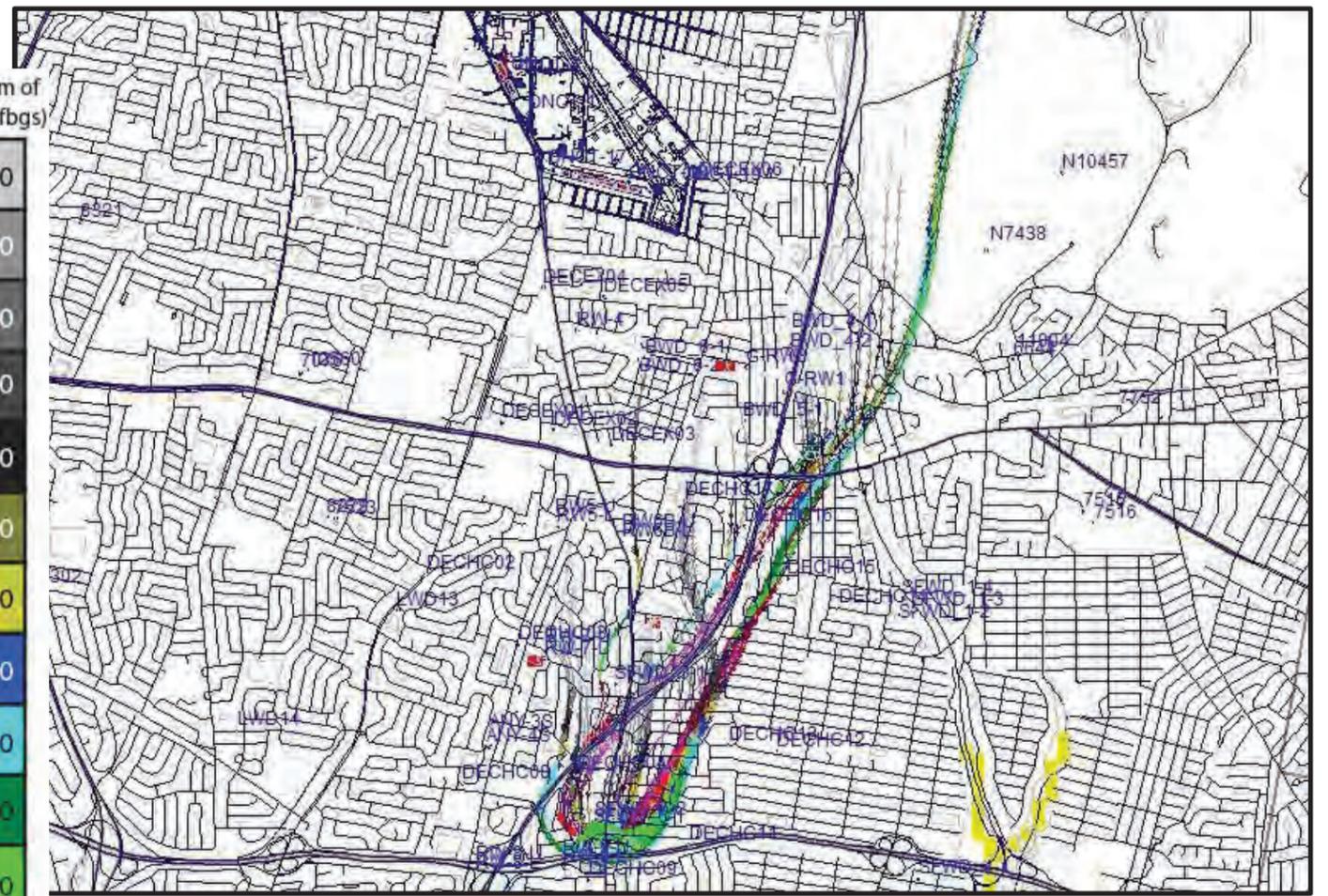
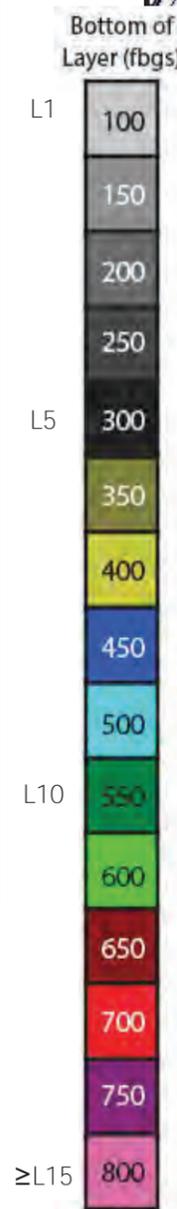
Reverse Particle Tracking from New York American Water ANY-4S

Navy Groundwater Model – Scenario 1 – Reverse Particle Tracking from Local PWS Wells



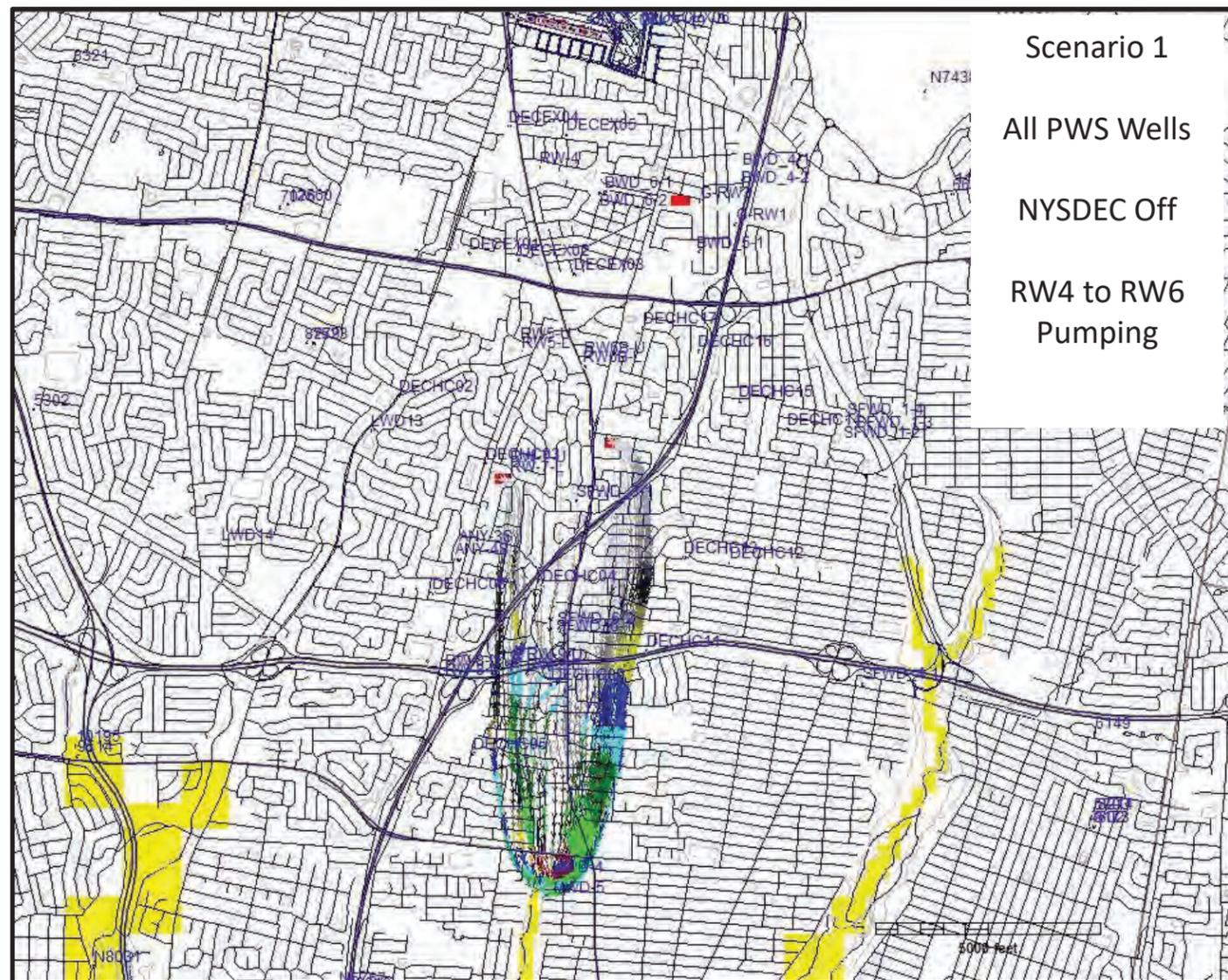
Scenario 1  
 All PWS Wells  
 NYSDEC Off  
 RW4 to RW6  
 Pumping

Reverse Particle Tracking from South Farmingdale Well SFWD 3

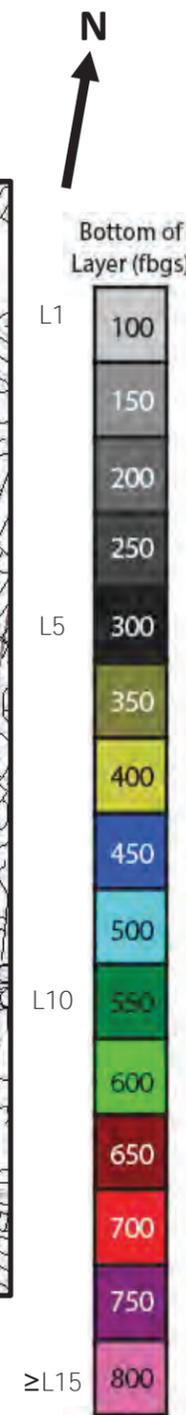


Reverse Particle Tracking from South Farmingdale Well SFWD 6

Navy Groundwater Model – Scenario 1 – Reverse Particle Tracking from Local PWS Wells



Reverse Particle Tracking from Massapequa Well MWD-4



Reverse Particle Tracking from Massapequa Well MWD-5

Navy Groundwater Model – Scenario 1 – Reverse Particle Tracking from Local PWS Wells



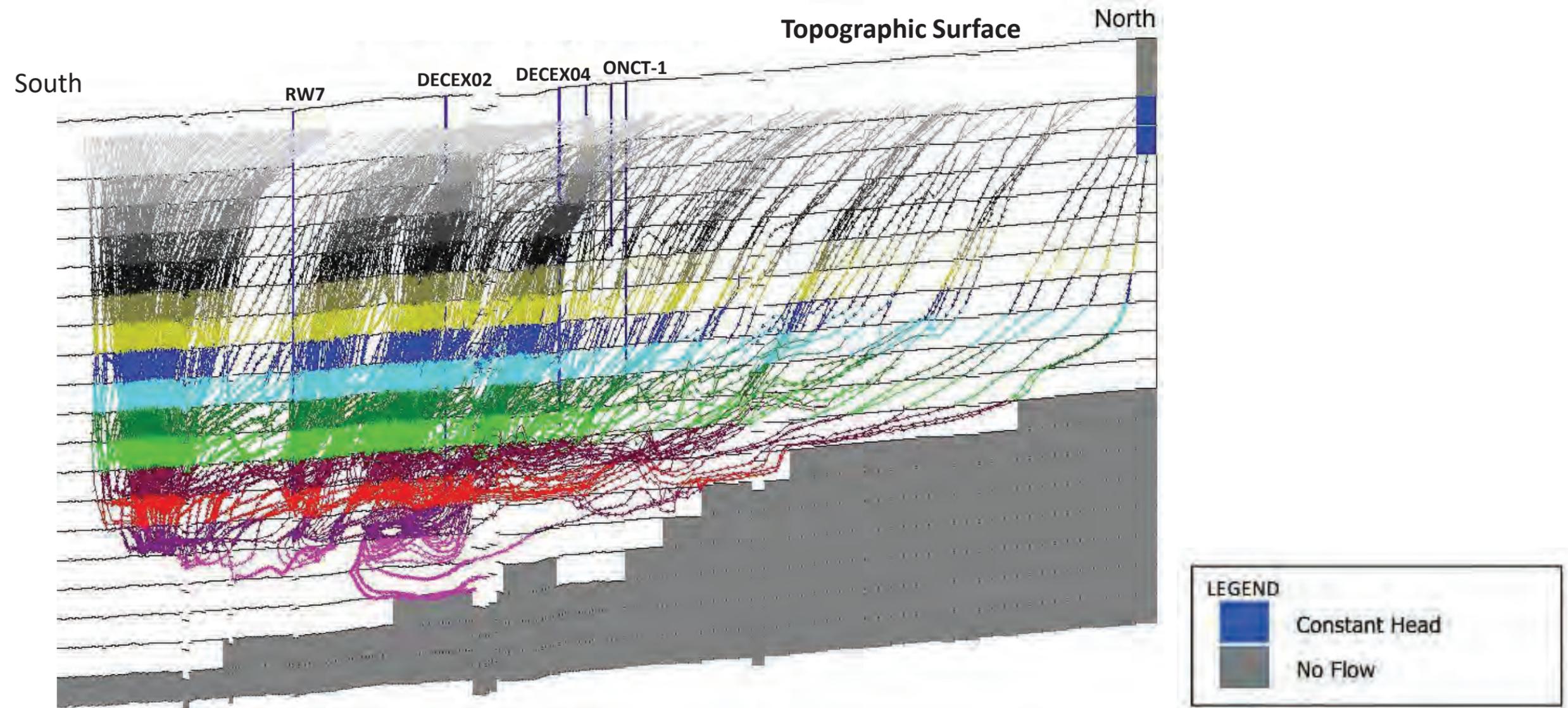
Circle of 25 particles with approximate radius of 50 feet was initiated in the center of the model layers where the screened zone of the RW occurs

Particles are color coded by model layer/depth

Particle tracking represents advective flow through the 3-D simulated groundwater domain, not actual travel of contamination

● Navy RW Well

Navy Groundwater Model – Scenario 5 – Reverse Particle Tracking from RWs



Cross Section exhibits 5 times vertical exaggeration (focused view in RW area)

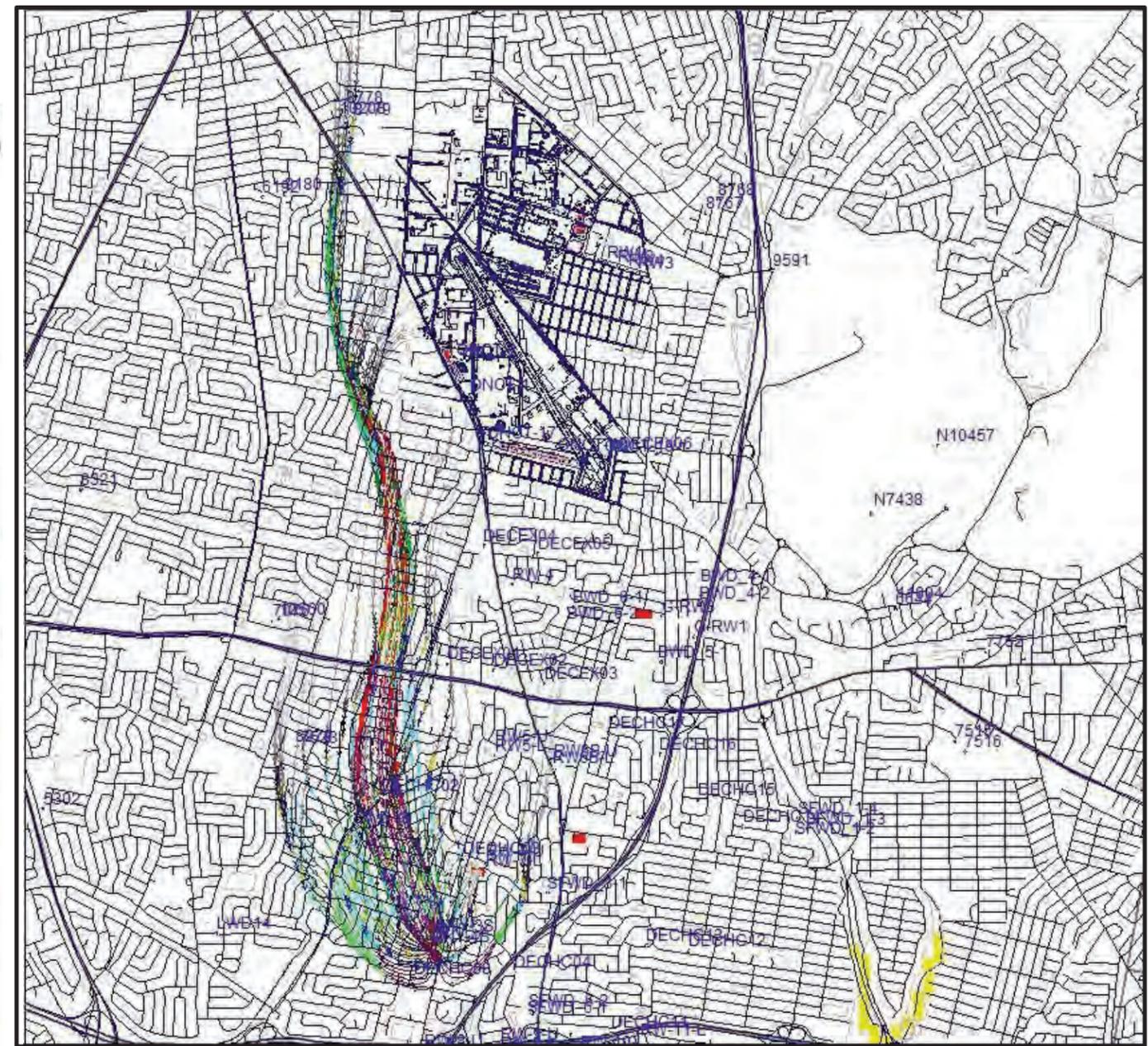
Cross Section Extends from NWIRP Bethpage Facility in North to Southern State Parkway in South

Particles are color coded by model layer/depth

Navy Groundwater Model – Scenario 5 – Reverse Particle Tracking from RWs – Cross Section

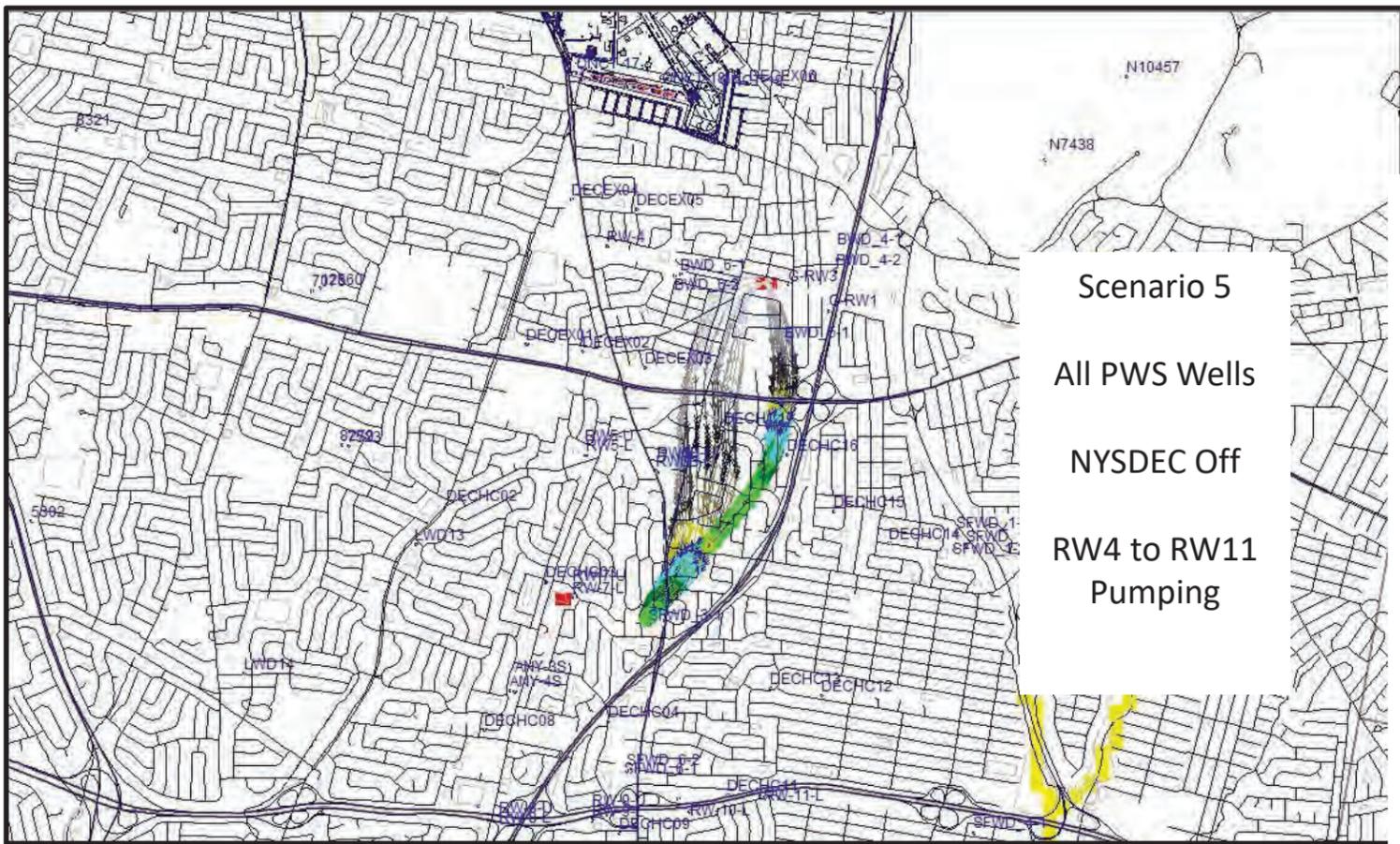


Reverse Particle Tracking from Levittown Well 7523

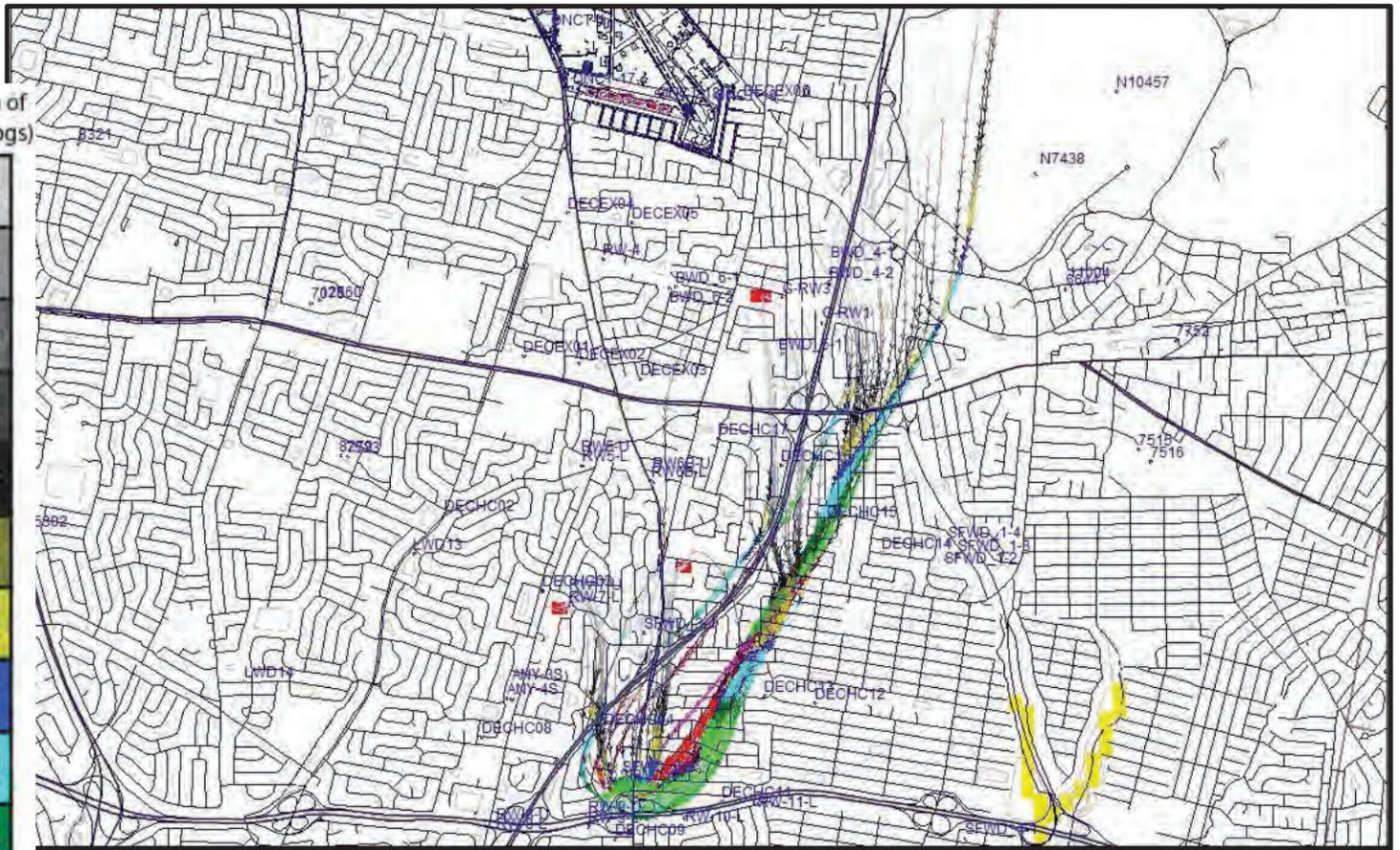


Reverse Particle Tracking from New York American Water ANY-4S

Navy Groundwater Model – Scenario 5 – Reverse Particle Tracking from Local PWS Wells



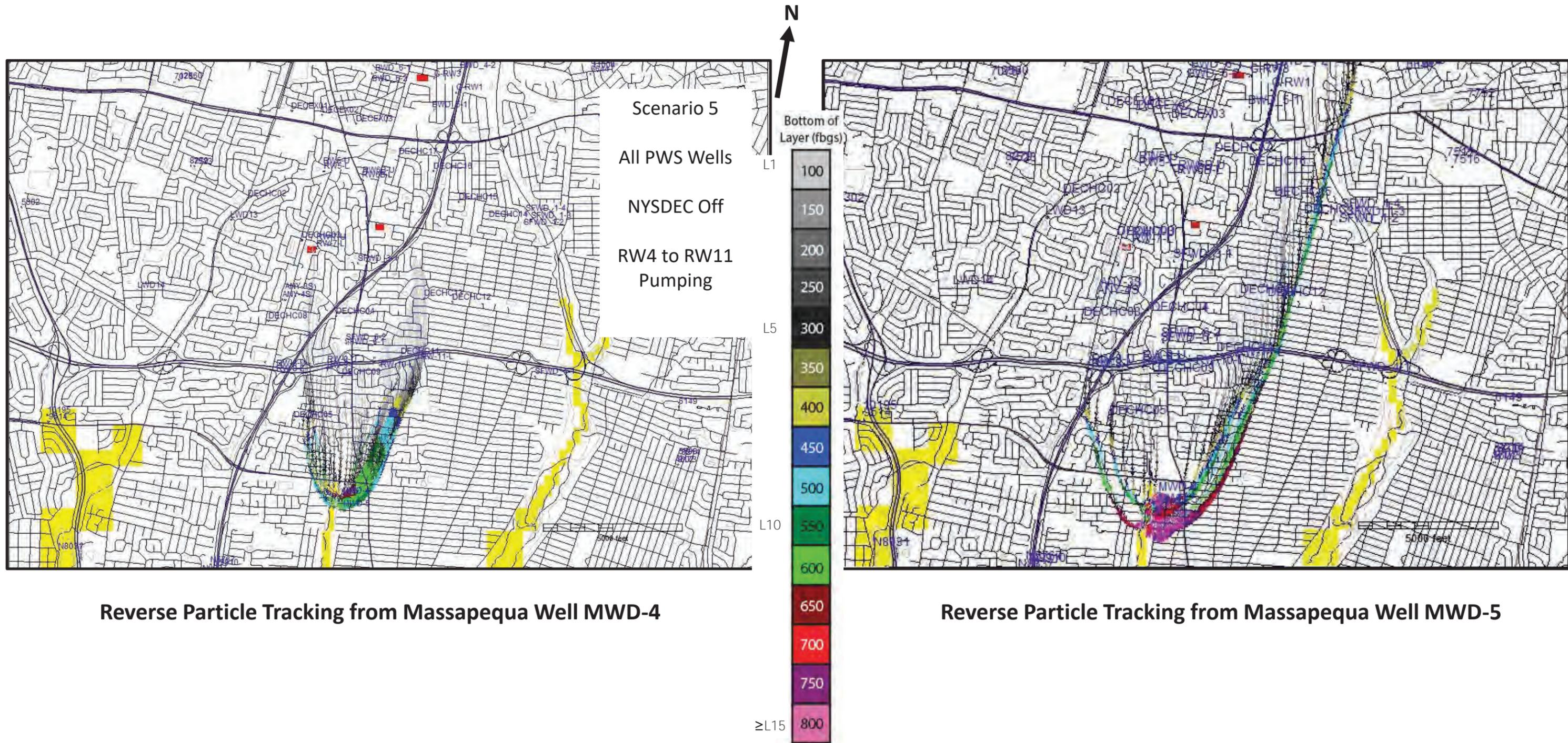
Scenario 5  
All PWS Wells  
NYSDEC Off  
RW4 to RW11  
Pumping



Reverse Particle Tracking from South Farmingdale Well SFWD 3

Reverse Particle Tracking from South Farmingdale Well SFWD 6

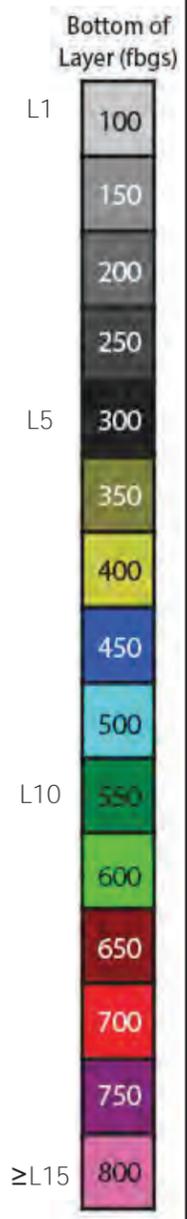
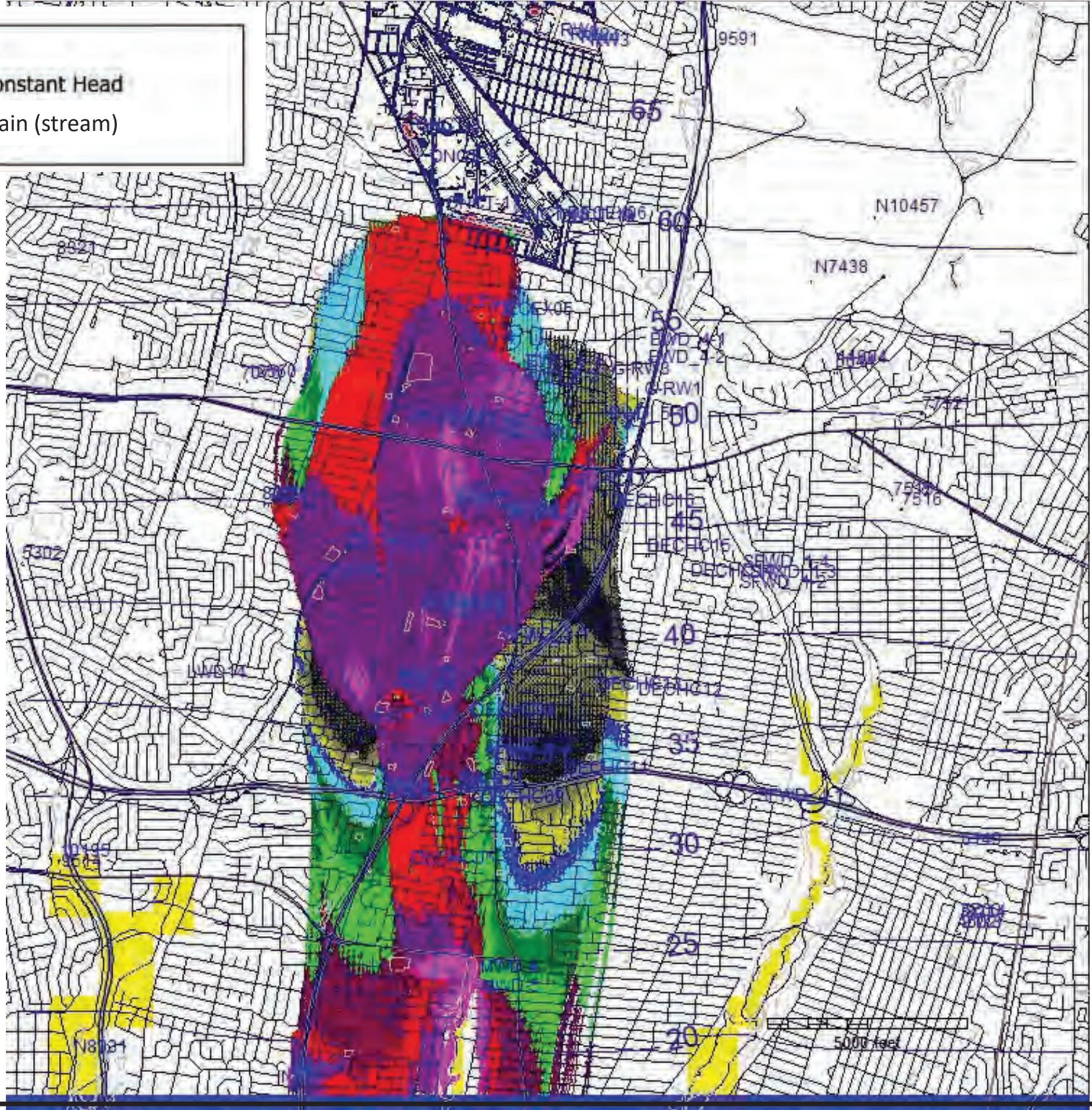
Navy Groundwater Model – Scenario 5 – Reverse Particle Tracking from Local PWS Wells



Navy Groundwater Model – Scenario 5 – Reverse Particle Tracking from Local PWS Wells

**LEGEND**

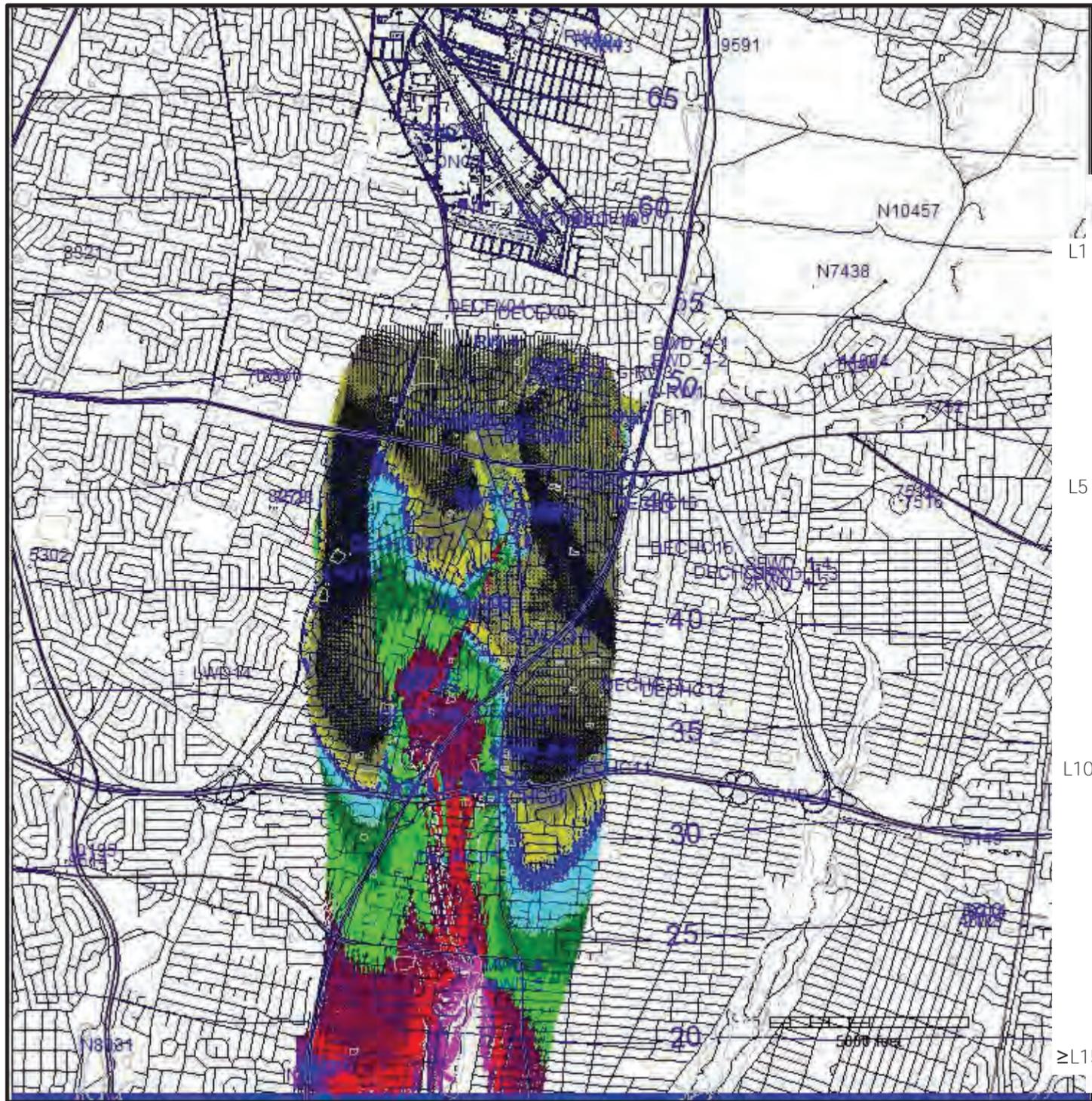
- Constant Head
- Drain (stream)



**Navy GW Model**  
**Scenario 1**  
 Forward Particle Tracking  
**All Layers**  
 Contour Interval 5 ft

**Wells Pumping**

All PWS Wells  
 NYSDEC SR Wells off  
 RW4 400 GPM  
 RW5 600 GPM  
 RW6 600 GPM



Particles starting in Layer 5 (250 - 300 feet below ground surface) only



Particles Starting in Layer 7 (350 - 400 feet below ground surface) only

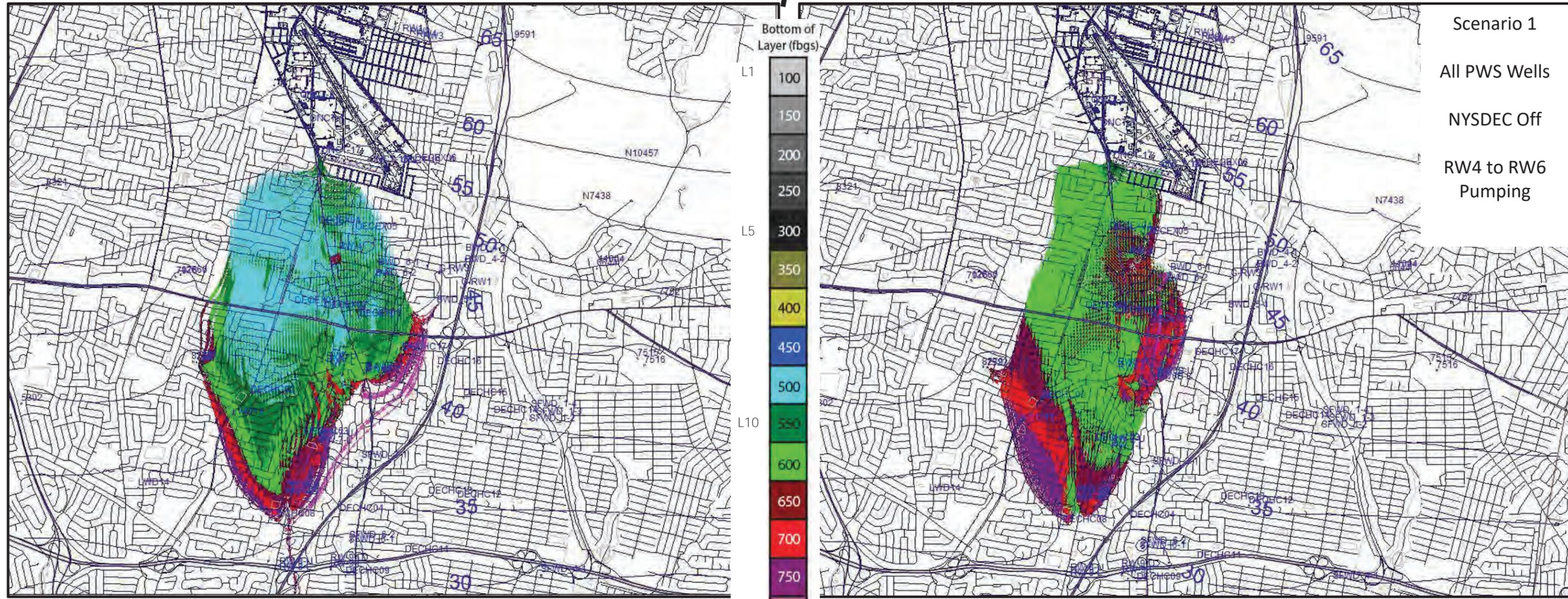
5 foot Contour Interval

Navy Groundwater Model – Scenario 1 – Forward Particle Tracking

- Scenario 1
- All PWS Wells
- NYSDEC Off
- RW4 to RW6 Pumping

Bottom of Layer (fbgs)

L1	100
	150
	200
	250
L5	300
	350
	400
	450
	500
L10	550
	600
	650
	700
	750
≥L15	800



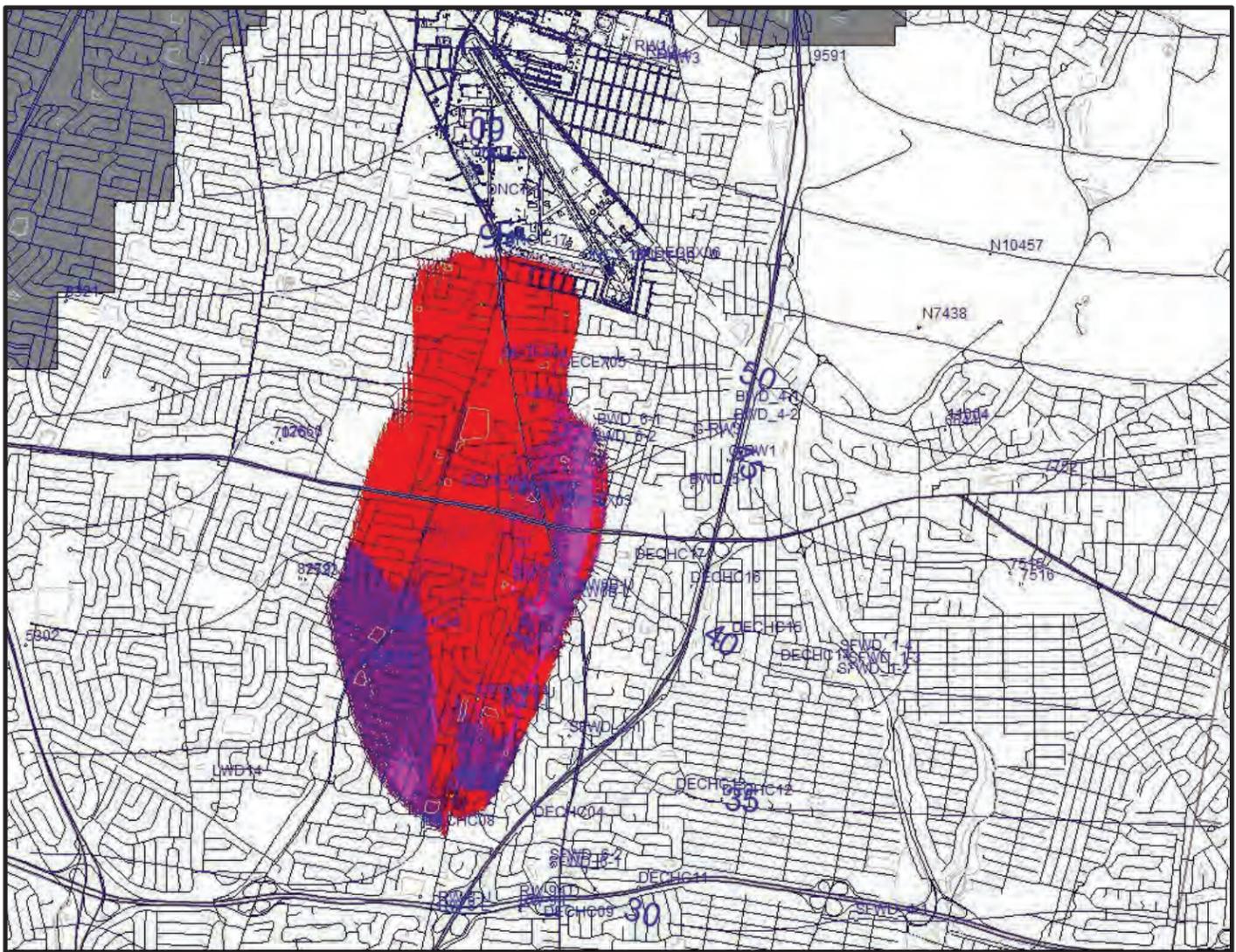
Scenario 1  
All PWS Wells  
NYSDEC Off  
RW4 to RW6  
Pumping

Particles starting in Layer 9 (450 - 500 feet below ground surface) only

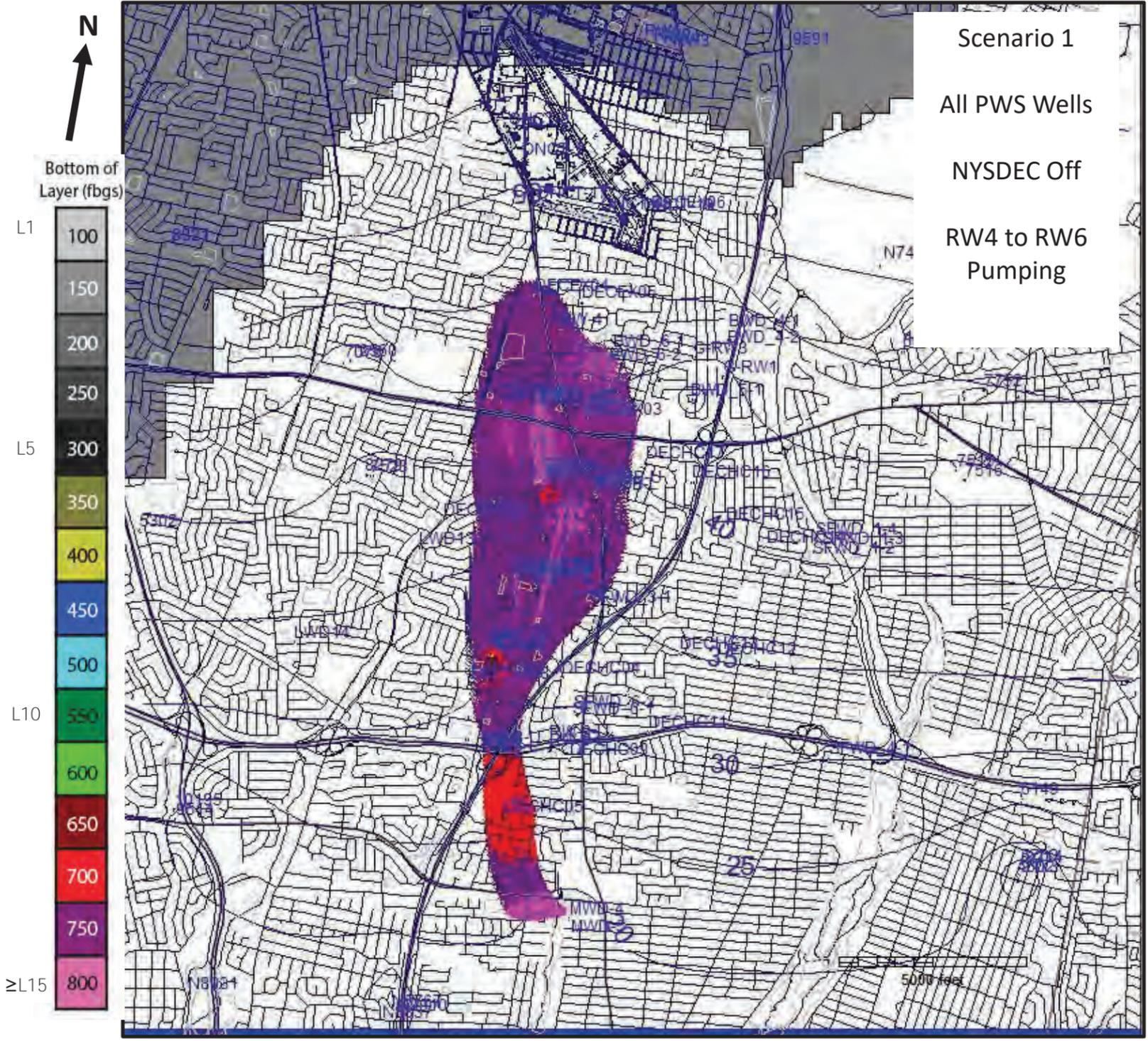
Particles starting in Layer 11 (550 - 600 feet below ground surface) only

5 foot Contour Interval

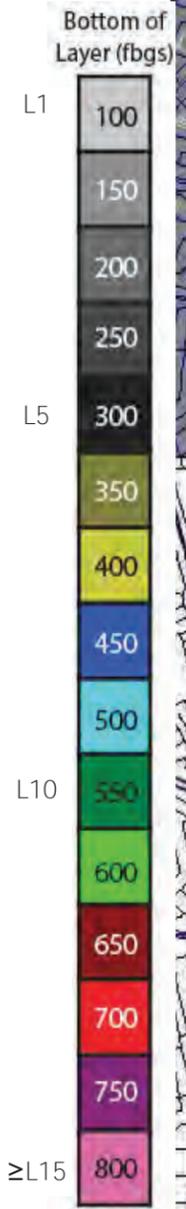
### Navy Groundwater Model – Scenario 1 – Forward Particle Tracking



Particles starting in Layer 13 (650 - 700 feet below ground surface) only



Particles starting in Layer 14 (700 - 750 feet below ground surface) only



5 foot Contour Interval

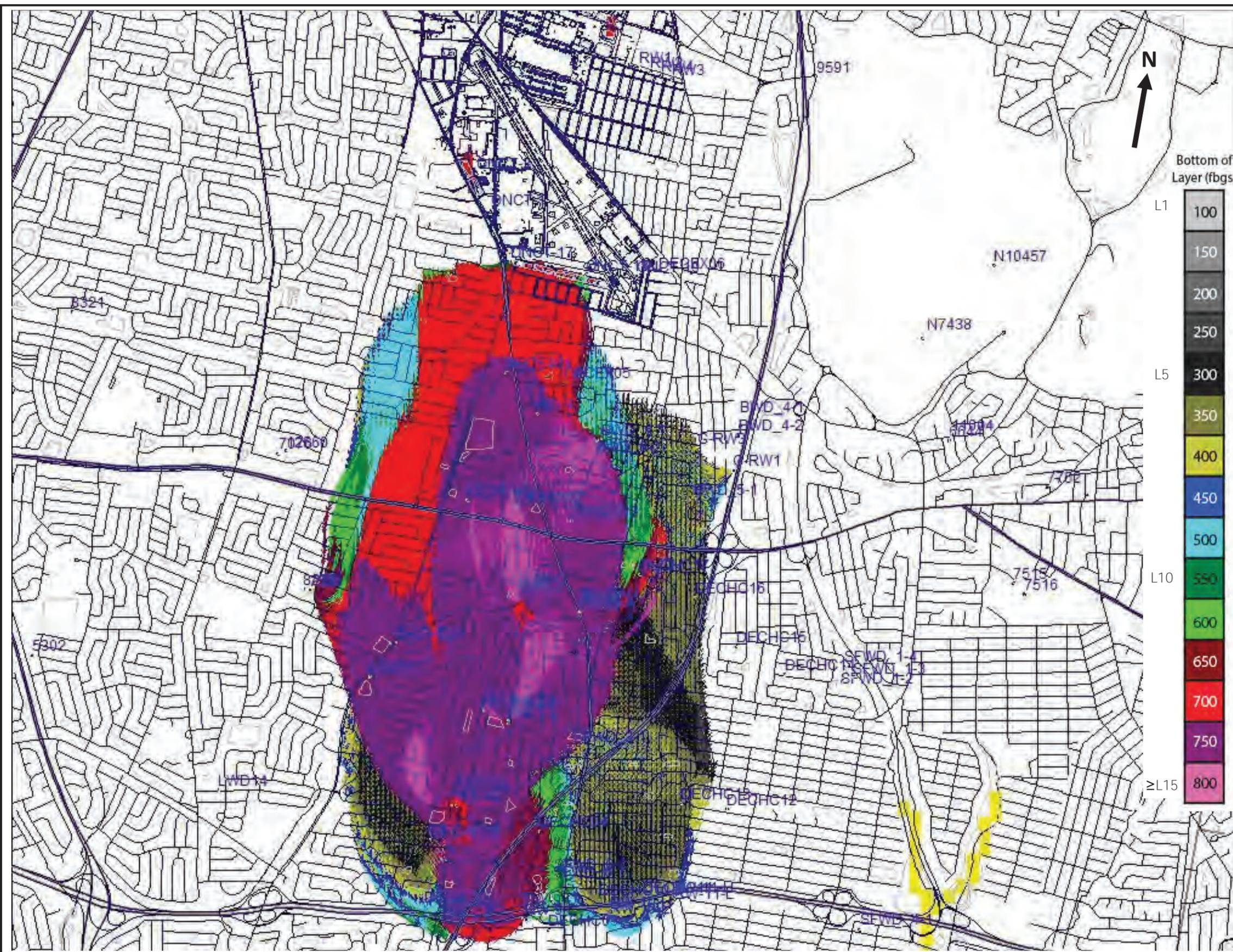
Navy Groundwater Model – Scenario 1 – Forward Particle Tracking

# Navy GW Model

## Scenario 5

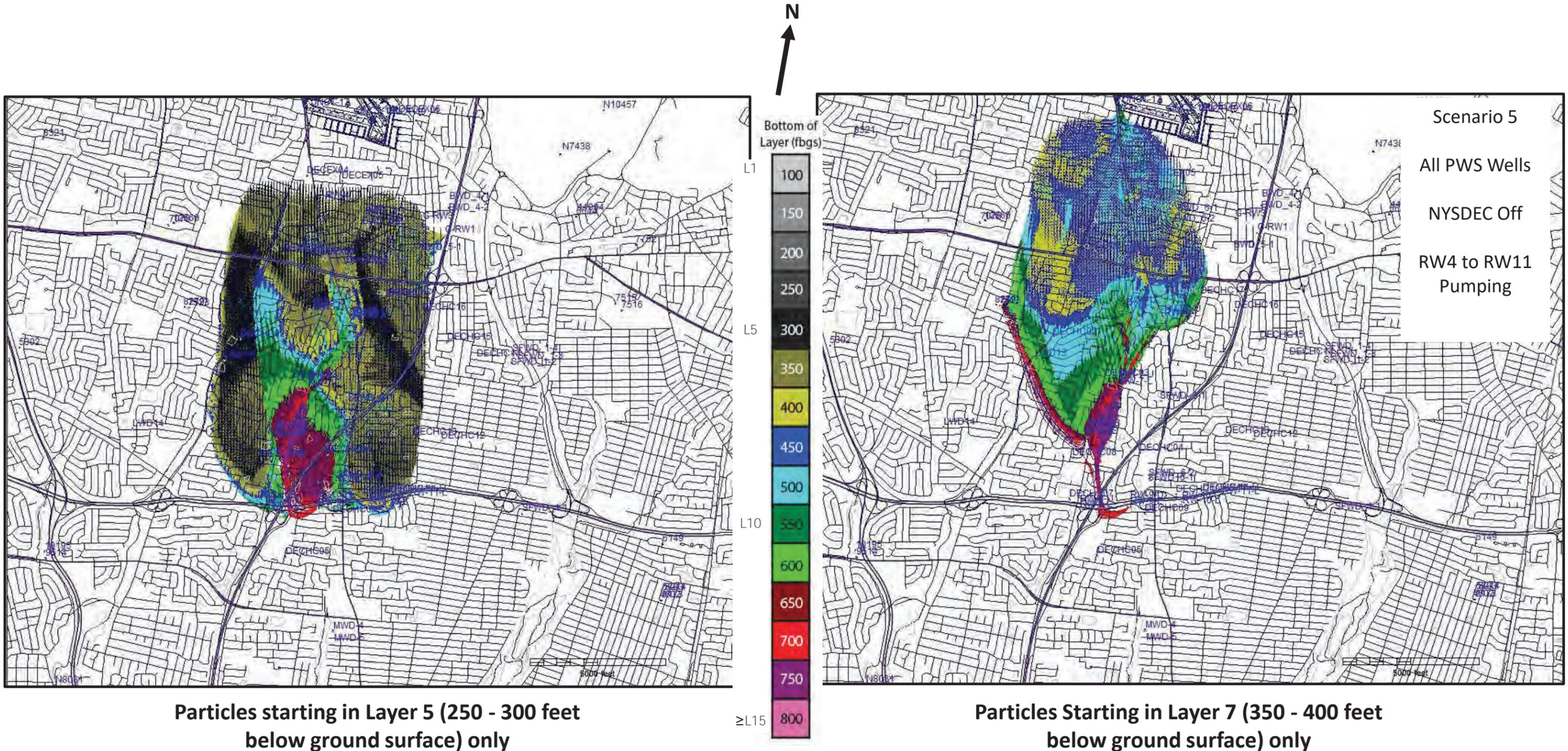
Forward Particle Tracking

### All Layers

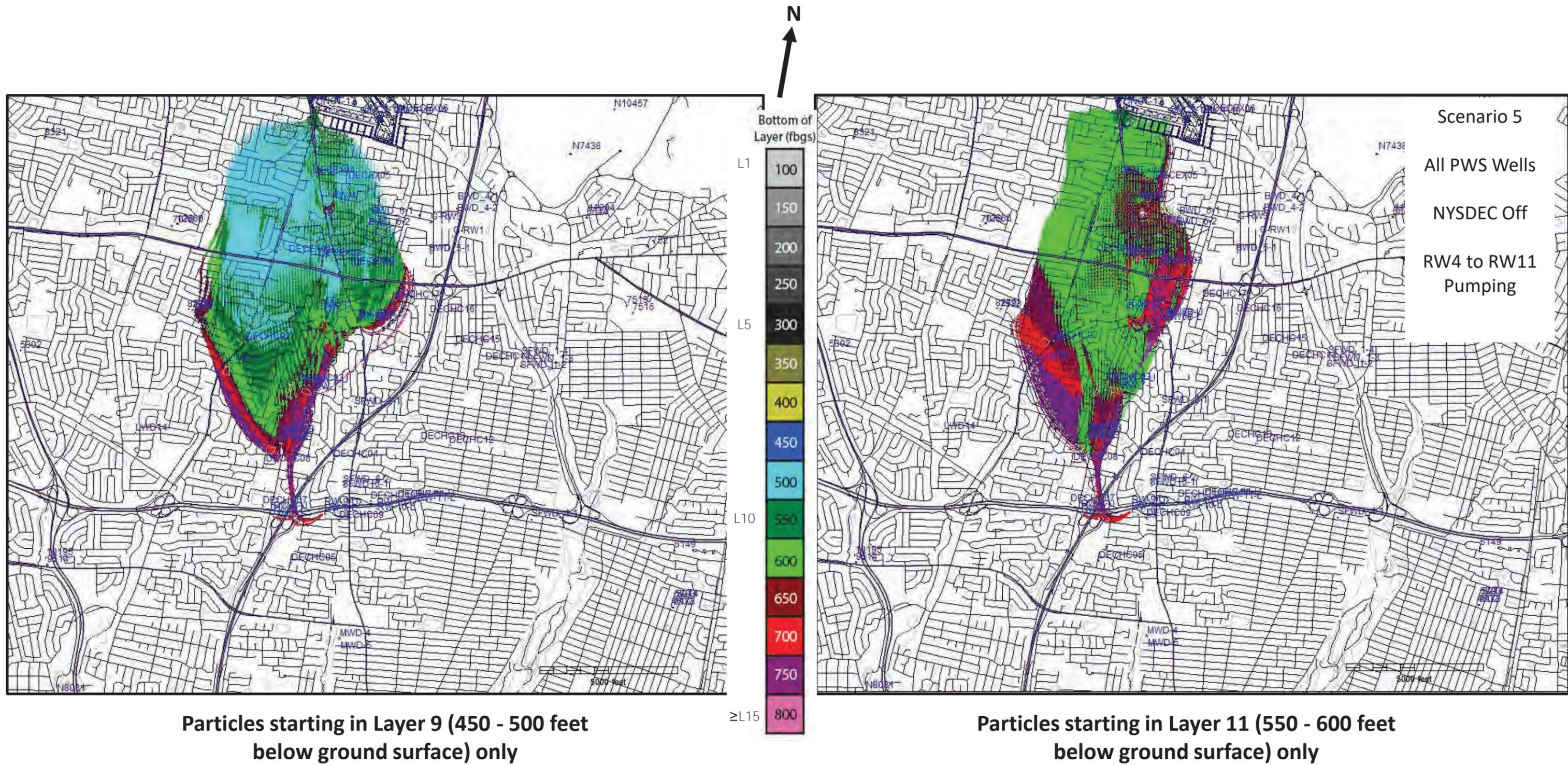


### Wells Pumping

- All PWS Wells
- NYSDEC SR Wells Off
- RW4 400 GPM
- RW5 600 GPM
- RW6 600 GPM
- RW7 600 GPM
- RW8 600 GPM
- RW9 600 GPM
- RW10 450 GPM
- RW11 475 GPM

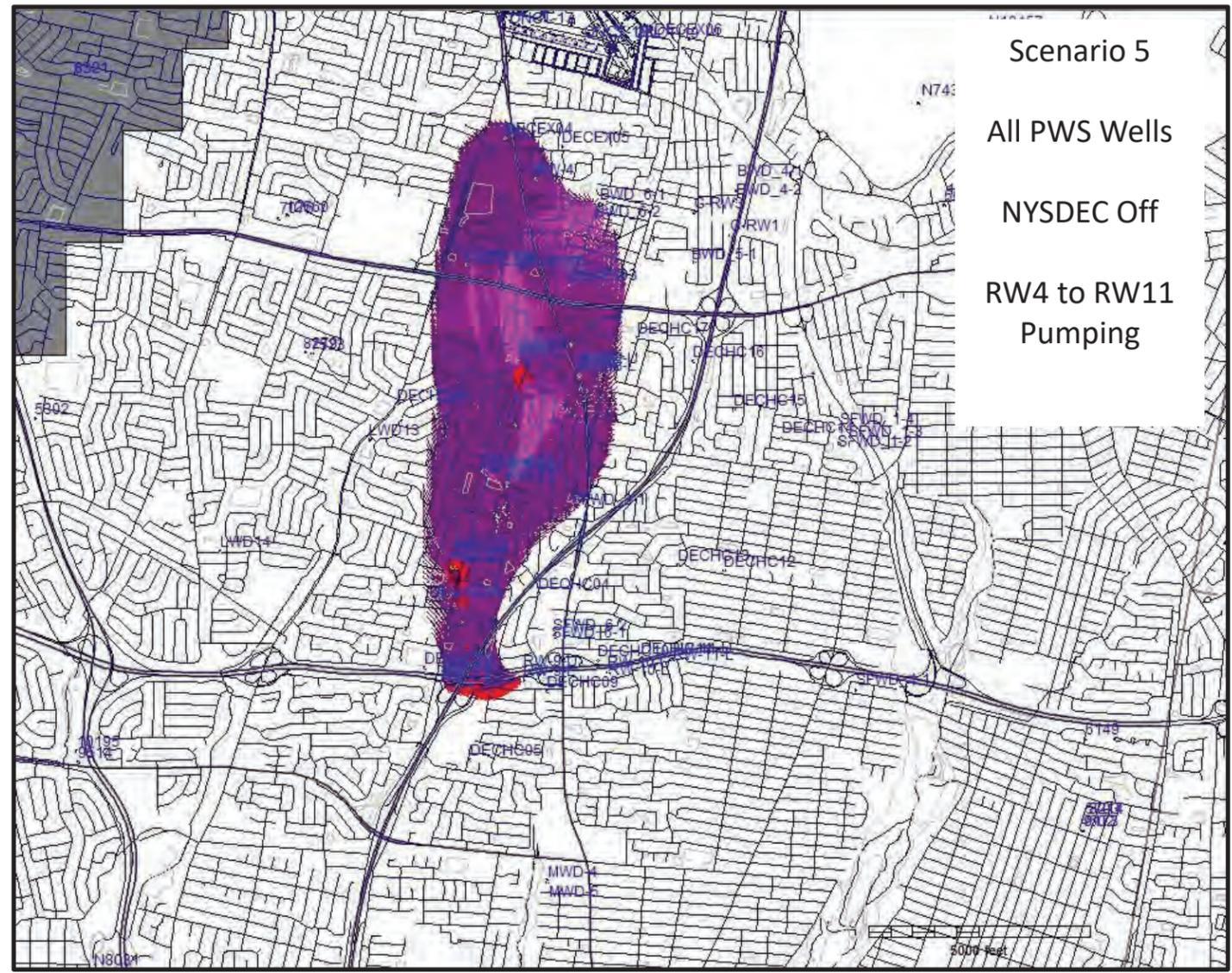
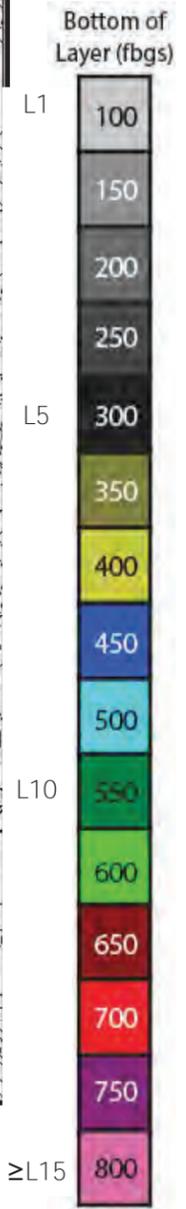
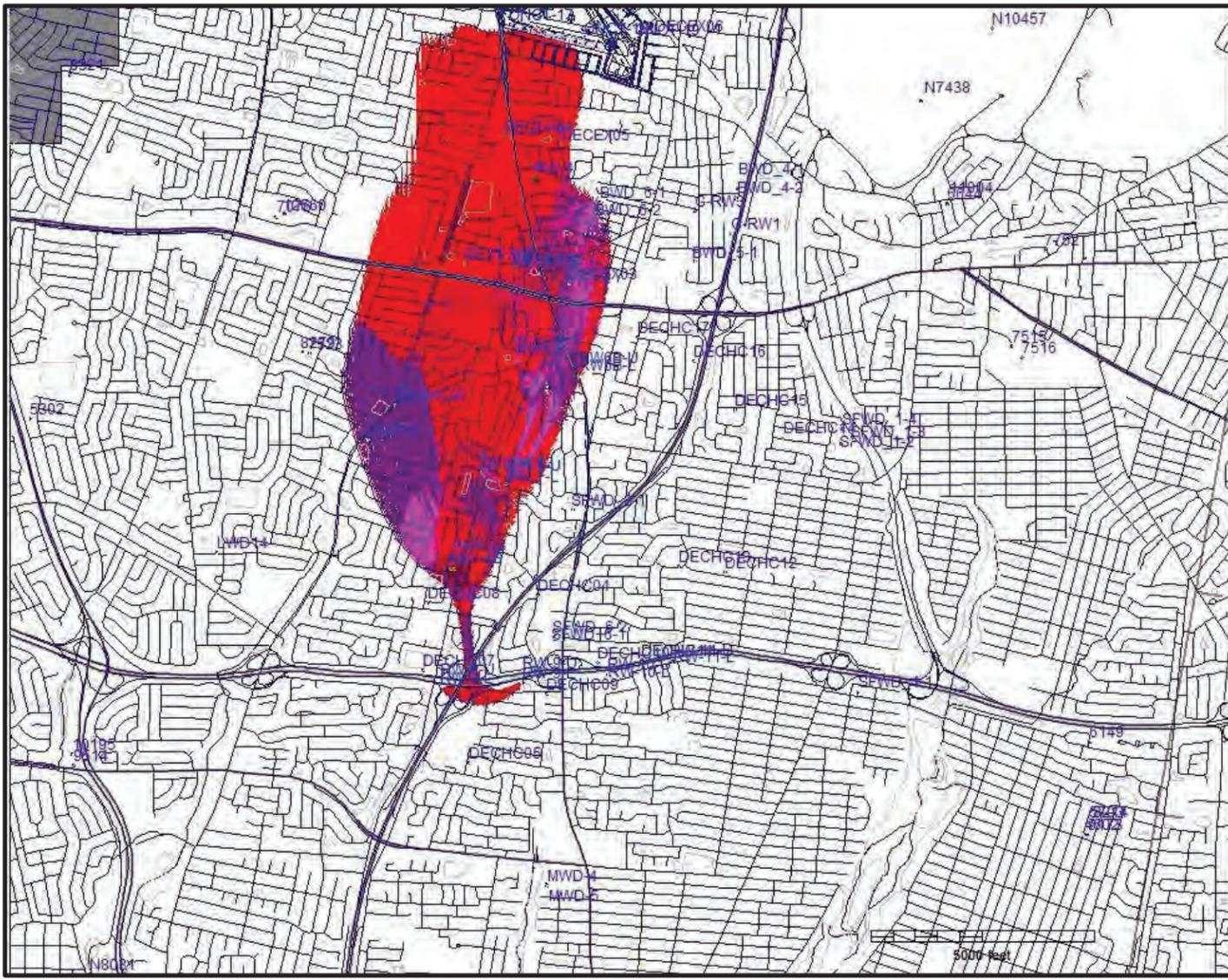


Navy Groundwater Model – Scenario 5 – Forward Particle Tracking



5 foot Contour Interval

## Navy Groundwater Model – Scenario 5 – Forward Particle Tracking



Scenario 5  
All PWS Wells  
NYSDEC Off  
RW4 to RW11  
Pumping

Particles starting in Layer 13 (650 - 700 feet below ground surface) only

Particles starting in Layer 14 (700 - 750 feet below ground surface) only

5 foot Contour Interval

### Navy Groundwater Model – Scenario 5 – Forward Particle Tracking