Quarterly Operations Report
Third Quarter 2017

Groundwater Treatment Plant
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant
Bethpage, New York

Contract No. N40085-10-D-9409
Contract Task Order No. 0002

December 2017

Prepared for:

Naval Facilities Engineering Command Mid-Atlantic
9324 Virginia Avenue
Norfolk, VA 23511

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12/01/17

Patrick Schauble
Program Manager

Date

12/01/17

Stephane Roy
Project Manager

Date

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Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirement
AS	air stripper
ASE	air stripper effluent
BFE	bag filter effluent
bgs	below ground surface
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DAR	Division of Air Resources
DCA	dichloroethane
DCE	dichloroethene
DMR	Discharge Monitoring Report
DO	dissolved oxygen
DoD	Department of Defense
DTW	depth to water
ECL	Environmental Conservation Law
EB	equipment rinsate blank
ELAP	Environmental Laboratory Accreditation Program
GOCO	Government Owned Contractor Operated
gpm	gallon per minute
GWTP	groundwater treatment plant
KGS	KOMAN Government Solutions, LLC
HMI	human-machine interface
IRP	Installation Restoration Program
L	liter
lb	pound
LGAC	liquid-phase granular activated carbon
LTM	Long-Term Monitoring
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
Navy	U.S. Department of the Navy
NELAC	National Environmental Accreditation Conference
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation

NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
ORP	oxidation reduction potential
OU	operable unit
PCE	tetrachloroethene
PLC	programmable logic controller
QA/QC	quality assurance / quality control
ROD	Record of Decision
RPD	relative percent difference
SC	standard conductivity
scfm	standard cubic feet per minute
SPDES	Storm Pollution Discharge Elimination System
TB	trip blank
TCE	trichloroethene
TE	treated effluent
TIC	tentatively identified compound
TSS	total suspended solids
TtEC	Tetra Tech EC, Inc.
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VGAC	vapor–phase granular activated carbon
VOC	volatile organic compound

1.0 INTRODUCTION

KOMAN Government Solutions, LLC (KGS) has prepared this Quarterly Operations Report for the GM-38 Area Groundwater Treatment Plant (GWTP) at the Naval Weapons Industrial Reserve Plant (NWIRP) in Bethpage, New York. This report has been prepared for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic, under Contract No. N40085-10-D-9409, Contract Task Order No. 0002. This Third Quarter 2017 Operations Report details activities that occurred from July to September 2017. Data was collected, and operational activities were performed by KGS in accordance with the following documents:

- *Final Operation, Maintenance & Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by Tetra Tech EC, Inc. (TtEC) in 2010, hereafter referred to as the "Operation and Maintenance (O&M) Manual."
- *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), UFP-SAP for Operations, Maintenance, and Monitoring of the Groundwater Treatment Plant, GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by TtEC in 2010.

1.1 Background

NWIRP Bethpage is located in east central Nassau County, Long Island, New York, approximately 30 miles east of New York City (**Figure 1**) and is currently listed by New York State Department of Environmental Conservation (NYSDEC) as an "inactive hazardous waste site" (#1-30-003B). In the late 1990s, the Navy's property totaled approximately 109.5 acres and was a Government Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. NWIRP Bethpage was bordered on the north, west, and south by property owned, or formerly owned, by NG that covered approximately 550 acres, and on the east by a residential neighborhood.

The GM-38 Area refers to a cluster of monitoring wells installed in the 1990s by NG. The GM-38 Area is approximately 8,500 feet south, southeast and hydraulically downgradient of NWIRP Bethpage. The GWTP is located within a utility easement with a street address of 100 Broadway, Bethpage, NY.

The "hot spot" cleanup remedy for the GM-38 Area groundwater was originally set forth in Record of Decision (ROD) documents for Operable Unit 2 (OU 2) Groundwater for the NG and NWIRP Sites (New York State Registry Site Numbers 1-30-003A & 1-30-003B, respectively) issued by NYSDEC Division of Environmental Remediation in March 2001 and for the NWIRP Bethpage Site by NAVFAC in April 2003 (Revision 1). The selected remedy was chosen in accordance with the New York State Environmental Conservation Law (ECL) and the Navy's Installation Restoration Program (IRP). It is also consistent with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended, 42 U.S.C. §§ 9601-9675.

1.2 GWTP Overview

Currently, groundwater is extracted from recovery well RW-1 (RW-3 was taken off-line in July of 2015, as described below) and treated in the GWTP. The treatment process consists of flow equalization, air stripping and vapor-phase carbon treatment, bag filtration, and liquid-phase carbon treatment. Though the GWTP was originally equipped with a pH adjustment system utilizing sodium hydroxide, it has since been determined that pH adjustment is not necessary, and the equipment has been taken off-line and sodium hydroxide sent off site for beneficial reuse. A process flow diagram is presented as **Figure 2**. The treated water is either re-injected into injection well IW-1 or discharged into the Nassau County Recharge Basin #495. Under CERCLA, the Navy is required to meet the effluent requirement in the NYSDEC's Storm Pollution Discharge Elimination System (SPDES) Equivalent Application as an Applicable or Relevant and Appropriate Requirement (ARAR).

The GWTP was designed to operate at an average flow rate of 1,100 gallons per minute (gpm) (800 gpm from RW-1 and 300 gpm from RW-3), as measured by the average discharge flow rate. It was determined that this flow rate would be necessary to effectively contain the higher concentration of contamination in the GM-38 Area groundwater. Volatile Organic Compounds (VOCs) in the influent groundwater consist of trichloroethene (TCE), tetrachloroethene (PCE), vinyl chloride (VC), cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichloroethane (1,2-DCA), benzene, toluene, and total xylenes.

The air stripper (AS) is a structural aluminum tower that is packed with 3.5-inch diameter polypropylene Jaeger Tripack. Groundwater is pumped to the air stripper distribution port and sprayed over the column of Jaeger Tripack at a flow rate of approximately 1,100 gpm. Previously, 100 gpm of recirculated water was also rerouted through the AS, but as of October 2010, recirculation was no longer deemed necessary to the operation of the system. An induced draft countercurrent flow of air enters the air stripper below the base of the packing material at a rate of 8,000 standard cubic feet per minute (scfm). The large surface area of the packing material allows for a mass transfer of the VOCs from the groundwater into the air stream. The VOCs in the off-gas, except for VC, are removed via two 20,000-lb vapor phase granular activated carbon (VGAC) units (VGAC-1 and VGAC-2). VC is oxidized by a 20,000-pound (lb) vessel containing zeolite impregnated with potassium permanganate (VGAC-3) into potassium chloride and carbon dioxide. The potassium chloride remains in the pore structure of the zeolite substrate. The treated off-gas is discharged from the stack.

Water treated by the air stripper is subsequently processed through three 8,000-lb liquid phase granular activated carbon (LGAC) units in parallel prior to discharge in the recovery basin or injection well, if necessary. To date, no water has been discharged to the injection well for a sustained duration.

The GWTP is controlled by a programmable logic controller (PLC)-based digital and analog control system, with instrumentation that monitors pH, pressure, tank level, flow transmitters, differential pressure, water level in recovery wells, and motor operational status. The information in the PLC is made available to an operator via a human-machine interface (HMI) program. By using this program, the status of the GWTP can be displayed in real time and adjusted, if necessary, by the operator.

A 2014 evaluation of the GM-38 Area, conducted in order to better determine the capture zone of the recovery wells, recommended that use of recovery well RW-3 be discontinued ("*Capture Zone Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant*" [Tetra Tech 2014]). The report was sent to NYSDEC in March 2014 and recommended ceasing operation of recovery well RW-3 and increasing the pumping rate of recovery well RW-1. These system modifications would maintain the existing GWTP pumping rate of 1,000 to 1,100 gpm while maintaining the desired capture zone of the GWTP (Tetra Tech 2014). NYSDEC concurred with the implementation of this path forward and associated system modifications on 20 April 2015. On 1 July 2015, in accordance with the approved path forward, recovery well RW-3 was taken off-line. The flowrate of recovery well RW-1 was increased from approximately 800 gpm to approximately 1,000 gpm.

2.0 GWTP OPERATIONS AND MAINTENANCE

While designed to run completely automated, the GWTP requires regular visits by an operator to record and adjust operational parameters and to perform scheduled maintenance. The GWTP is equipped with telemetry that will alert an on-call operator in the event of a plant shutdown.

2.1 Routine Maintenance Activities

Routine maintenance activities at the GWTP were performed during the operator's visits. These activities include general site inspections, collection of operational data (water and vapor flowrates, differential pressures across the AS, carbon units, bag filter units and blower discharge pressures, tank levels and totalizer readings), measurement of water levels in the recovery wells, adjustment of pump signal settings, collection of vapor and process water samples, changing out of bag filters, switching of lead/lag pump assignments, and preventive maintenance of system equipment.

In addition, the following maintenance tasks were also performed during this reporting period:

- On 1 August, the motors for the air stripper pumps and LGAC feed pumps were rotated.
- On 13 July and 11 September, the bag filters were changed out.

2.2 Non-routine Maintenance / Site Activities

The following non-routine activities occurred during the Third Quarter:

- On 12 July, the system went off-line, for approximately 1.5 hours, due to power outage caused by a thunderstorm. A blown fuse was replaced in the Verbatim electronic communication system.
- On 6 August, the system went off-line due to an apparent lightning strike which also damaged the level transducer at well RW1 resulting in inaccurate water level measurements. The GWTP remained off-line for 9 hours until it was restarted in the morning on 7 August. Well RW1 was placed in “manual” mode at a reduced flow rate of 800 gpm until a replacement level transducer could be fabricated and subsequently installed on 17 August.
- On 30 August, Wire-to-Water was on site to troubleshoot a discrepancy in the measurements reported by the plant instrumentation and those shown on the HMI output screen which were thought to be caused by a communication malfunction. Wire-to-Water diagnosed the problem as a defective analog input card on the programmable logic controller (PLC) and three damaged intrinsic safety barriers in the control panel. The necessary replacement parts were ordered while the GWTP continued to operate.
- On 12-13 September, the Fall Semi-Annual Long-Term Monitoring (LTM) sampling event was conducted at eight monitoring wells and one recovery well (RW3).
- On 19 September, Wire-to-Water was on site to install the replacement PLC analog input card and the three intrinsic safety barriers. The system was off-line for approximately 5 hours.

- On 22 September, recovery well RW-3 was operated for 3 hours to maintain the integrity of the well for potential future use.

3.0 GWTP MONITORING

The intent of the GWTP is to remove contaminant mass and reduce elevated VOC levels to levels similar to those in the surrounding aquifer. It is anticipated that GWTP operation will minimize contaminant impacts on water supply wells and currently unaffected portions of the groundwater aquifer. The GWTP is not intended to remediate groundwater contamination in the local aquifer to non-detectable levels (TtEC 2010). Various process samples (water and vapor) are collected on a monthly basis to monitor GWTP efficiency and to ensure compliance with Federal and State effluent discharge and air emission requirements. In addition, groundwater samples are collected semi-annually to monitor water quality and determine the effectiveness of the remediation activities and monitor the hydraulic containment and capture of impacted groundwater by the recovery wells.

3.1 Process Water Quality Monitoring

Processed groundwater is analyzed to comply with calculations submitted by the Navy and documented in the NYSDEC Water Division SPDES Equivalent Application for the effluent limitations and monitoring requirements. These results are also submitted to NYSDEC on a monthly basis in the form of a Discharge Monitoring Report (DMR). A copy of NYSDEC's effluent limitation and monitoring constituents and the reporting forms are included in **Appendix A**.

Monthly aqueous samples are collected from the active recovery well, RW-1, and the treated effluent discharge line. In addition, various intermediary process system samples are collected monthly, that include the air stripper effluent (ASE), bag filter effluent (BFE), and effluent of each of the three LGAC units (LC1, LC2, and LC3). Sampling frequency of the inactive recovery well, RW-3, was reduced from monthly to semi-annually. The analytical results of monthly process water samples collected during the Third Quarter are presented in **Table 1**. The data demonstrates that the listed constituents in the SPDES Equivalent Application were below the daily maximum goal for the treated effluent during the Third Quarter. **Table 1** also summarizes the average monthly flowrates in gallons per minute along with the total volume of water processed during each month of the Third Quarter. Monthly DMRs for the Third Quarter (July – September 2017) are included in **Appendix A**.

Based on NYSDEC's request for the Navy to sample and analyze non site related constituents in groundwater near Bethpage Water District Plant 4, the Navy has added 1,4-dioxane (USEPA Method 8270D) on an annual basis from RW-1 and the Treated Effluent location. In addition, groundwater samples are collected and analyzed for radium 226 and radium 228 (USEPA Method 903.1 and 904.0/9320) on an annual basis from RW-1 and the Treated Effluent. Results of the annual non-VOC parameters were provided in the First Quarterly 2017 Operations Report March.

On 18 August 2017, NYSDEC renew the SPDES Equivalence Application that is effective for 10 years. NYSDEC requested that three additional constituents be monitored monthly: Chloroform, 1,4-Dioxane and trichlorofluoroethane.

3.2 Air Quality Monitoring

Treated off-gas discharged at the stack of the GWTP is subject to emissions limitations. Original

discharge goals were derived from calculations submitted by the Navy and documented in the NYSDEC Division of Air Resources (DAR) Equivalent Application in July 2009. In November 2011, the Navy submitted an evaluation proposing revised discharge goals, which NYSDEC concurred with in October 2013. A copy of this documentation is included as **Appendix B**.

While only sampling of the stack emissions is required for NYSDEC compliance, process vapor samples are also collected using 6-liter (L) summa canisters at various locations to monitor for breakthrough of the VGAC units. The analytical results of monthly influent and effluent vapor samples as well as midfluent samples (VC12 and VC23) collected during the Third Quarter are presented in **Table 2**. Air emissions calculations using the stack vapor concentrations along with discharge flowrates are presented in **Table 3**. The calculations demonstrate that all constituents were within the emission parameters during the Third Quarter based on the calculated emission rates.

3.3 Groundwater Quality Monitoring

The groundwater monitoring well system at the GM-38 Groundwater Remediation Area consists of fourteen monitoring wells, three recovery wells (RW-1, RW-2, RW-3) and one injection well (IW-1). Groundwater level measurements were collected prior to sampling and are summarized in **Table 4**. Though RW-2 was installed in 2005, a pump was never installed in this well and the well is not operated as a recovery well due to concerns expressed by the Bethpage Water District. As mentioned above, RW-3 was taken off-line on 1 July 2015. Well locations are depicted on **Figure 3**.

Depths to water (DTW) measurements are collected from twelve of the monitoring wells on a quarterly basis. Prior to 2014, water quality samples were collected from eight of the monitoring wells on a quarterly basis; beginning in 2014, the sample collection frequency was reduced to semi-annually, with sample collection generally in the March and September time-frame. The monitoring network includes well clusters located near the recovery and injection wells as described below and as shown on **Figure 3**. In addition, two wells, GM-38D and GM-38D2, located at the corner of Arthur Avenue and Broadway, are monitored by others.

Semi-annual groundwater samples are collected from eight monitoring wells (RW1-MW1, RW1-MW3, RW2-MW1, RW3-MW1, RW3-MW2, RW3-MW3, RW3-MW4, and TP-01) and one recovery well (RW-3). Samples are collected from monitoring wells using bladder pumps in accordance with the U.S. Environmental Protection Agency (USEPA) low-flow sampling methodologies. Samples are collected from recovery well RW-3 using the dedicated extraction pump following a 3-well volume purge. Results of the groundwater sampling for the Third Quarter are presented in Section 3.3.1 below, and descriptions of monitoring well locations are as follows:

Recovery Well 1 (RW-1) Monitoring Wells
The RW-1 cluster consists of three monitoring wells screened between 395 and 435 feet below ground surface (bgs). RW1-MW1 is located approximately 140 feet northwest of RW-1 and RW1-MW2 is located approximately 50 feet north of RW-1. RW1-MW3 is located approximately 400 feet northeast of RW-1, on the eastern side of Seaford Oyster Bay Expressway. All three wells are hydraulically monitored while only RW1-MW1 and RW1-MW3 are also monitored for water quality.

Recovery Well 2 (RW-2) Monitoring Wells

The RW-2 cluster consists of three monitoring wells screened between 470 and 510 feet bgs. RW2-MW1 is located approximately 60 feet northwest of RW-2, RW2-MW2 is located approximately 20 feet west of RW-2, and RW2-MW3 is located approximately 100 feet west of RW-2. All three wells are hydraulically monitored while only RW2-MW1 is monitored for water quality.

Recovery Well 3 (RW-3) Monitoring Wells

The RW-3 cluster consists of four monitoring wells. RW3-MW2 and RW3-MW4 are screened between 475 and 495 feet bgs. RW3-MW1 and RW3-MW3 are screened between 330 and 350 feet bgs and 320 and 340 feet bgs, respectively. RW3-MW1 and RW3-MW2 are located approximately 500 feet west of the GM-38 cluster, at the intersection of Arthur Avenue and Leroy Avenue. RW3-MW3 and RW3-MW4 are located approximately 400 feet north of the intersection of Arthur Avenue and Broadway. All four wells are both hydraulically monitored and monitored for water quality.

TP-01

TP-01 is screened between 450 and 470 feet bgs and is located approximately 25 feet north of the GWTP building, inside the fenced area. It is hydraulically monitored to observe the change in water levels due to the influence from the pumping rates at the neighboring public water supply well field near the hot spot area and is also monitored for water quality.

Injection Well 1 (IW-1) Monitoring Well

There is one monitoring well associated with injection well IW-1. IW1-MW1 is screened between 20 and 150 feet bgs, is located approximately 20 feet south of IW-1, and is only hydraulically monitored on a quarterly basis.

3.3.1 Groundwater Quality Results

KGS collected groundwater level measurements of the twelve monitoring wells on 13 September. Groundwater samples for the Third Quarter were collected on 12-13 September 2017. Field parameters measured during well purging, which consisted of pH, specific conductance (SC), temperature, oxidation-reduction potential (ORP) and dissolved oxygen (DO), are summarized in **Table 5**. Following stabilization of field parameters, groundwater samples were collected. Copies of the field logs and chain of custody documentation are presented in **Appendix C**.

Groundwater samples were submitted to a National Environmental Laboratory Accreditation Conference (NELAC), Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certified, laboratory, Analytical Laboratories Services, located in Rochester, NY. The samples were analyzed for VOCs (including tentatively identified compounds [TICs]) via USEPA Method 624, mercury via USEPA Method 245.1, total suspended solids (TSS) via USEPA Method SM20 2540D, and 1,4-dioxane via USEPA Method 8270D. Validated analytical sampling results collected during the Third Quarter monitoring event are summarized in **Table 6.** Data validation reports are presented in **Appendix D**.

3.3.2 Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring event in accordance with the *Final Sampling and Analysis Plan* (TtEC 2010a). These samples consisted of blind field duplicates (collected from RW3-MW3 during the Third Quarter), matrix spike/matrix spike duplicate (MS/MSD) samples, equipment rinsate blanks (EB) collected at a rate of one per sampling event, and trip blanks (TB) submitted at a rate of one per sample cooler. No contaminants were detected in the equipment blank or trip blank submitted for this event. The overall absence of contamination in the blanks indicates that quality control requirements were achieved.

For field duplicate samples, the precision between the original sample and its duplicate is evaluated by calculating the relative percent difference (RPD). RPDs for the Third Quarter sampling event are presented in the data validation report in **Appendix D**. As indicated, RPDs for all analytes were well below the guideline of 50%. This overall consistency between the samples and its duplicate verifies that proper sample collection methods were followed.

3.3.3 Groundwater Concentration Trends

Historical groundwater analytical results through the Third Quarter are presented in **Table 7**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the Third Quarter monitoring event are presented graphically as **Figure 4**. Additionally, concentration trends of select VOCs (cis-1,2-DCE, TCE, and PCE, as well as VC for RW-1) over time for each recovery well (RW-1, sampled monthly, and RW-3 now sampled semi-annually) and the eight monitoring wells sampled during the Third Quarter monitoring event are presented in **Figures 5 through 14** and discussed below.

Figure 5 presents concentrations detected at recovery well RW-1. Concentrations of TCE have decreased from initial concentrations in early 2010 (maximum value of 747 µg/L detected in April 2010), remaining below 300 µg/L since the latter half of 2012 and decreasing to a low of 95 µg/L during September 2017 sampling event. Concentrations of cis-1,2-DCE have followed a similar trend, decreasing from a high of 160 µg/L in February 2010 to a low of 6.5 µg/L in August 2017. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in April 2010 to a low of 21 µg/L during the September 2017 sampling event. Concentrations of VC have decreased below initial concentrations in 2010. After reaching a maximum concentration of 61 µg/L in February 2010, VC concentrations have remained below 5.0 µg/L since the final quarter of 2011 and below 1.0 µg/L since June 2013.

Figure 6 presents concentrations detected at recovery well RW-3, including the most recent data collected in the Third Quarter 2017. Concentrations of TCE have decreased from initial concentrations in February 2010 (660 µg/L), remaining below 300 µg/L from the latter half of 2012 through the Third Quarter 2015, with a low of 160 µg/L detected in December 2013. In March 2016, the TCE concentration increased to 371 µg/L; however, in June 2016, the TCE concentrations decreased to 210 µg/L. TCE concentrations have since remained stable as indicated by the September 2017 result (220 µg/L). Concentrations of cis-1,2-DCE have remained consistently below 3.0 µg/L since September 2013. PCE has been detected at low levels during only a few sampling events, with concentrations consistently below 1.0 µg/L since September 2009. Vinyl chloride has not been detected during any sampling event.

Figure 7 presents concentrations detected at RW1-MW1, including the most recent data collected in the Third Quarter 2017. The concentration of TCE in the Third Quarter 2017 (110 µg/L) was higher than initial concentrations observed in May 2005 (53.6 µg/L) but less than the highest concentration observed to date (175 µg/L in September 2013). The concentration of cis-1,2-DCE in the Third Quarter 2017 (9.8 µg/L) was below the initial concentration observed in May 2005 (78.6 µg/L), below the maximum concentration observed in May 2009 (180 µg/L), and the lowest concentration observed to date. Concentrations of PCE in the Third Quarter 2017 (0.59 J µg/L) has remained below 1.0 µg/L since initial concentrations observed in May 2005.

Figure 8 presents concentrations detected at RW1-MW3, including the most recent data collected in the Third Quarter 2017. Concentrations of cis-1,2-DCE and PCE in the Third Quarter 2017 have consistently remained below 1.0 µg/L with concentrations of 0.37 µg/L and 0.20 µg/L respectively. Concentrations of TCE in the Third Quarter 2017 (2.8 µg/L) have also remained low, and ranged from 0.58 J µg/L in July 2010 to a maximum of 4.5 µg/L in March 2016.

Figure 9 presents concentrations detected at RW2-MW1, including the most recent data collected in the Third Quarter 2017. Concentrations of TCE in the Third Quarter 2017 (8.6 µg/L) were less than initial concentrations observed in May 2005 (37.6 µg/L) and also below the maximum TCE concentration observed in March 2016 (43.9 µg/L). The concentration of cis-1,2-DCE observed in the Third Quarter 2017 (2.6 µg/L) was above initial concentrations observed in May 2005 (non-detect), but below the maximum observed to date (15.3 µg/L in March 2016). PCE has not been detected during any sampling event.

Figure 10 presents concentrations detected at RW3-MW1, including the most recent data collected in the Third Quarter 2017. The concentration of TCE in the Third Quarter 2017 (22 µg/L) represents the lowest concentration observed to date at this location. Concentrations of cis-1,2-DCE have remained consistently below 1.0 µg/L and have not been detected since March 2015. Concentrations of PCE have remained consistently near or below 2.0 µg/L, with a concentration of 1.6 µg/L in the Third Quarter 2017.

Figure 11 presents concentrations detected at RW3-MW2, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (140 µg/L) was below initial concentrations observed in January 2010 (160 µg/L) and below the maximum concentration observed in April 2010 (211 µg/L). Concentrations of cis-1,2-DCE in the Third Quarter 2017 (1.3 µg/L) have consistently remained below 2.0 µg/L. PCE detection in the Third Quarter 2017 (0.43 J µg/L) has only been detected during a few sampling events, with concentrations ranging from 0.28 J µg/L in August 2012 to 0.66 J µg/L in March 2016.

Figure 12 presents concentrations detected at RW3-MW3, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (100 µg/L) represents the lowest concentration detected to date at this location. Concentrations of cis-1,2-DCE in the Third Quarter 2017 (0.76 J µg/L) have remained near or below 2.0 µg/L and PCE (0.44 J µg/L) has remained below 1.0 µg/L since concentrations were first observed in May 2005.

Figure 13 presents concentrations detected at RW3-MW4, including the most recent data collected in the Third Quarter 2017. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L), with a concentration of 5.4 µg/L observed in the Third Quarter 2017. PCE has only been detected during two sampling events: in September 2015 at a concentration of 0.31 J µg/L and March 2016 at a concentration of 0.46 J µg/L. Cis-1,2-DCE has been detected during the initial sampling event in January 2010 (0.46 µg/L) and during the most recent Third Quarter 2017 event (0.21 µg/L).

Figure 14 presents concentrations detected at TP-01, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (54 µg/L) was less than initial concentrations observed in January 2010 (65 µg/L) and below the maximum concentration observed in March 2016 (62 µg/L). Concentrations of cis-1,2-DCE have generally decreased over time, from an initial value of 190 µg/L to 11 µg/L in the Third Quarter 2017. PCE concentrations have ranged from 6.0 µg/L in June 2012 to non-detectable levels in the Third Quarter 2017.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The intent of the groundwater treatment system at GM-38 is to remove mass and reduce elevated VOC concentrations to levels similar to those in the surrounding aquifer, and in doing so minimize the impacts on downgradient water supply wells and currently unaffected portions of the aquifer. Based on the removal of VOCs by the GWTP and decreasing contaminant concentration trends observed in the recovery wells and several of the monitoring wells, progress toward these goals is apparent. Based on the concentrations in the groundwater wells, the GWTP should continue to be operated. The groundwater sampling frequency for the eight monitoring wells has been reduced to semi-annually in accordance with the O&M Manual. Water levels for the 14 monitoring wells will continue to be monitored on a quarterly basis.

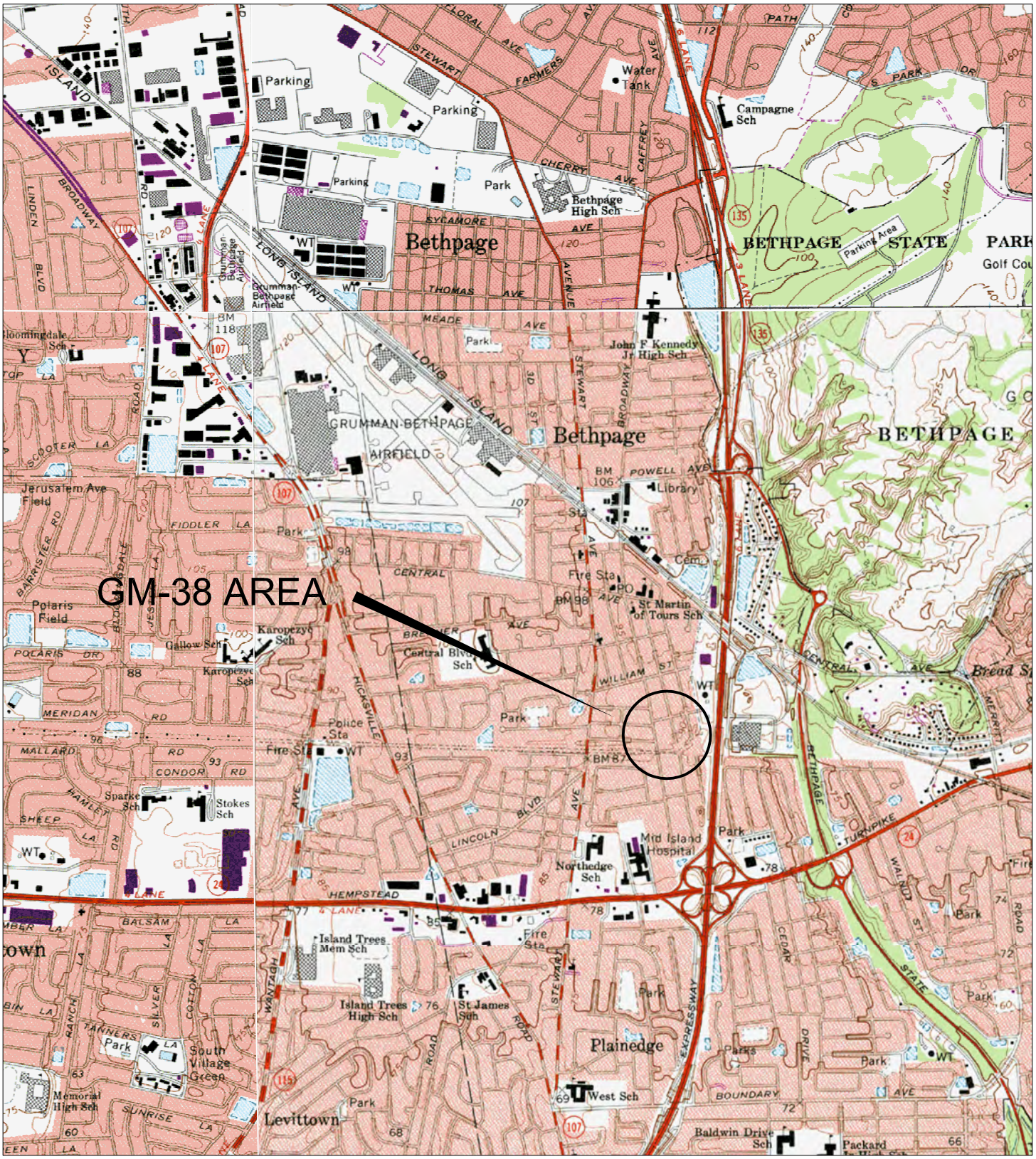
5.0 REFERENCES

Tetra Tech, Inc. (Tetra Tech). 2014. *Capture Zone Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* March.

Tetra Tech EC, Inc. (TtEC). 2010. *Final Operation, Maintenance & Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* April.

Tetra Tech EC, Inc. (TtEC). 2010a. *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), UFP-SAP for Operations, Maintenance, and Monitoring of the Groundwater Treatment Plant, GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* September.

FIGURES



Quadrangle Location Map

0 2000 4000 Feet

N

Source: U.S.G.S. Topographic Maps (7.5 Minute)
Amityville, Freeport, Hicksville, Huntington, NY Quadrangles

U.S. Navy RAC
Engineering Field Activity, Northeast

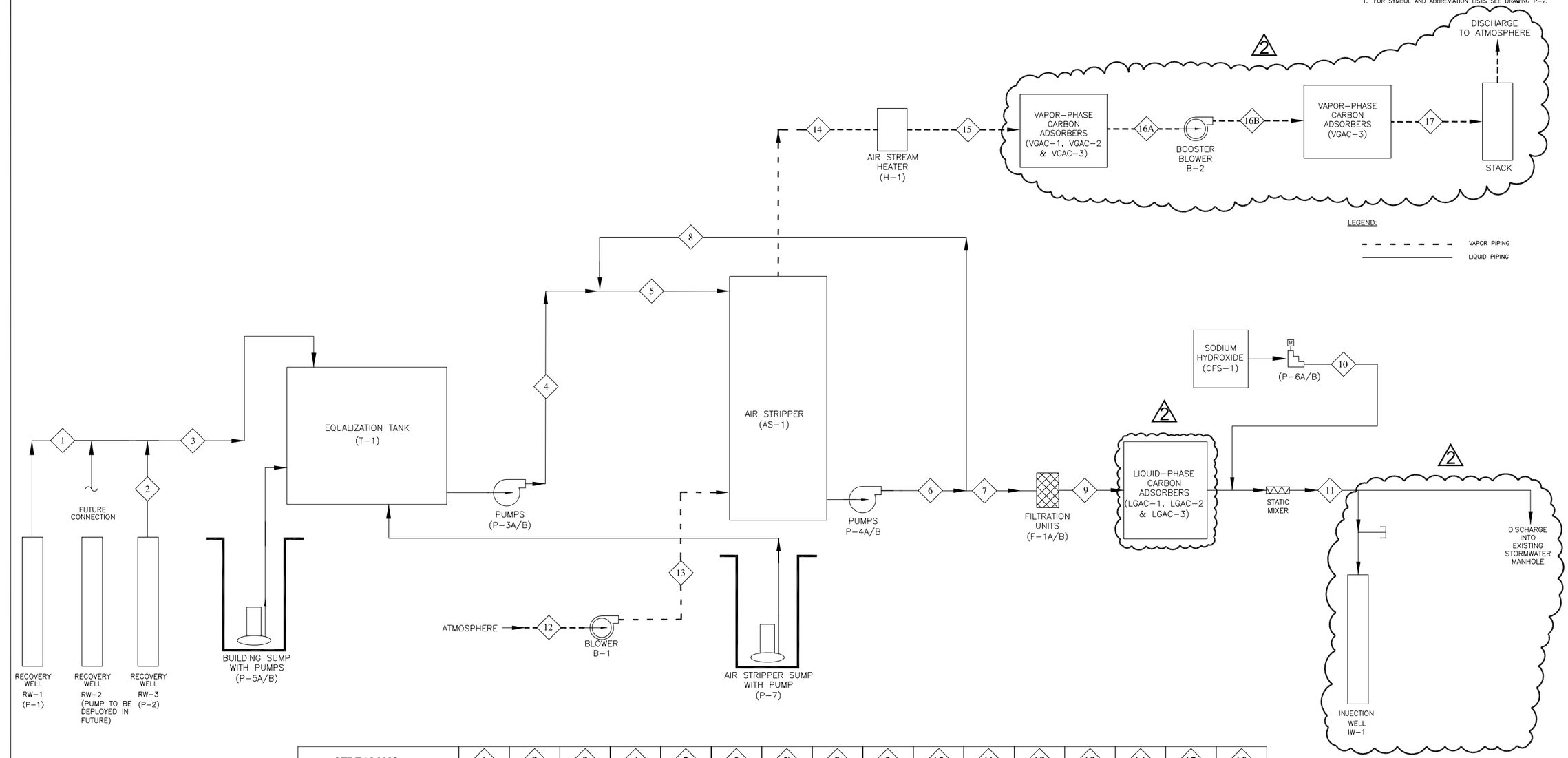
GM-38 Area (Offsite)
NWIRP Bethpage
Bethpage, NY

Figure 1
Site Location Map

P:\LantDiv\Bethpage\CAD - GIS\Dwg\O&M Manual\Site Location Map.dwg, 6/29/2009 3:33:52 PM

NOTES:

1. FOR SYMBOL AND ABBREVIATION LISTS SEE DRAWING P-2.



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COMPOSITION (UG/L, UNLESS OTHERWISE NOTED)																
BENZENE	4	4	4	4	3	-	-	-	-		-					
TOLUENE	15	15	15	15	12	-	-	-	-		-					
XYLENES, TOTAL	16	16	16	16	12	-	-	-	-		-					
1,2-DICHLOROETHANE	3	3	3	3	2.8						2.7^{E-07}					
cis 1,2-DICHLOROETHENE	1100	1100	1100	1100	1008	0.10	0.10	0.10	0.10		1.0^{E-04}					
VINYL CHLORIDE	300	300	300	300	275	0.03	0.03	0.03	0.03		2.7^{E-05}					
TETRACHLOROETHENE (PCE)	900	900	900	900	825	0.08	0.08	0.08	0.08		8.2^{E-05}					
TRICHLOROETHENE (TCE)	3400	3400	3400	3400	3117	3.12	3.12	3.12	3.12		3.1^{E-03}					
WATER FLOW RATE (GPM)	800	300	1100	1100	1200	1200	1100	100	1100	1.1 gpd	1100					
TEMPERATURE (°F)	55	55	55	55	55	55	55	55	55	60	55					
PRESSURE (PSIG)												-0.27	1.50	1.36	1.18	0.53
DENSITY (lb/ft^3)										95.5		0.077	0.085	0.084	0.082	0.079
MASS FLOW RATE (lb/hr)	400364	150136	550500	550500	600545	600545	550500	50,045	550500	0.59	550500	36,960	40,800	40,320	39,360	37,920
RELATIVE HUMIDITY (%)												50	50	100	50	50
STATIC PRESSURE (PSIA)												0.214	0.214	0.214	0.275	0.275
pH (S.U.)	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	14	7.0					
VAPOR FLOW RATE (CFM)												8000	8000	8000	8000	8000
TOTAL VAPOR VOC (PPMV)												-	-	25.5	25.5	1.2
TOTAL VAPOR VOC (LBS/HR)												-	-	3.18	3.18	0.15

TETRA TECH ENGINEERING CORPORATION PC

REV	DESCRIPTION	PREP BY	DATE	APPRVD
0	FINAL DESIGN	DL	05/05/06	BKB
1	ADDED RECOVERY WELL RW-3 CHANGED RW-2 TO FUTURE CONNECTION	DLB	03/31/08	BKB
2	REVISED BASED ON VENDOR SUBMITTALS. DRAWING UPDATES FOR CONSTRUCTION	DLB	02/24/09	BKB

DSGN: DR: CHK: CH ENG: SUBMITTED BY: (TRM NUMBER) (TITLE) (DATE) NORTHDIV DIV. HO: HO: DIR: FPC: OFFICER IN CHARGE DATE APPROVED

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY - NORTHEAST — PENNSYLVANIA
LESTER — NAVAL WEAPONS INDUSTRIAL RESERVE PLANT — BETHPAGE, NEW YORK
GM-38 AREA
GROUNDWATER TREATMENT PLANT
PROCESS FLOW DIAGRAM - GROUNDWATER AND OFF-GAS TREATMENT
EFANE FOR COMMANDER, NAVFAC
DATE
APPROVED

THIS DRAWING PRODUCED ON AUTOCAD
DO NOT REVISE MANUALLY

SAT TO DATE 05/05/06
CODE I.D. NO. 80091
SCALE : AS SHOWN
SPEC. NO.
CONSTRN. CONTR. NO. N62472-99-D-0032
NAVFAC DRAWING NO. Figure 2
SHEET OF
SIZE: D
DIS. SH. NO. 1-4

Legend

- Monitoring Well (Monitored by Navy)
- Monitoring Well (Monitored by Northrop Grumman)
- Recovery Well
- Injection Well

SOPHIA STREET
NORTH WINDHORST
NORTH HERMAN AVENUE
LEROY AVENUE
ARTHUR AVENUE
MAIN STREET (BROADWAY)
SOUTH WINDHORST
SOUTH HERMAN AVENUE
WILSON LANE
(SEAFORD-OYSTER BAY EXPRESSWAY - RTE 135)

RW3-MW-4
RW3-MW-3
RW3-MW-1
RW3-MW-2
RW-3
GM-38D
GM-38D-2
RECHARGE BASIN
RW2-MW-1
RW2-MW-2
RW2-MW-3
RW-2
TP-1
GROUNDWATER TREATMENT PLANT
RW1-MW-3
RW1-MW-2
RW1-MW-1
RW-1
IW-1
IW1-MW-1

0 160
APPROXIMATE SCALE IN FEET

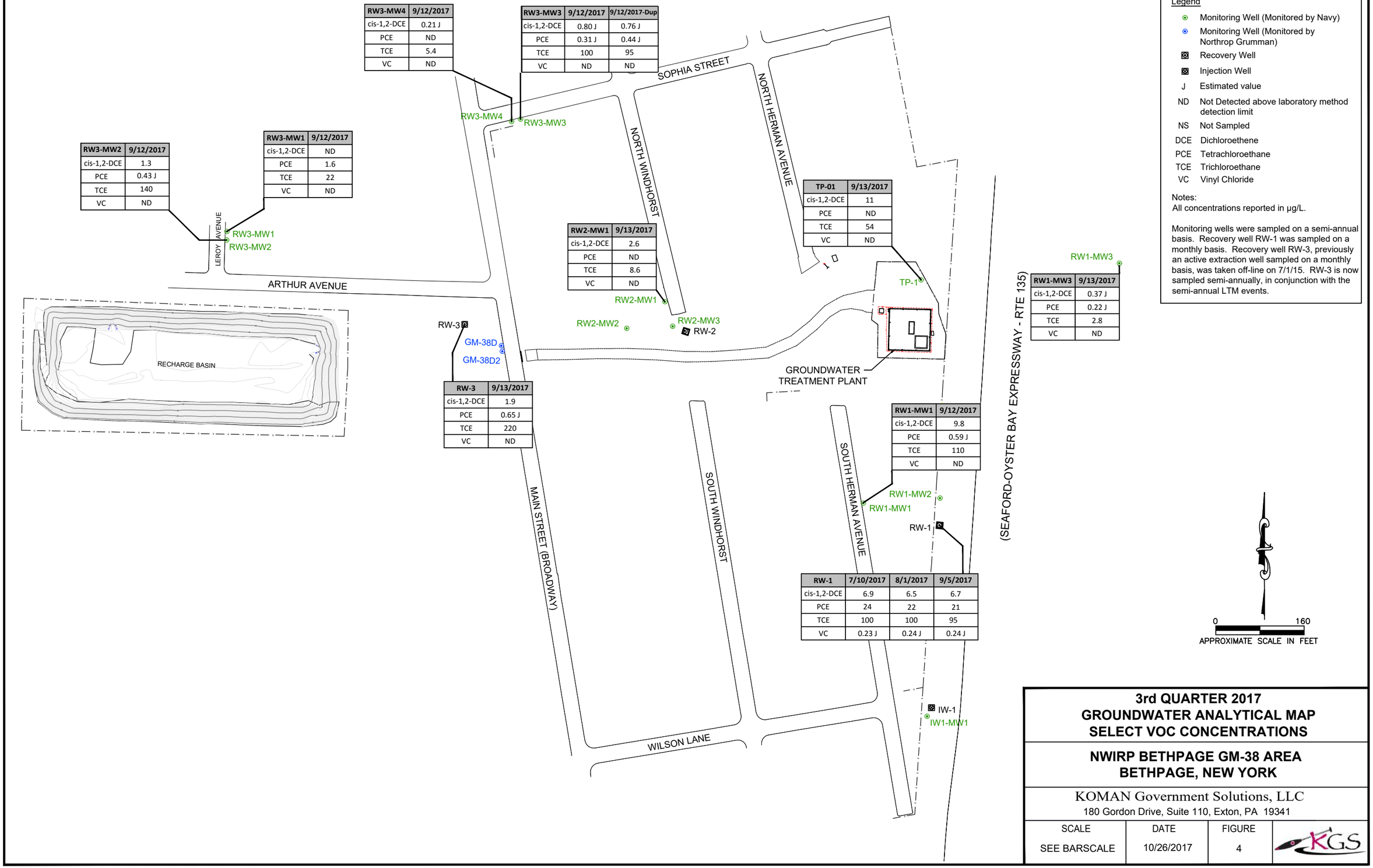
SITE MAP

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110, Exton, PA 19341

SCALE	DATE	FIGURE
SEE BARSCALE	10/26/2017	3

X:\HS_Environmental\Bethpage-GM38\As-Built-PM.dwg 4/26/2016



3rd QUARTER 2017
GROUNDWATER ANALYTICAL MAP
SELECT VOC CONCENTRATIONS

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110, Exton, PA 19341

SCALE	DATE	FIGURE
SEE BARSCALE	10/26/2017	4

X:\HS_Environmental\Bethpage-GM38\2016\3rdQ2016-GW-VOC.dwg 1/23/2017

Figure 5
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW1

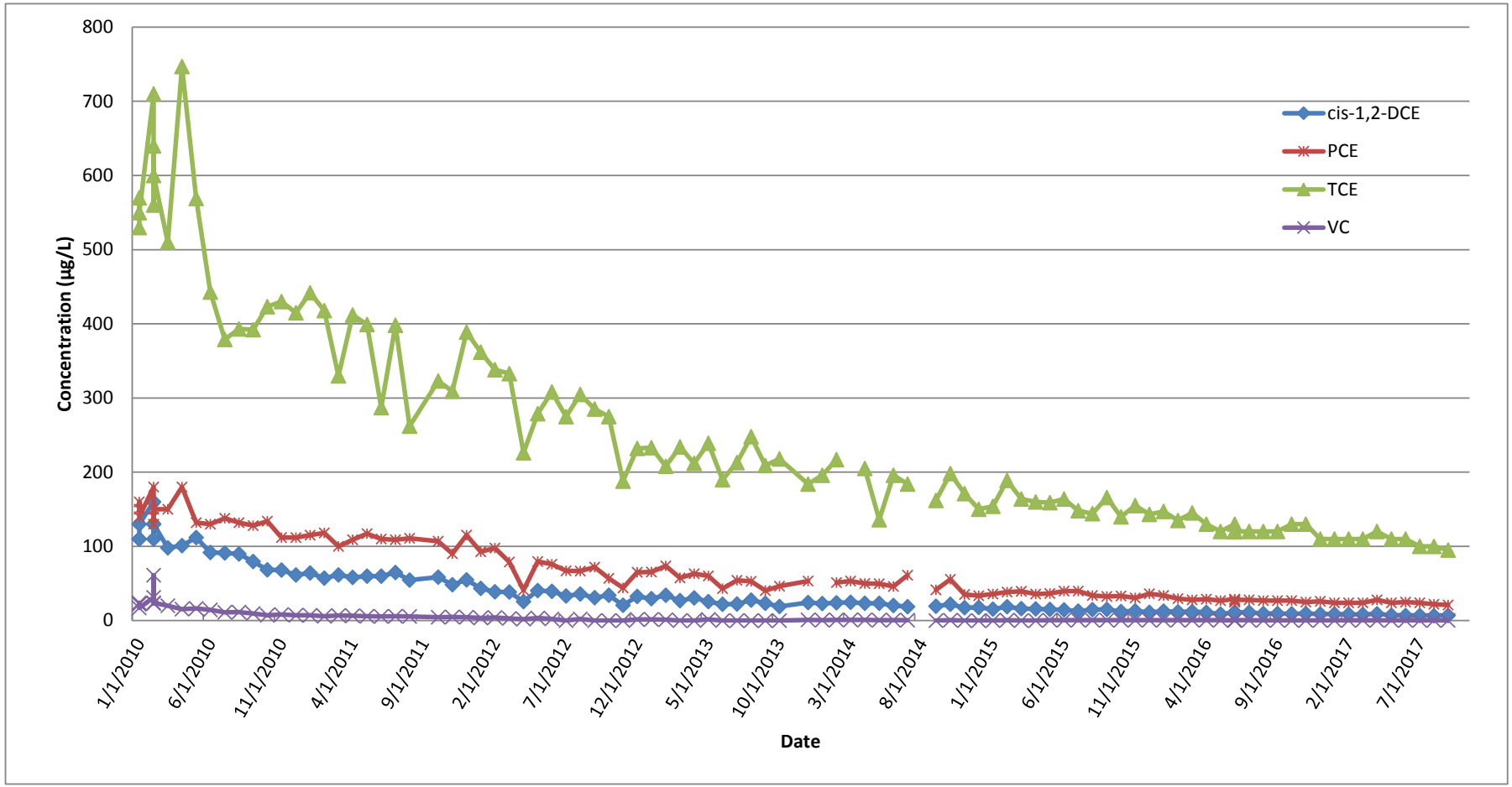


Figure 6
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

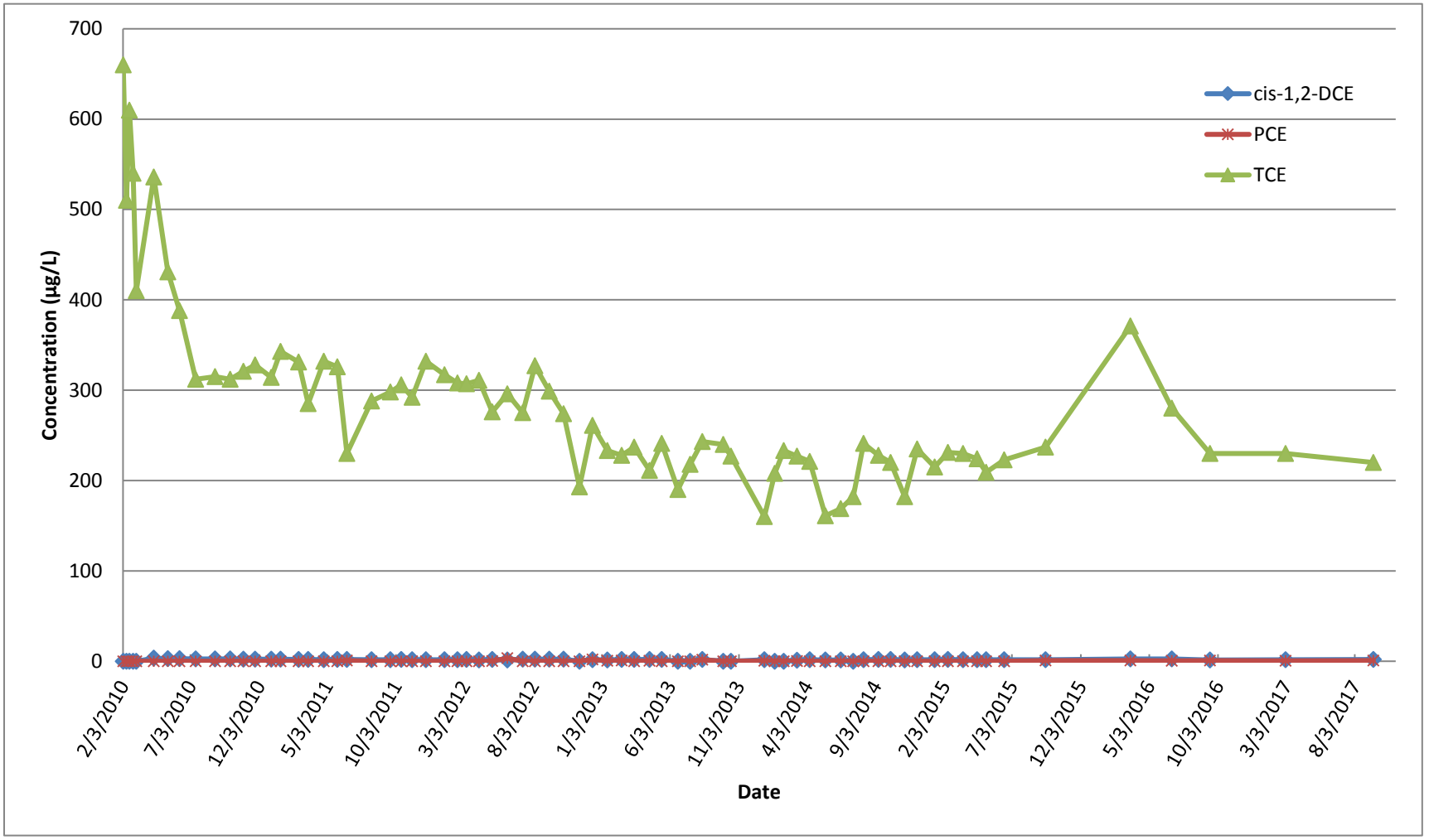


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW1

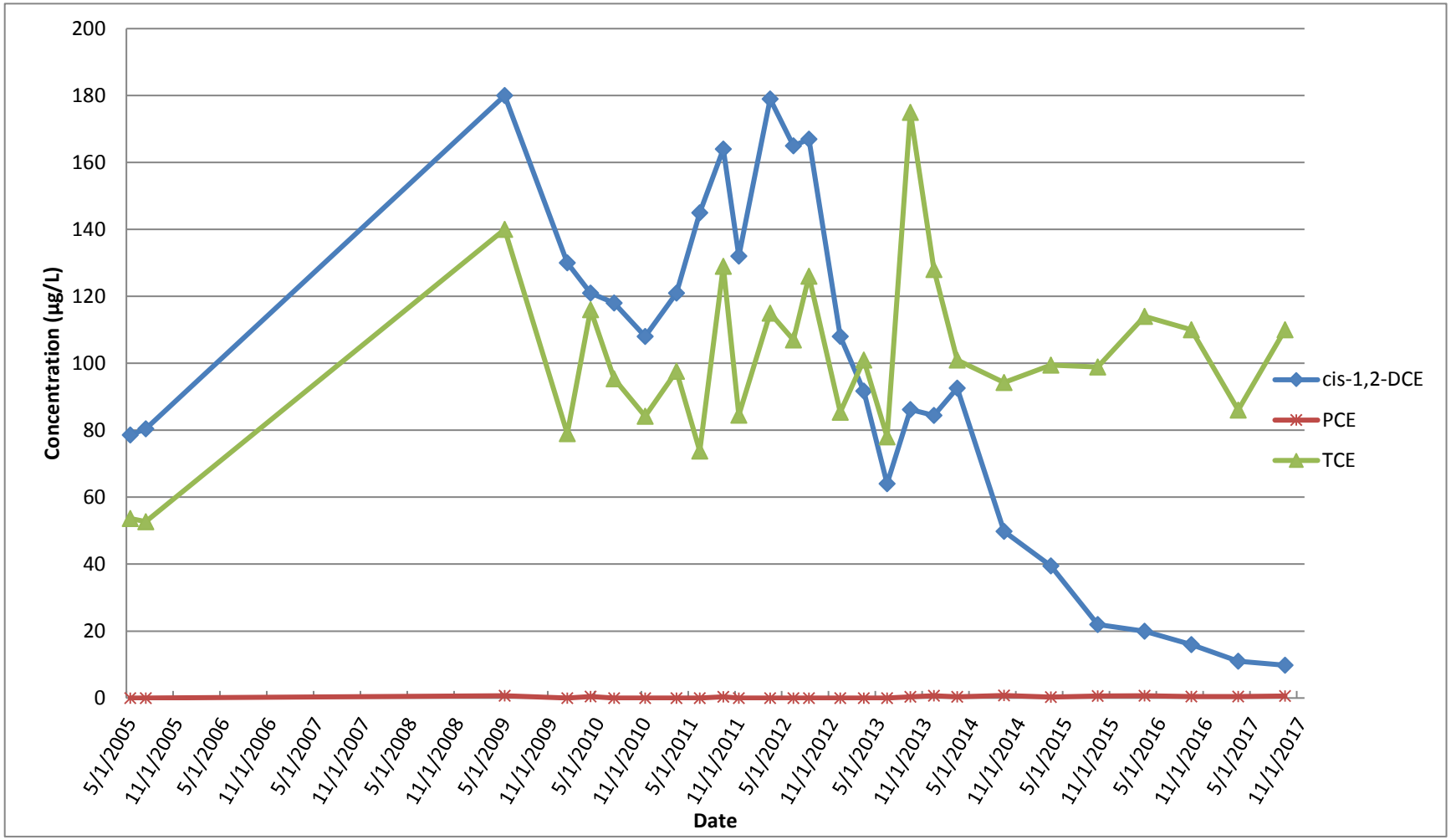


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW3

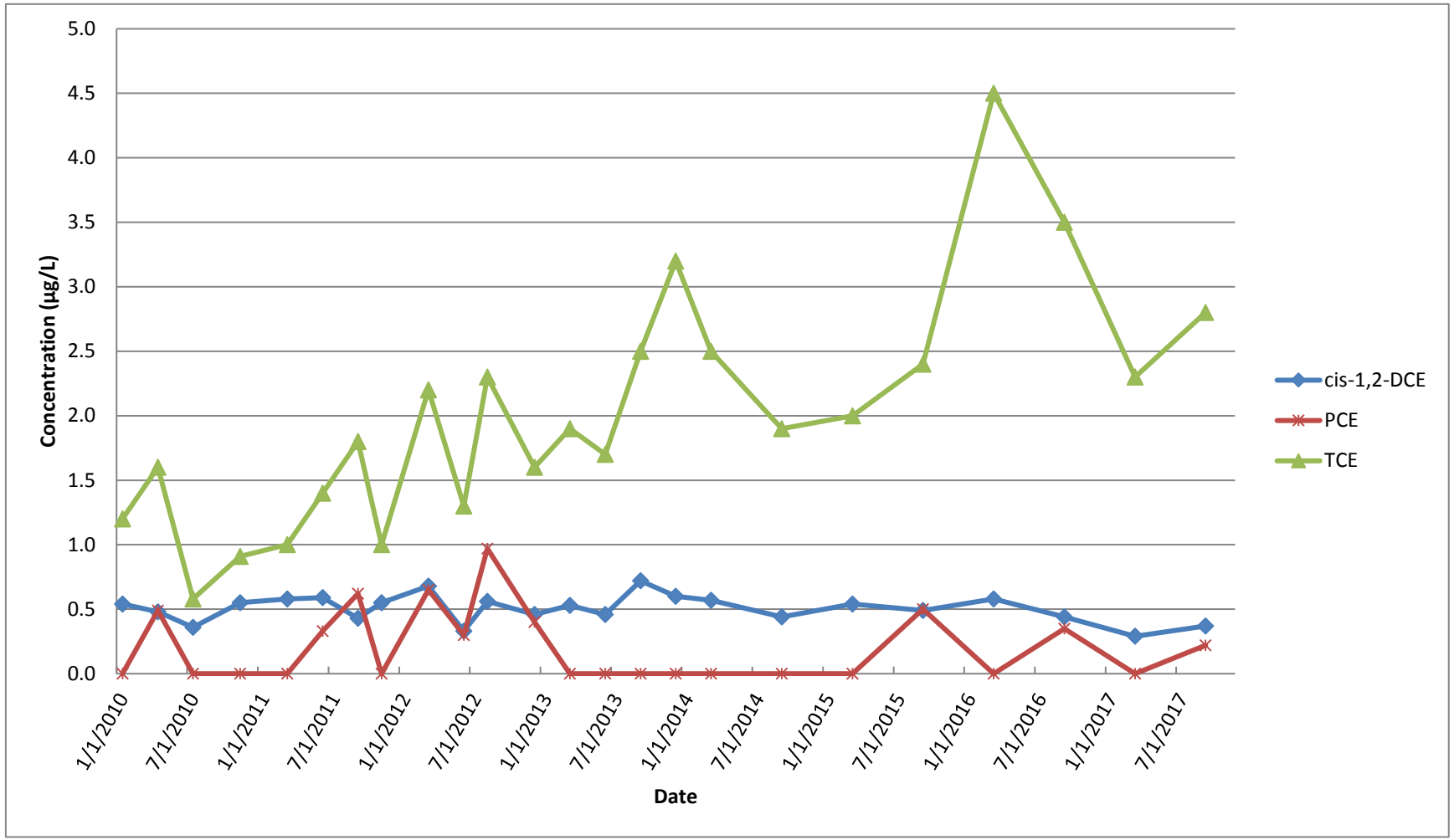


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW2-MW1

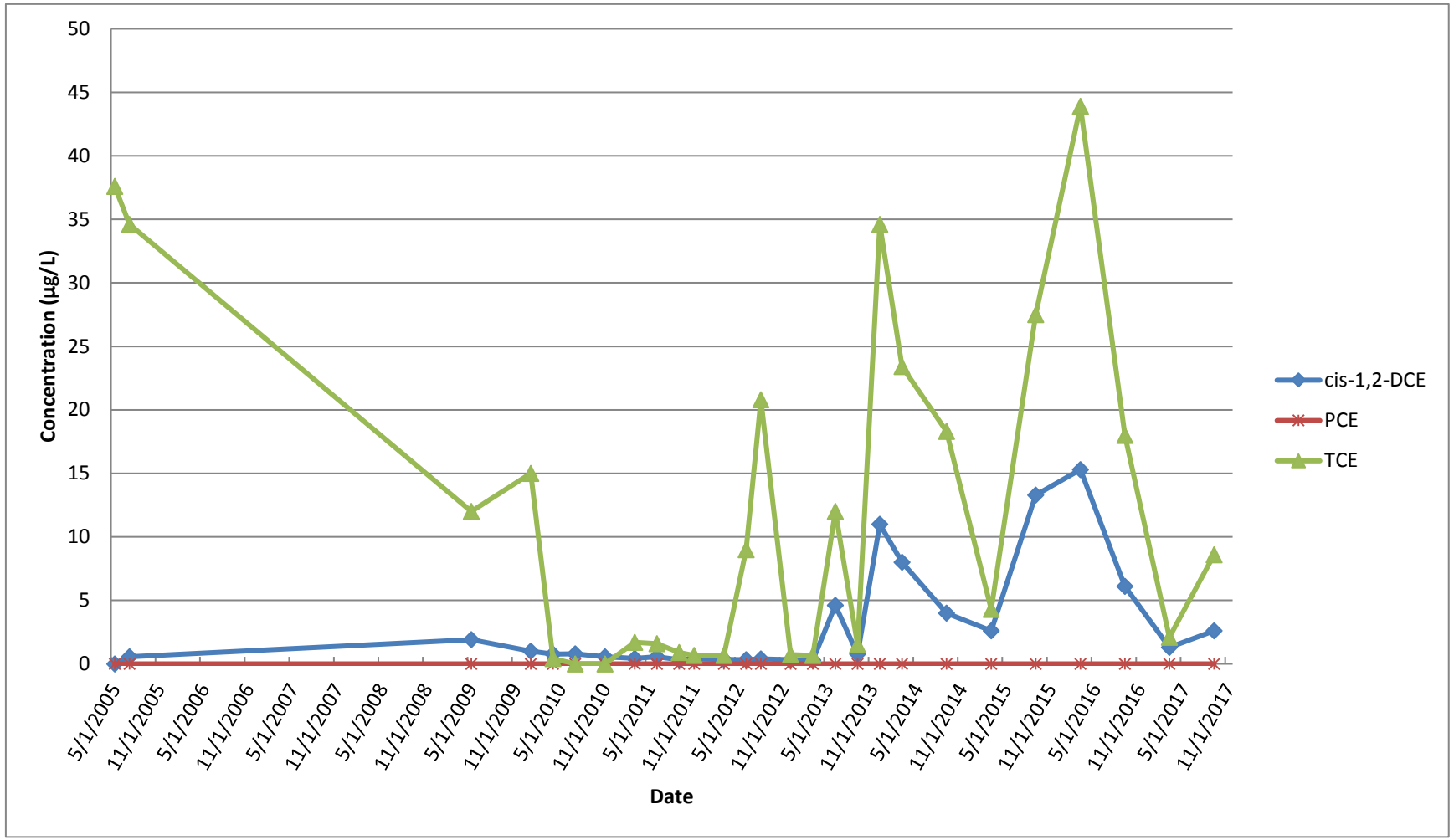


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW1

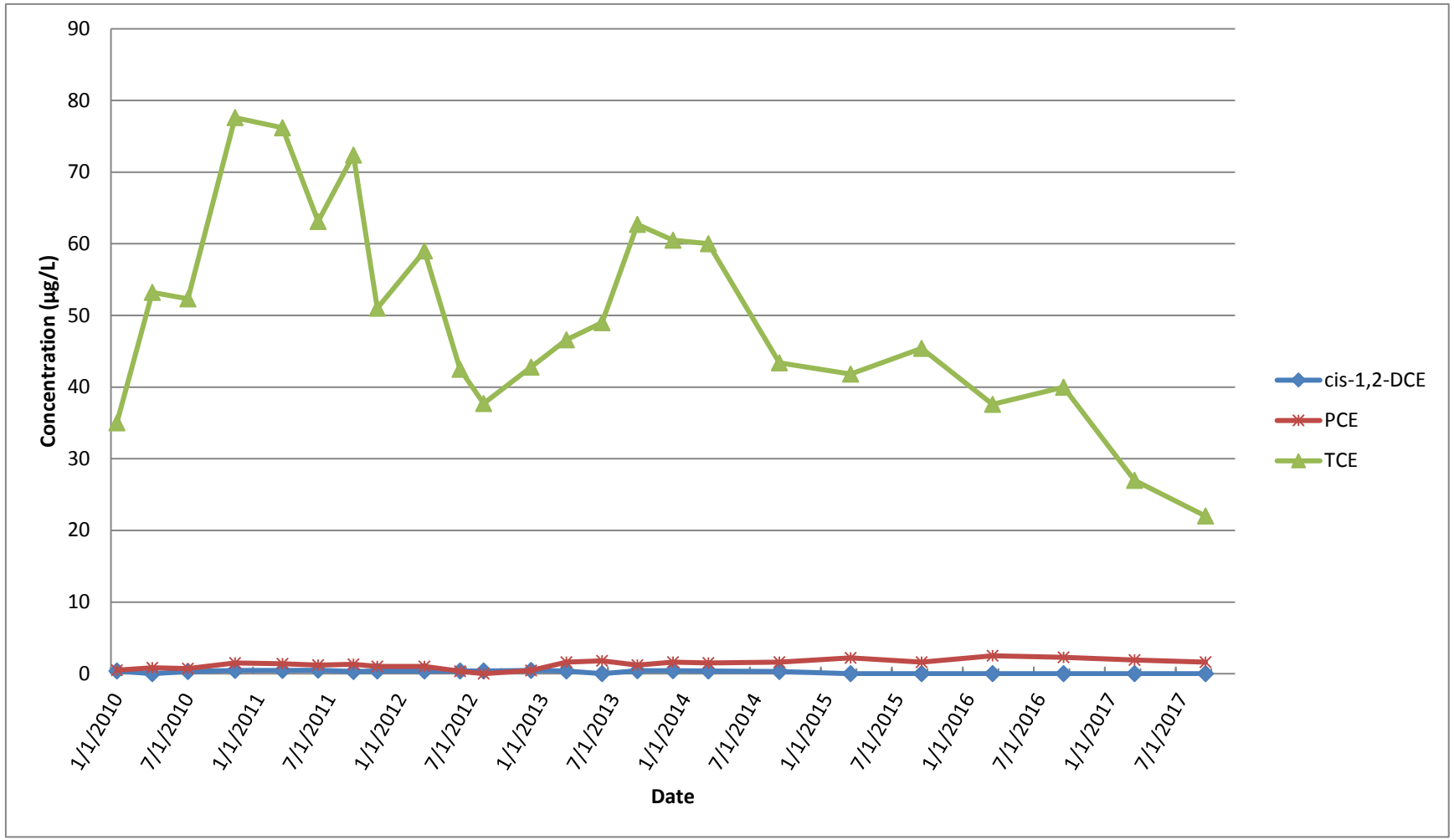


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW2

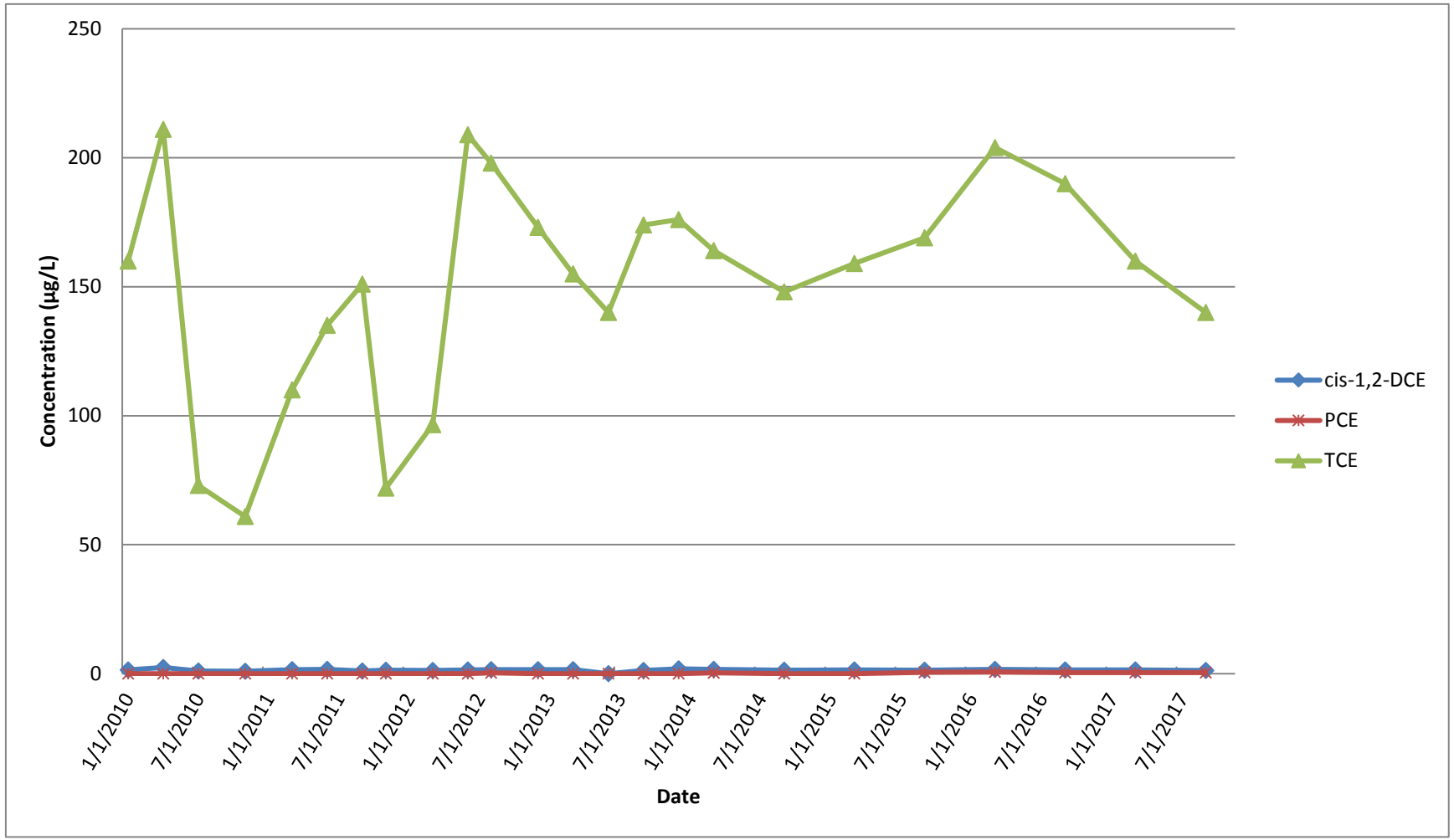


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW3

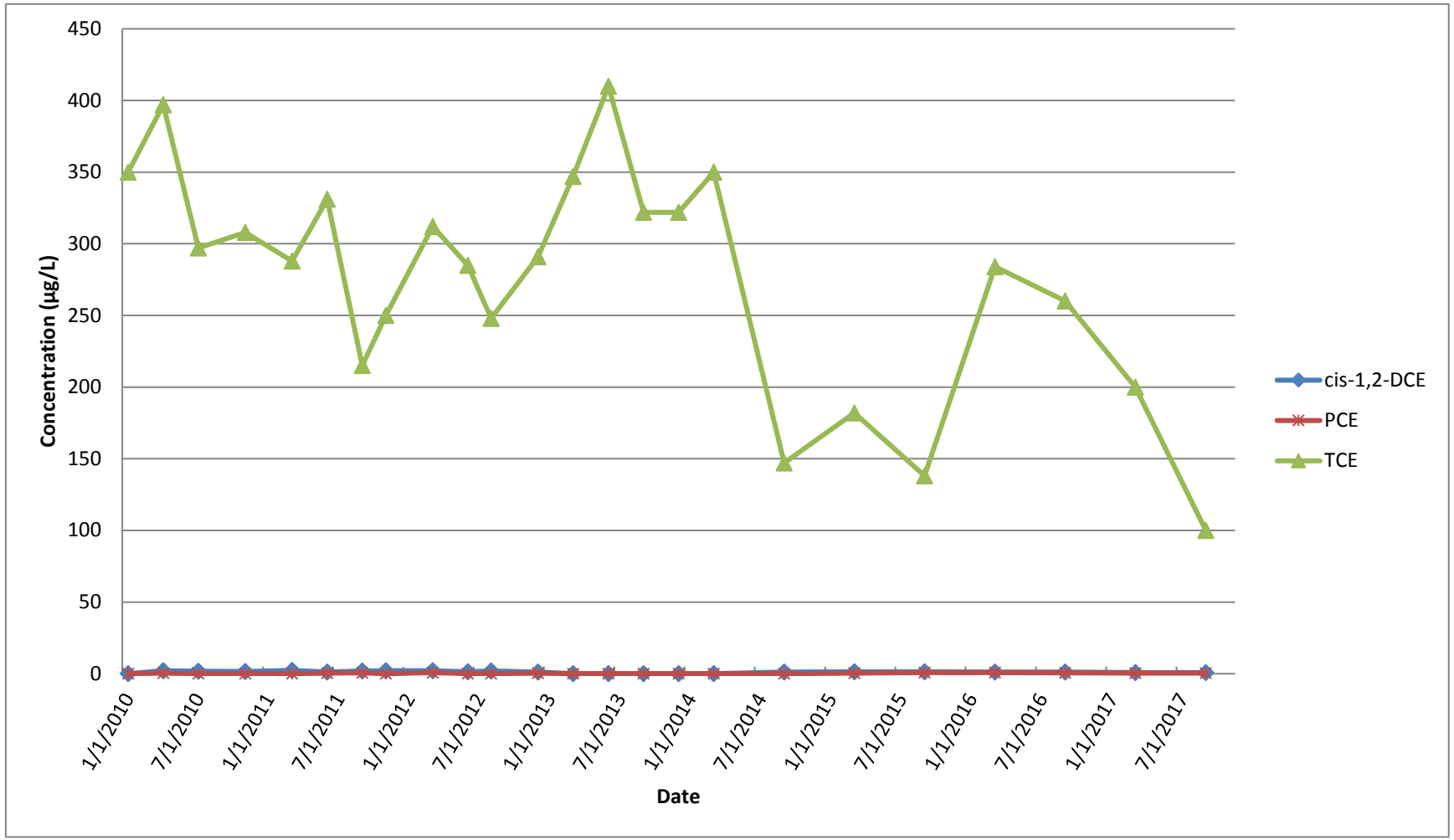


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW4

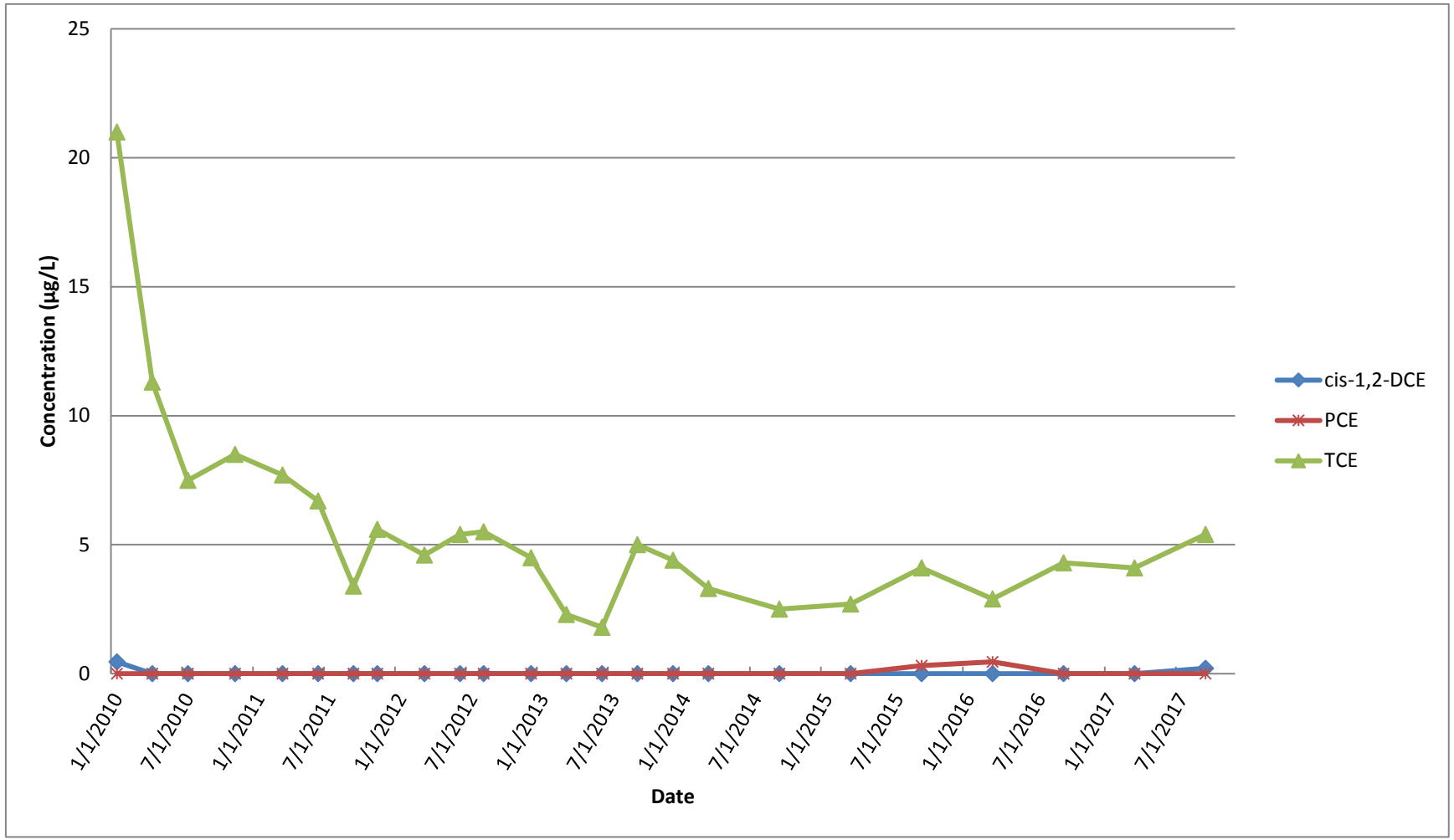
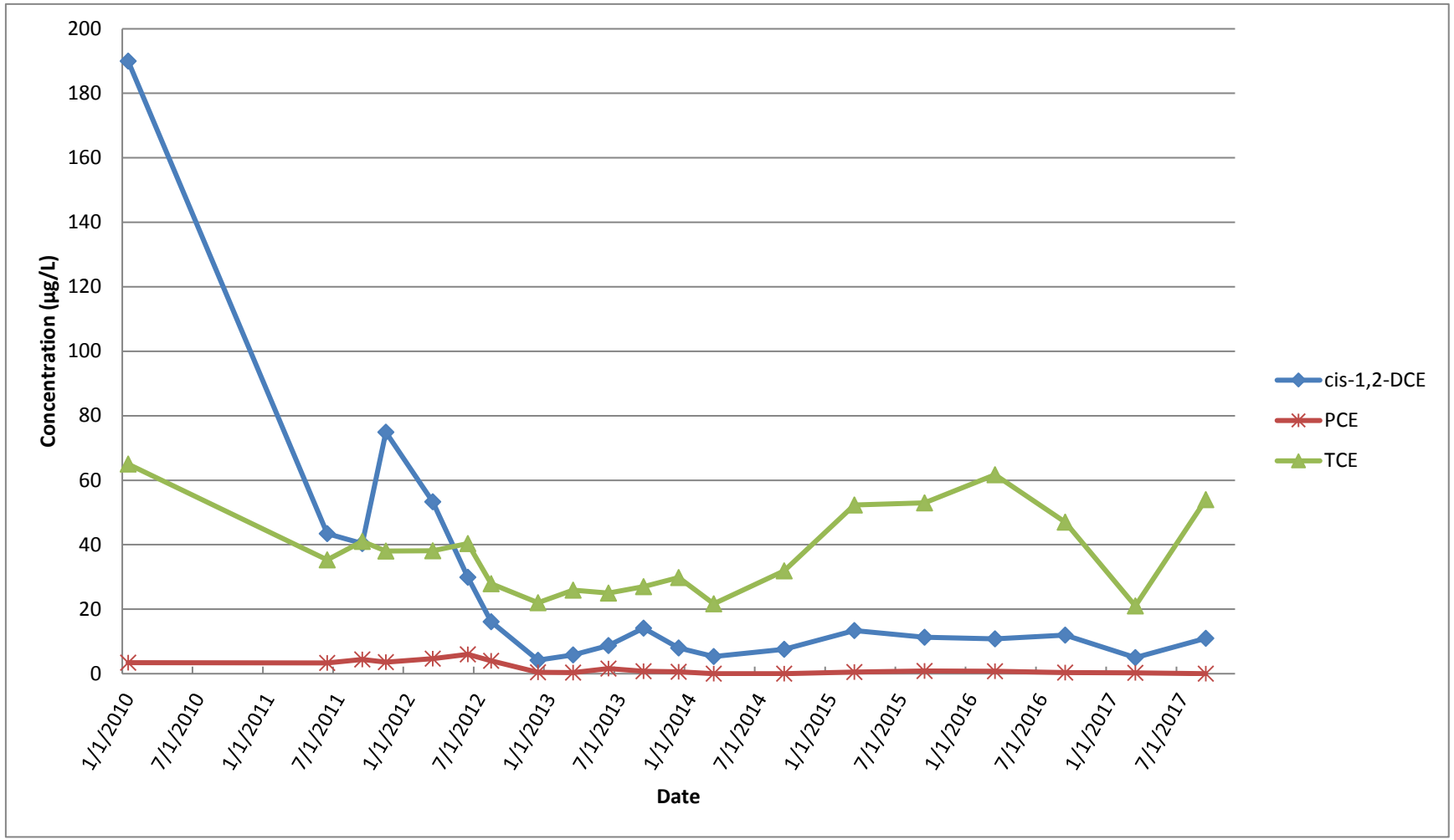


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

TP-01



TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	July 2017									
Process Stream			RW-1 [2]	RW-3	Combined Influent	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			7/10/17									
Average Flowrate	1100	GPM	989	0	989	NR	976	NR	NR	NR	1,017	NR
Total Flow		gallons	43,594,500	0	43,594,500	NR	43,510,600	NR	NR	NR	44,852,800	NR
pH	5.5 - 8.5	SU	5.10	NS	5.10	6.04	6.08	6.12	6.13	6.14	6.14	6.15
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.5	NS	1.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.42 J	NS	0.42 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.9	NS	6.9	0.22 J	0.31 J	ND (1.0)	0.21 J	0.24 J	0.29 J	0.23 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	24	NS	24	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.96 J	NS	1.0	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	1.6	1.4	0.41 J	0.49 J	0.32 J	0.44 J	0.55 J
Vinyl Chloride	2	µg/L	0.23 J	NS	0.20 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	8.9	ND (1.0)	5.1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	August 2017									
Process Stream			RW-1 [2]	RW-3	Combined Influent	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			8/1/17									
Average Flowrate	1100	GPM	953	0	953	NR	955	NR	NR	NR	996	NR
Total Flow		gallons	42,554,700	0	42,554,700	NR	42,610,900	NR	NR	NR	43,929,000	NR
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.06	6.09	6.15	6.14	6.14	6.14	6.15
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.6	NS	1.6	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.25 J	NS	0.25 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	0.20 J
1,1-Dichloroethene	5	µg/L	1.5	NS	1.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.5	NS	6.5	ND (1.0)	0.28 J	ND (1.0)	0.20 J	0.24 J	0.28 J	0.27 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	22	NS	22	ND (1.0)	0.26 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.84 J	NS	0.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	1.6	1.4	0.39 J	0.61 J	0.51 J	0.45 J	0.46 J
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	September 2017									
Process Stream			RW-1 [2]	RW-3 [3]	Combined Influent [3]	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			9/5/17									
Average Flowrate	1100	GPM	956	1.3	958	NR	959	NR	NR	NR	986	NR
Total Flow		gallons	41,931,346	57,900	41,989,246	NR	42,042,570	NR	NR	NR	43,226,363	NR
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.07	6.11	6.13	6.13	6.15	6.17	6.15
Chloroform	5	µg/L	0.38 J	NS	0.38 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.9	NS	1.90	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.1	NS	1.10	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.7	NS	6.70	0.40 J	0.32 J	0.25 J	0.30 J	0.27 J	0.33 J	0.32 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	21	NS	21.00	0.22 J	0.25 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.98 J	NS	0.98 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	95	NS	95.00	1.7	1.6	0.47 J	0.54 J	0.42 J	0.69 J	0.45 J
Trichlorofluoroethane	5	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	8.9	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Notes:
B - Method blank contamination
J - Estimated result between laboratory method detection limit and reporting limit
NA - Not Applicable
NS - Not Sampled. RW-3 sampling frequency has been reduced from monthly to semi-annually.
ND - Not detected above laboratory method detection limit. Limit of detection (LOD) given in parentheses.
NS - Not Sampled
gpm - gallons per minute

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and trichlorofluoroethane are now monitored under the new permit.
(2) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.
(3) Well RW-3 was turned on for a total of approximately 3 hours this period to collect the Semi-Annual groundwater samples.

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Third Quarter 2017

DAR Parameters	Discharge Goal [3]	Units	July 2017					August 2017				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VCI1)	VC12	VC23 [5]	Effluent	Effluent Duplicate
Sampling Date			7/10/17					8/1/17				
Average Flowrate		CFM	NA	NA	NA	7,612	NA	NA	NA	NA	7,408	NA
Total Flow [1]		ft^3	NA	NA	NA	339,817,536	NA	NA	NA	NA	330,700,560	NA
Total Flow [2]		m^3	NA	NA	NA	9,622,561	NA	NA	NA	NA	9,364,397	NA
1,2-Dichloroethane	NA	$\mu g/m^3$	3.4 J	6.6 J	1.6 J	1.60 J	1.40 J	4.1 J	2.1 J	2.0 J	2.0 J	0.74 J
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	130	240	220	160	170	110	73	220	150	56
trans 1,2-Dichloroethene		$\mu g/m^3$	2.5 J	6.0 J	3.1	2.4 J	2.1 J	1.9 J	1.9 J	3.9	2.0 J	1.4 J
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	130	250	220	160	170	110	75	230	160	57
Toluene	NA	$\mu g/m^3$	2.20 J	4.80 J	0.54 J	ND	ND	2.1 J	1.5 J	0.32 J	ND	8.5
Xylene	NA	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	1600	5200	78.0	7	2.2 J	1700	1800	25	11	1000.00
Vinyl Chloride	560	$\mu g/m^3$	3.9	3.0 J	6.7	4.6	4.8	3.3	2.6 J	3.1	2.0	4.4
Tetrachloroethene	5,100	$\mu g/m^3$	350	250	25.0	2.6 J	ND J	320	82	7.2	3.9 J	290

Notes:
NA - Not applicable
ND - Not detected
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal as concurred by NYSDEC's letter dated 31 October 2013.
(4) Discharge goal is for total 1,2-Dichloroethene.

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Third Quarter 2017

DAR Parameters	Discharge Goal [3]	Units	September 2017				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			9/5/17				
Average Flowrate		CFM	NA	NA	NA	7,876	NA
Total Flow [1]		ft^3	NA	NA	NA	340,236,000	NA
Total Flow [2]		m^3	NA	NA	NA	9,634,411	NA
1,2-Dichloroethane	NA	$\mu g/m^3$	4.2 J	2.0 J	3.1	2.8 J	2.9 J
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	100	110	200	150	140
trans 1,2-Dichloroethene		$\mu g/m^3$	ND	ND	3.2	1.7 J	1.6 J
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	100	110	200	150	140
Toluene	NA	$\mu g/m^3$	0.66 J	1.4 J	ND	ND	ND
Xylene	NA	$\mu g/m^3$	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	1.5 J	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	1700	1800	6.8	7.0	2.2 J
Vinyl Chloride	560	$\mu g/m^3$	2.9 J	2.5 J	2.8	2.0	2.0
Tetrachloroethene	5,100	$\mu g/m^3$	380	88	4.1 J	3.9 J	1.0 J

Notes:
NA - Not applicable
ND - Not detected
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal as concurred by NYSDEC's letter dated 31 October 2013.
(4) Discharge goal is for total 1,2-Dichloroethene.

Table 3
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Stack Emissions
Third Quarter 2017

DAR Parameters	Discharge Goal (1)	Units	July 2017	August 2017	September 2017
Sampling Date			7/10/17	8/1/17	9/5/17
Average Flowrate		CFM	7,612	7,408	7,876
Total Flow		ft^3	339,817,536	330,700,560	340,236,000
Total Flow		m^3	9,622,561	9,364,397	9,634,411
Trichloroethene	0.09	lb/hr	0.00020	0.00031	0.00021
Vinyl Chloride	0.02	lb/hr	0.00013	0.00006	0.00006
1,2 Dichloroethene	11	lb/hr	0.00456	0.00444	0.00443
1,2-Dichloroethane	NA	lb/hr	0.00005	0.00006	0.00008
Toluene	NA	lb/hr	0.00000	0.00000	0.00000
Xylene	NA	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	0.18	lb/hr	0.00007	0.00011	0.00012

Notes:
NA - Not applicable
lb/hr - pounds per hour
DAR - Divison of Air Resources
CFM - Cubic feet per minute
Stack Emissions (lb/hr) = average flowrate (cfm) * ($0.3048^{\wedge 3}$)m^3/ft^3 * conc.(ug/m^3) * 1 lb/453592370 ug * 60 min/hr

(1) Discharge goal as concurred by NYSDEC's letter dated 31 October 2013.

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
Third Quarter 2017

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	09/12/17	85.86	435	395-435	40.53	45.33
RW1-MW2	09/12/17	87.35	435	395-435	43.87	43.48
RW1-MW3	09/12/17	80.34	435	395-435	33.72	46.62
RW2-MW1	09/12/17	90.75	510	470-510	43.33	47.42
RW2-MW2	09/12/17	90.15	510	470-510	43.27	46.88
RW2-MW3	09/12/17	89.75	510	470-510	42.95	46.80
RW3-MW1	09/12/17	92.22	350	330-350	41.23	50.99
RW3-MW2	09/12/17	91.98	495	475-495	42.85	49.13
RW3-MW3	09/12/17	92.98	340	320-340	42.30	50.68
RW3-MW4	09/12/17	92.92	495	475-495	43.19	49.73
TP-01	09/12/17	85.91	470	450-470	39.05	46.86
IW1-MW1	09/12/17	89.41	150	20-150	39.80	49.61
GM38D	NA	91.37	340	320-340	NA	NA
GM382D	NA	91.57	495	475-495	NA	NA

Notes:
amsl - above mean sea level
ft - feet
NA - Not Available

Table 5
Summary of Final Groundwater Chemistry Data
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Groundwater Chemistry Results
Third Quarter 2017

Location	Temp (ºC)	pH (SU)	S.C. (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	16.00	4.50	172.0	0.22	199.80	0.41	Clear
RW1-MW3	14.73	5.08	173.0	0.32	27.20	11.90	Clear
RW2-MW1	16.37	7.03	226.0	1.64	-53.50	3.19	Clear
RW3-MW1	19.70	4.49	137.0	6.05	90.40	12.10	Clear
RW3-MW2	15.90	4.79	96.5	0.00	199.70	1.95	Clear
RW3-MW3	18.99	4.83	133.0	1.47	20.60	11.20	Clear
RW3-MW4	15.40	4.87	134.6	0.02	198.70	2.74	Clear
TP-01	14.10	5.65	148.9	8.32	249.60	0.19	Clear

Notes:
S.C. = Specific Conductance
mS/cm = milliSiemens per centimeter
NTU = nephelometric turbidity units
mg/L = milligrams per liter
ºC = degrees celsius
mV = millivolts
SU = standard units
ORP = oxidation/reduction potential

Table 6
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
Third Quarter 2017

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1	RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW3	RW3-MW4	TP-01	RW-3 (2)
Sample Date	9/12/2017	9/13/2017	9/13/2017	9/12/2017	9/12/2017	9/12/2017	9/12/2017	9/12/2017	9/13/2017	9/13/2017
Comments							Duplicate			
VOCS (EPA 624) ug/L (1)										
Chloroform	0.58 J	0.69 J	2	ND	0.24 J	0.35 J	0.27 J	0.21 J	6.3	0.28 J
1,1-dichloroethane	7.7	4.4	6.6	ND	0.36 J	2.5	2.2	2.6	1.3	1.5
1,2-dichloroethane	0.35 J	ND	0.71 J	ND	ND	ND	ND	ND	0.79 J	ND
1,1-dichloroethene	2.1	1.2	1.3	ND	0.26 J	1	0.78 J	0.41 J	0.36 J	1.4
cis-1,2-dichloroethene	9.8	0.37 J	2.6	ND	1.3	0.8 J	0.76 J	0.21 J	11	1.9
trans-1,2-dichloroethene	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.59 J	0.22 J	ND	1.6	0.43 J	0.31 J	0.44 J	ND	ND	0.65 J
1,1,1-trichloroethane	1	1.1	0.49 J	ND	0.26 J	0.46 J	0.38 J	0.26 J	0.29 J	0.83 J
1,1,2-trichloroethane	ND	0.35 J	ND	ND	0.26 J	ND	ND	ND	ND	0.45 J
Trichloroethene	110	2.8	8.6	22	140	100	95	5.4	54	220
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	ND	5.6	8.7	2.9	ND	2.5	1.9	1.3	ND	8.1

Notes:
J = estimated value
ND = Not detected above laboratory method detection limit
mg/L = milligrams per liter
µg/L = micrograms per liter

(1) Samples were analyzed for TCL VOCs (including tentatively identified compounds [TICs]). Only those VOCs detected are presented above.
(2) 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.

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 2017

Sample ID	RW1-MW1																													
Sample Date	**5/4/2005**	**7/22/2005**	**5/27/2009**	**1/21/2010**	**4/21/2010**	**7/28/2010**	**11/10/2010**	**3/25/2011**	**6/14/2011[1]**	**6/14/2011**	**9/28/2011**	**11/30/2011**	**3/8/2012**	**6/6/2012**	**6/6/2012**	**8/21/2012**	**12/4/2012**	**3/13/2013**	**6/19/2013[2]**	**9/17/2013**	**12/16/2013**	**3/24/2014**	**3/24/2014**	**9/22/2014**	**3/25/2015**	**9/15/2015**	**3/22/2016**	**9/14/2016**	**3/1/2017**	**9/12/2017**
Comments										**Duplicate**					**Duplicate**								**Duplicate**							
Well Depth (Ft)	**435**																													
Screened Interval (Ft)	**395-435**																													
VOCS (EPA 624) ug/L [4]																														
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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	NR	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	NR	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	ND	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
Carbon tetrachloride	ND	ND	0.32J	ND	ND	ND	0.17J	ND	NR	NR	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	NR	NR	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	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	2.0 R	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	0.7J	1.1	ND	0.70J	0.65J	0.56J	0.55J	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.39 J	ND	ND	0.48 J	0.48 J	0.50 J	0.58 J
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.74J	0.79J	3.3	2.9J	2.8	2.8	3.0	3.6	1.6 J	4.2 J	4.0 J	4.1	5.2	4.8	4.3	5.3	4.9	5.3	4.8 J	4.7 J	5.2	5.3	5.3	4.1 J	5.1	5.1	6.5	7.0	6.6	7.7
1,2-dichloroethane	ND	ND	0.29J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J
1,1-dichloroethene	1.3	2.8	3.1	1.7J	1.9	1.7	1.7	1.9	0.85 J	2.1 J	2.3 J	2.1	2.7	2.5	2.3	2.8	2.0	2.8	ND	2.5	2.6	2.8	2.7	2.2 J	2.2 J	1.9	2.2	1.8	1.6	2.1
cis-1,2-dichloroethene	78.6	80.4	180D	130	121	118	108	121	55.8 J	145 J	164	132	179	165	145	167	108	91.7	64	86.2 J	84.4	92.6 J	94.2	49.8	39.5	22.0	20.0	16	11	9.8
trans-1,2-dichloroethene	2.0	1.3J	2.8	4J	2.9	2.1	1.3	4.2	0.71 J	2.0 J	2.0 J	1.7	3.0	3.7	2.6	2.4	1.8	1.7	ND	ND	1.4	1.4	1.4	1.0	0.79 J	0.50 J	0.51 J	0.42 J	0.26 J	0.35 J
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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	NR	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	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	1.75J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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	ND	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
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
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	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
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	NR	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	0.72J	ND	0.42J	ND	ND	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.67 J	0.33 J	0.37 J	0.76 J	0.30 J	0.62 J	0.67 J	0.45 J	0.46 J	0.59 J
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	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	0.71J	ND	0.52J	0.43J	0.53J	0.79J	ND	0.63 J	1.1 J	0.66 J	0.96 J	0.98 J	0.89 J	0.99 J	0.88 J	1.1	ND	1.2	1.5	ND	ND	ND	ND	ND	ND	1.0	0.94 J	1
1,1,2-trichloroethane	ND	ND	0.58J	NR	ND	ND	ND	ND	NR	NR	ND	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	53.6	52.7	140.0	79.0	116	95.4	84.2	97.6	26.6 J	73.8 J	129	84.5	115	107	102	126	85	101	78	175	128	101	103	94.3	99.5	98.9	114	110	86	110
m,p-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
o-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	1.6	ND	ND	ND	0.17J	ND	ND	0.38 J	0.29 J	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	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
Mercury (EPA 245.1) ug/L	NR	NR	ND	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
TSS (SM20 2540D) mg/L	NR	NR	2.8	2.8	6.0	4.0	4.0	4.0	ND	6	ND	11	16	9	5	6	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	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 2017

Sample ID	RW1-MW2				RW1-MW3																						
Sample Date	5/4/2005	7/22/2005	5/28/2009	6/18/2013[2]	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[2]	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
Comments																											
Well Depth (Ft)	435				435																						
Screened Interval (Ft)	395-435				395-435																						
VOCS (EPA 624) ug/L [4]																											
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	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
Bromodichloromethane	ND	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
Bromoform	ND	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
Bromomethane	ND	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
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	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	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J	ND	ND	ND
Chlorobenzene	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
Dibromochloromethane	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
Chloroform	ND	1.4	ND	ND	0.67J	0.80J	0.47J	0.69J	0.73J	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
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	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
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
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
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	4.6	5.5	3.4	3.9	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
1,2-dichloroethane	ND	ND	ND	ND	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
1,1-dichloroethene	3.2	12.3	ND	ND	0.42J	1.10	ND	0.28J	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
cis-1,2-dichloroethene	181.0	47.6	160.0	120	0.54J	0.48J	0.36J	0.55J	0.58J	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
trans-1,2-dichloroethene	2.5	7.6	2.5	1.9 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
1,2-dichloropropane	ND	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
cis-1,3-dichloropropene	ND	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
trans-1,3-dichloropropene	ND	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
1,4-dioxane	4.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	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	NR	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
Methylene chloride	1.0	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
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
4-methyl-2-pentanone	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	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
styrene	ND	ND	ND	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
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	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
1,2,4-trichlorobenzene	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
Tetrachloroethene	ND	134.0	19.0	5.9	ND	049J	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
Toluene	0.32J	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
1,1,1-trichloroethane	1.3	1.0	ND	ND	0.41J	0.98J	ND	0.26J	0.33J	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
1,1,2-trichloroethane	ND	0.65J	ND	ND	0.62J	0.60J	0.36J	0.55J	0.41J	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
Trichloroethene	158.0	198.0	200.0	64	1.2	1.6	0.58J	0.91J	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
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorofluoromethane	NR	NR	ND	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
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
o-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	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	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	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
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	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
TSS (SM20 2540D) mg/L	NR	NR	4.0	NR	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

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 2017

Sample ID	RW2-MW1																												RW2-MW2		
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[2]	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	5/4/2005	7/21/2005	6/17/2013[2]
Comments																				Duplicate						Duplicate						
Well Depth (Ft)	510																												510		
Screened Interval (Ft)	470-510																												470-510		
VOCS (EPA 624) ug/L [4]																															
Acrolein	NR	NR	NR	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	NR	NR	NR
Acrylonitrile	NR	NR	NR	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	NR	NR	NR
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND
Benzene	ND	ND	ND	ND	0.15J	0.69J	0.58J	0.30J	NR	0.22 J	0.27 J	0.22 J	ND	ND	0.68 J	0.54 J	ND	0.59 J	ND	ND	0.21 J	0.21 J	0.56 J	ND	ND	0.18 J	ND	0.51 J	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
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
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	R	ND
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	ND	ND	NR
Carbon tetrachloride	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	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0 J	1.6 J	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	NR	ND	NR	NR	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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	2.0 R	2.0 R	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	2.9	ND	ND	ND	2.8 J	1.5	0.46 J	2.2	3.4	3.5	2.4	0.25 J	2.0	ND	ND	0.55
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68 J	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	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	ND	ND	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	ND	ND	NR
1,2-dichlorobenzene	NR	NR	ND	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	NR	NR	NR
1,3-dichlorobenzene	NR	NR	ND	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	NR	NR	NR
1,4-dichlorobenzene	NR	NR	ND	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	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	NR
1,1-dichloroethane	0.53J	0.93J	1.20J	0.82J	0.60J	0.58J	0.42J	ND	0.61 J	0.64 J	ND	0.50 J	4.2	4.8	0.58 J	0.52 J	7.0	ND	5.8	6.4	5.1	ND	2.1	6.3	8.7	8.5	6.4	1.7	6.6	ND	0.78J	4.9
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	1.9 J	1.7 J	1.3	0.69 J	0.41 J	1.4	1.4	1.3	0.93 J	ND	0.71 J	ND	ND	0.32 J
1,1-dichloroethene	ND	0.58J	0.55J	0.63J	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.95 J	0.19 J	ND	1.9	ND	2.6	2.6	1.8	1.3 J	0.61 J	2.6	3.7	3.4	1.6	0.27 J	1.3	ND	0.41J	0.72
cis-1,2-dichloroethene	ND	0.55J	1.9	1.0	0.78J	0.80J	0.55J	0.43J	0.56 J	0.32 J	0.39 J	0.34 J	0.32 J	0.39 J	0.33 J	0.29 J	7.7	0.77 J	11.0 J	11.1 J	8.0	4.0	2.6	13.3	15.3	15.0	6.1	1.3	2.6	0.33J	0.41J	4.6
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
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
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
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
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	ND	7.45J	NR	NR	NR
Ethylbenzene	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	NR	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND
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	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	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
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	NR
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND
methyl-tert-butyl-ether	NR	NR	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
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	ND	ND	ND	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
1,2,4-trichlorobenzene	NR	NR	ND	NR	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	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	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	0.24 J	0.29 J	0.19 J	ND	ND	0.27 J	ND	ND	0.31 J	ND	ND	ND	ND	0.26 J	ND	0.20 J	ND	ND	ND	ND	0.33J	0.53J	ND
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	0.84	ND	0.94 J	0.94 J	ND	0.39 J	ND	ND	ND	ND	0.56 J	ND	0.49 J	ND	ND	0.34 J
1,1,2-trichloroethane	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	ND	ND	D	ND	ND
Trichloroethene	37.6	34.6	12.0	15.0	0.42J	ND	ND	1.7	1.6	0.89 J	0.67 J	0.67 J	9.0	20.8	0.73 J	0.67 J	14	1.5	34.6	33.5	23.4	18.3	4.3	27.5	43.9	44.2	18	2.1	8.6	7.8	13.8	12.0
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorofluoromethane	NR	NR	ND	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	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
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	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	ND	ND	ND	ND
xylenes (total)	ND	1.4J	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	ND	ND	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.05J	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	NR	NR	NR	NR
TSS (SM20 2540D) mg/L	NR	NR	2260	NR	58	<4.0	<4.0	<4.0	181	5	36	6	25	12	10	ND	13	12	30	24	12	6	17	11	24	26	3.8	13.8	8.7	NR	NR	NR

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 2017

Sample ID	RW2-MW3				RW3-MW1																										
Sample Date	5/3/2005	7/20/2005	5/28/2009	6/18/2013[2]	1/19/2010	4/22/2010	7/29/2010	11/9/2010	3/25/2011	3/25/2011	6/14/2011	9/27/2011	11/30/2011	11/30/2011	3/7/2012	6/7/2012	8/22/2012	12/6/2012	3/14/2013	6/20/2013[2]	6/20/2013[2]	9/18/2013	12/17/2013	3/25/2014	9/23/2014	3/25/2015	9/15/2015	3/22/2016	9/14/2016	3/2/2017	9/12/2017
Comments										Duplicate				Duplicate							Duplicate										
Well Depth (Ft)	510				350																										
Screened Interval (Ft)	470-510				330-350																										
VOCS (EPA 624) ug/L [4]																															
Acrolein	NR	NR	30 R	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	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
Benzene	ND	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	ND	ND
Bromodichloromethane	ND	ND	ND	ND	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	NR
Bromoform	ND	ND	ND	ND	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
Bromomethane	ND	ND	ND	ND	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
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	NR	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	NR	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	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
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.20J	ND	ND	NR	ND	ND	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	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
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	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	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	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.68J	0.31J	1.4	7.4	1.6	1.5	1.7	1.4	1.3	1.3	1.1	1.0 J	0.96 J	0.93 J	0.90 J	0.80 J	0.87 J	0.98 J	1.2	ND	ND	1.2 J	1.2	1.1	0.69 J	0.64 J	0.76 J	0.40 J	0.33 J	ND	ND
1,2-dichloroethane	ND	ND	ND	ND	0.27J	ND	ND	ND	ND	ND	ND	0.57 J	ND	ND	0.43 J	ND	ND	0.50 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	0.42J	ND	1.2	1.3	1.2	1.2	1.2	1.1	0.85 J	0.65 J	0.64 J	0.66 J	0.47 J	0.19 J	0.54 J	0.65 J	0.68 J	ND	ND	0.57 J	0.69 J	0.74 J	0.43 J	0.42 J	0.41 J	0.29 J	0.21 J	ND	ND
cis-1,2-dichloroethene	0.40J	0.66J	2.3	ND	0.37J	ND	0.32J	0.45J	0.47J	0.45J	0.48 J	0.31 J	0.36 J	0.43 J	0.37 J	0.39 J	0.36 J	0.44 J	0.38 J	ND	ND	0.43 J	0.41 J	0.38 J	0.30 J	ND	ND	ND	ND	ND	ND
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
1,2-dichloropropane	ND	ND	ND	ND	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
cis-1,3-dichloropropene	ND	ND	ND	ND	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
trans-1,3-dichloropropene	ND	ND	ND	ND	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
1,4-dioxane	7.42J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	ND	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	NR	NR	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	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	ND	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
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	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	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
styrene	ND	ND	ND	NR	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
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	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
1,2,4-trichlorobenzene	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
Tetrachloroethene	ND	ND	ND	ND	0.49J	0.81J	0.73J	1.5	1.4	1.6	1.2	1.3 J	1.0	1.1	1.0	0.33 J	ND	0.44 J	1.6	1.8 J	1.7 J	1.2	1.6	1.5	1.6	2.2	1.6	2.5	2.3	1.9	1.6
Toluene	ND	0.50J	0.39J	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	ND	0.98J	0.84J	1.2	1.1	1.1	0.78 J	1.0 J	0.59 J	0.63 J	0.58 J	0.54 J	0.42 J	0.34 J	0.49 J	ND	ND	0.61 J	0.66 J	0.66 J	0.39 J	0.35 J	0.36 J	0.30 J	0.21 J	ND	ND
1,1,2-trichloroethane	ND	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	ND	ND
Trichloroethene	16.2	20.6	18.0	60	35.0	53.2	52.3	77.6	76.2	77.9	63.1	72.4 J	51.0	55.2	59.0	42.5	37.7	42.8	46.6	49	48	62.7	60.5	60.0	43.4	41.8	45.4	37.6	40	27	22
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.80 J	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
o-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	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	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	ND	ND	ND
xylenes (total)	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	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	NR	NR	<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	0.04 J	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	14.8	NR	NR	<4.0	<4.0	<4.0	<4.0	<4.0	5160	ND	ND	ND	NR	17	ND	ND	16	ND	9.5 J	ND	15	14	8	12	ND	ND	ND	3.3	2.9

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 2017

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[2]	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
Comments		Duplicate			Duplicate									Duplicate		Duplicate							Duplicate					Duplicate		Duplicate	
Well Depth (Ft)	495																														
Screened Interval (Ft)	475-495																														
VOCS (EPA 624) ug/L [4]																															
Acrolein	NR	NR	NR	NR	NR	NR	NR	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
Acrylonitrile	NR	NR	NR	NR	NR	NR	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
Acetone	NR	NR	ND	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
Benzene	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	ND	ND	ND	ND	ND
Bromodichloromethane	NR	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
Bromoform	NR	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
Bromomethane	NR	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
2-butanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	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	ND	ND	ND	ND	ND
Chlorobenzene	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	ND	ND	ND	ND	ND
Dibromochloromethane	NR	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
Chloroethane	NR	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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	ND
Chloroform	ND	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	0.27 J	0.24 J	0.23 J	0.26 J	0.24 J	0.24 J
Chloromethane	NR	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
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
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
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	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
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	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
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	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
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	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
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
1,1-dichloroethane	ND	ND	0.54J	ND	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
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	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	1.2	ND	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
cis-1,2-dichloroethene	1.5J	1.6J	2.4	1.1	0.92J	0.92J	1.6	1.7	1.1	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	1.3
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	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	NR	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
cis-1,3-dichloropropene	NR	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
trans-1,3-dichloropropene	NR	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
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	ND
Ethylbenzene	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	ND	ND	NR	NR	ND
2-hexanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
Methylene chloride	NR	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
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
4-methyl-2-pentanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	NR	NR
styrene	NR	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
1,1,2,2-tetrachloroethane	NR	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
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
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	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
Toluene	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	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.58J	ND	ND	ND	ND	0.39 J	0.43 J	ND	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
1,1,2-trichloroethane	ND	ND	ND	ND	0.25 J	0.27J	ND	NR	0.32 J	0.32 J	0.32 J	ND	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	0.24 J	0.26 J
Trichloroethene	160	170	211	73	58.2	60.9	110	135	151	71.9	96.5	209	198	192	173 J	171	155	140	174	176	164	148	151	159	169	204	190	190	160	150	140
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	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
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	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	NR	NR	NR	NR	NR	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	ND	ND	ND
xylenes (total)	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
Mercury (EPA 245.1) ug/L	NR	NR	<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	ND
TSS (SM20 2540D) mg/L	NR	NR	5.0	6.0	ND	10.0	10.0	7	6	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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 2017

Sample ID	RW3-MW3																										
Sample Date	1/20/2010	4/22/2010	4/22/2010	7/28/2010	11/3/2010 [1]	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 [2]	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
Comments			Duplicate								Duplicate											Duplicate						Duplicate
Well Depth (Ft)	340																										
Screened Interval (Ft)	320-340																										
VOCS (EPA 624) ug/L [4]																											
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
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
Acetone	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
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
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
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
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
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
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
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
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
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	ND	ND	ND	NR	ND
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
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
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	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
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
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
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	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
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	0.30 J	ND	ND	ND
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	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
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	ND	ND	1.2	1.3	1.3	1.3	1.1	1.1	0.83 J	0.8 J	0.76 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	ND	NR	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	ND	NR	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	ND	NR	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	ND	ND
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	NR	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	NR	ND	ND	ND	ND	ND	ND	ND	3.2 J	ND	6.2 J	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	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	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
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	0.45J	0.49J	ND	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	0.37 J	0.77 J	0.71 J	0.58 J	0.43 J	0.31 J	0.44 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
1,1,1-trichloroethane	ND	0.95J	1.0J	0.72J	ND	0.62J	1.3	1.0 J	0.49 J	0.84 J	0.87 J	ND	ND	0.85 J	ND	ND	ND	ND	ND	0.40 J	0.48 J	0.45 J	0.36 J	1.1	0.75 J	0.69 J	0.46 J	0.38 J
1,1,2-trichloroethane	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
Trichloroethene	350	397	382	297	8.5	288	331	215 J	250	312	325	285	248	291	347	410	322	322	350	147	182	184	138	284	260	200	100	95
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	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	<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 2540D) mg/L	NR	4.0	5.0	<4.0	<4.0	<4.0	ND	ND	ND	ND	ND	13	10	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	2.4	3	1.9

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 2017

Sample ID	RW3-MW4																								
Sample Date	1/20/2010	4/22/2010	7/28/2010	7/28/2010	11/3/2010 [1]	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 [2]	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
Comments				Duplicate																					
Well Depth (Ft)	495																								
Screened Interval (Ft)	475-495																								
VOCS (EPA 624) ug/L [4]																									
Acrolein	NR	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
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
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
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
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
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
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
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
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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
Chloroform	ND	ND	ND	ND	0.32J	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
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
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
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
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
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	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
1,1-dichloroethane	2.5	0.6	0.54J	0.50J	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
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	1.0	ND	ND	ND	0.86J	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
cis-1,2-dichloroethene	0.46J	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
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
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
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
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
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	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
Methylene chloride	NR	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
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
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
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
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
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
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
1,1,1-trichloroethane	ND	ND	ND	ND	0.67J	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
1,1,2-trichloroethane	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
Trichloroethene	21	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
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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
xylenes (total)	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
Mercury (EPA 245.1) ug/L	NR	<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
TSS (SM20 2540D) mg/L	NR	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

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 2017

Sample ID	TP-01																								IW-1 MW-1		IW-1	RW-3 [3]				
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[2]	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	5/3/2005	6/18/2013[2]	5/27/2009	9/15/2015	3/22/2016	9/15/2016	3/2/2017	9/13/2017
Comments				Duplicate							Duplicate			Duplicate						Duplicate												
Well Depth (Ft)	470																								150		230	530				
Screened Interval (Ft)	450-470																								20-150		200-230	392-412 442-504				
VOCS (EPA 624) ug/L [4]																																
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	NR	NR	NR	ND	ND	ND	ND	ND
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	NR	NR	NR	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	ND	ND	ND	ND	ND	ND	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	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	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	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	ND	ND	ND	ND
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	ND	ND	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	ND	NR	ND	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	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	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	NR	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	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	ND	2.0 R	ND	ND	ND	NR	ND	NR	NR	NR	ND	ND	ND	NR	ND
Chloroform	ND	NR	0.68 J	0.74 J	ND	0.74 J	0.82 J	ND	2.5 J	1.2	1.1	11	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	0.94J	ND	0.98J	ND	0.46 J	0.26 J	ND	0.28 J
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	ND	ND	NR	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	ND	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	ND	NR	ND	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	ND	NR	ND	NR	NR	NR	NR	NR
1,2-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	NR	NR	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	NR	NR	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	NR	NR	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	ND	NR	NR	NR	NR	NR
1,1-dichloroethane	3.6J	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	0.39J	0.51	0.22J	1.9	2.1	1.8	1.4 J	1.5
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	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	1.9	2.5	1.5	1.3 J	1.4
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	ND	ND	ND	1.6	2.4	1.4	1.6 J	1.9
trans-1,2-dichloroethene	3.0J	1.1	1.0 J	0.92 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	ND	ND	ND	0.23 J	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	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	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	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	ND	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	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	ND	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	ND	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	0.64 J	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	ND	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	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	0.46J	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	ND	ND	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	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	ND	NR	NR	NR	NR	NR
Tetrachloroethene	3.4J	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	0.55	ND	0.68 J	0.79 J	0.64 J	0.60 J	0.65 J
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	0.19J	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	ND	0.49 J	0.25 J	0.29 J	0.47	0.92	0.49J	0.96 J	1.3	0.95 J	ND	0.83 J
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	0.30 J	0.49 J	0.29 J	ND	0.45 J
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	ND	ND	0.17J	237	371	230	230	220
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	ND	ND	NR	NR	NR	ND	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	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	ND	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	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	ND	NR	ND	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	NR	NR	0.20	ND	ND	ND	ND
TSS (SM20 2540D) 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	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 vise 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 A

NYSDEC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS AND MONTHLY DMRS

JULY 2017

SBA-certified 8(a), SDB Company

14 August 2017

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 JULY 2017 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2.

GWTP operational data from 1 July 2017 to 31 July 2017 are presented in Attachment A. During this reporting period, unscheduled downtime occurred on 12 July 2017 due to a power outage. The GWTP was down for approximately 6.5 hours before it was brought back online the following day. The unscheduled downtime had minimum impact on the average flowrates during this reporting period.

As indicated in Attachment A, all permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

Attachment A: Groundwater and Air Sampling Results from July 2017

Cc: Donald Hesler - NYSDEC
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

JULY 2017

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
July 2017

SPDES Parameters	July 2017					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1 (1)**	**RW-3**	**Combined Influent (1)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		7/10/17			
Effective Flowrate	1100	GPM	989	0	989	1,017
Total Flow	N/A	gallons	43,594,500	0	43,594,500	44,852,800
pH	5.5 - 8.5	SU	5.10	NS	5.10	6.14
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.5	NS	1.5	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.42 J	NS	0.42 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.9	NS	6.9	0.29 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)
Tetrachloroethene	5	µg/L	24	NS	24	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.96 J	NS	1.0	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	0.44 J
Vinyl Chloride	2	µg/L	0.23 J	NS	0.23 J	ND (1.0)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.
NR - Not Recorded
N/A - Not Applicable
NS - Not Sampled
(1) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
July 2017

DAR Parameters	**July 2017**	**Discharge Goal [1]**	**July 2017**	
Process Stream			**Influent**	**Effluent**
Sampling Date	N/A	N/A	7/10/17	
Average Flowrate	CFM	N/A	NR	7,612
Total Flow	ft^3	N/A	NR	339,817,536
Total Flow	m^3	N/A	NR	9,622,561
1,2-Dichloroethane	$\mu g/m^3$	N/A	3.4 J	1.6 J
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	130	160
trans 1,2-Dichloroethene	$\mu g/m^3$		2.5 J	2.4 J
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	130	160
Toluene	$\mu g/m^3$	N/A	2.20 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	ND	ND
Trichloroethene	$\mu g/m^3$	2,600	1600	7
Vinyl Chloride	$\mu g/m^3$	560	3.9	4.6
Tetrachloroethene	$\mu g/m^3$	5,100	350	2.6 J

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Discharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
July 2017

DAR Parameters	Units	Discharge Goal [(1)]	July 2017
Sampling Date	N/A	N/A	7/10/17
Average Flowrate	CFM	N/A	7,612
Total Flow	ft^3	N/A	339,817,536
Total Flow	m^3	N/A	9,622,561
Trichloroethene	lb/hr	0.09	0.00020
Vinyl Chloride	lb/hr	0.02	0.00013
1,2 Dichloroethene	lb/hr	11	0.00456
1,2-Dichloroethane	lb/hr	N/A	0.00005
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00007

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.

AUGUST 2017

SBA-certified 8(a), SDB Company

28 September 2017

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 AUGUST 2017 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2.

GWTP operational data from 1 August 2017 to 31 August 2017 are presented in Attachment A. During this reporting period, an unscheduled downtime occurred on 6-7 August due to a faulty level transducer at recovery well RW-1. The GWTP was down for approximately 9 hours. The unscheduled downtime had minimum impact on the average flowrates during this reporting period.

In addition, during the August air emission sampling event, the duplicate sample result for trichloroethene (TCE) of 1,000 ug/m^3 was inconsistent with the August routine sample result (11 ug/m3) as well as historical results. The September air emission sampling event confirmed the typical TCE results of 7.0 ug/m^3 for the routine sample and 2.2 J ug/m^3 for the duplicate observed at the GWTP.

As indicated in Attachment A, all permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

Attachment A: Groundwater and Air Sampling Results from August 2017

Cc: Donald Hesler - NYSDEC
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

AUGUST 2017

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
August 2017

SPDES Parameters	August 2017					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1 (1)**	**RW-3**	**Combined Influent (1)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		8/1/17			
Effective Flowrate	1100	GPM	953	0	953	996
Total Flow	N/A	gallons	42,554,700	0	42,554,700	43,929,000
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.14
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.6	NS	1.6	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.25 J	NS	0.25 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.5	NS	1.5	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.5	NS	6.5	0.28 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)
Tetrachloroethene	5	µg/L	22	NS	22	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.84 J	NS	0.8	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	0.45 J
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.
NR - Not Recorded
N/A - Not Applicable
NS - Not Sampled
(1) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
August 2017

DAR Parameters	August 2017	Discharge Goal [1]	August 2017	
Process Stream			Influent	Effluent
Sampling Date	N/A	N/A	8/1/17	
Average Flowrate	CFM	N/A	NR	7,408
Total Flow	ft^3	N/A	NR	330,700,560
Total Flow	m^3	N/A	NR	9,364,397
1,2-Dichloroethane	$\mu g/m^3$	N/A	4.1 J	2.0 J
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	110	150
trans 1,2-Dichloroethene	$\mu g/m^3$		1.9 J	2.0 J
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	110	160
Toluene	$\mu g/m^3$	N/A	2.1 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	1.8 J	ND
Trichloroethene	$\mu g/m^3$	2,600	1700	11
Vinyl Chloride	$\mu g/m^3$	560	3.3	2.0
Tetrachloroethene	$\mu g/m^3$	5,100	320	3.9 J

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Discharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
August 2017

DAR Parameters	Units	Discharge Goal (1)	August 2017
Sampling Date	N/A	N/A	8/1/17
Average Flowrate	CFM	N/A	7,408
Total Flow	ft^3	N/A	330,700,560
Total Flow	m^3	N/A	9,364,397
Trichloroethene	lb/hr	0.09	0.00031
Vinyl Chloride	lb/hr	0.02	0.00006
1,2 Dichloroethene	lb/hr	11	0.00444
1,2-Dichloroethane	lb/hr	N/A	0.00006
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00011

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.

SEPTEMBER 2017

SBA-certified 8(a), SDB Company

19 October 2017

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 SEPTEMBER 2017 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2, and the SPDES Permit Equivalent # 13003B.

GWTP operational data from 1 September 2017 to 30 September 2017 are presented in Attachment A. During this reporting period, scheduled downtime occurred on 19 September 2017 to install and rewire the new PLC analog card and replace three intrinsic safety barriers. The GWTP was down for approximately 5 hours. The scheduled downtime had minimum impact on the average flowrates during this reporting period.

As indicated in Attachment A, all SPDES permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

Attachment A: Groundwater and Air Sampling Results from September 2017

Cc: S. Edwards, NYSDEC
Donald Hesler – NYSDEC
C. Haas, NYSDEC Region 1
W. Parish, NYSDEC Region 1
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
S. Karpinski, NYSDOH
J. Lovejoy, NCDOH
L. Thantu, USEPA Region 2
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

SEPTEMBER 2017

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
September 2017

SPDES Parameters	September 2017 (1)					
Process Stream	**Daily Treated Effluent Maximum(1)**	**Units**	**RW-1** (2)	**RW-3** (3)	**Combined Influent** (3)	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		9/5/17			
Effective Flowrate	1100	GPM	956	1.3	958	986
Total Flow	N/A	gallons	41,931,346	57,900	41,989,246	43,226,363
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.17
Chloroform	5	µg/L	0.38 J	NS	0.38 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.9	NS	1.90	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.1	NS	1.10	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.7	NS	6.70	0.33 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	21	NS	21.00	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.98 J	NS	0.98 J	ND (1.0)
Trichloroethene	5	µg/L	95	NS	95.00	0.69 J
Trichlorofluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)
1,4-Dioxane	--	µg/L	ND (20)	NS	ND (20)	ND (20)
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:

J - Estimated result between laboratory method detection limit and reporting limit

ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and trichlorofluoroethane are now monitored under the new permit.

(2) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

(3) Well RW-3 was turned on for a total of approximately 3 hours this period to collect the Semi-Annual groundwater samples.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
September 2017

DAR Parameters	September 2017	Discharge Goal [1]	September 2017	
Process Stream			Influent	Effluent
Sampling Date	N/A	N/A	9/5/17	
Average Flowrate	CFM	N/A	NR	7,876
Total Flow	ft^3	N/A	NR	340,236,000
Total Flow	m^3	N/A	NR	9,634,411
1,2-Dichloroethane	$\mu g/m^3$	N/A	4.2 J	2.8 J
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	100	150
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	1.7 J
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	100	150
Toluene	$\mu g/m^3$	N/A	0.66 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	1.5 J	ND
Trichloroethene	$\mu g/m^3$	2,600	1700	7.0
Vinyl Chloride	$\mu g/m^3$	560	2.9 J	2.0
Tetrachloroethene	$\mu g/m^3$	5,100	380	3.9 J

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Discharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
September 2017

DAR Parameters	Units	Discharge Goal (1)	September 2017
Sampling Date	N/A	N/A	9/5/17
Average Flowrate	CFM	N/A	7,876
Total Flow	ft^3	N/A	340,236,000
Total Flow	m^3	N/A	9,634,411
Trichloroethene	lb/hr	0.09	0.00021
Vinyl Chloride	lb/hr	0.02	0.00006
1,2 Dichloroethene	lb/hr	11	0.00443
1,2-Dichloroethane	lb/hr	N/A	0.00008
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00012

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.

APPENDIX B

NYSDEC AIR DISCHARGE LIMIT DOCUMENTATION

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action Bureau A, 12th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 FAX: (518) 402-9022

Joseph Martens
Commissioner

October 31, 2013

Lora Fly
Remedial Program Manager
NAVFAC Mid-Atlantic
Northeast IPT
9742 Maryland Avenue
Norfolk, VA, 23511-3095

RE: Northrop Grumman, Naval Weapons Industrial Reserve Plant (NWIRP) and Grumman Steel Los Sites, NYSDEC Site No.'s 1-30-003 A & B.

Dear Ms. Fly:

Tetra Tech NUS Inc., on behalf of the Department of the Navy NAVFAC Midlantic, has submitted an application to remove the GM 38 Area Groundwater Extraction and Treatment system impregnated Xeolite[tm] resin from the air discharge treatment system. Currently, the air treatment system uses a combined activated carbon with permanganate impregnated resin treatment train. The New York State Department of Environmental Conservation (NYSDEC) has reviewed the Department of the Navy application and concurs with the findings presented.

The routine monitoring, as detailed in Table 1, clearly indicates that vinyl chloride, one of the main contaminants of concern, has diminished to almost non-detect, and discharge concentrations have dropped to below the limit to require air treatment for the other contaminants as well. However, NAVFAC Midlantic is still proposing activated carbon to reduce the other discharge contaminant levels. Therefore, the NYSDEC hereby approves the proposed changes to the GM 38 Area air treatment. The Xeolite[tm] resin beds will remain in place should reactivation, based on routine monitoring, be required.

If you have any questions in the interim, please contact me at (518)402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Remedial Action Bureau A
Division of Environmental Remediation

EC: J. Swartwout
S. Scharf
W. Parish, Region 1
S. Karpinski, NYSDOH
E. Hannon, NGC
D. Stern, Arcadis
D. Brayack, TTNUS

NOR-01264

November 21, 2011

Mr. Stephen Scharf
New York Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE06

Subject: Proposed Modification to Discharge Limits for Off Gas Volatile Organic Compounds (VOCs) for Air Stripping Tower
GM-38 Offsite Groundwater Treatment Plant,
NWIRP Bethpage, New York

Dear Mr. Scharf:

On behalf of the Navy, please find enclosed a copy of the subject document. This document presents an evaluation of current concentrations of off gas VOCs from the GM-38 groundwater treatment plant air-stripping tower (prior to treatment with granular activated carbon). Maximum emission rates were re-evaluated due to decreasing maximum concentrations of target VOCs in un-treated air stripper AS-1 off gas. In addition, breakthrough of target contaminants (e.g., cis-1,2-dichloroethene) is beginning to occur in the granular activated carbon bed. Maximum emission rates were re-evaluated to provide a determination if breakthrough of contaminants would trigger the need for a replacement of the granular activated carbon bed.

Existing Discharge Goals were established in the "Final Operation, Maintenance and Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation" prepared by Tetra Tech EC (April 2010). Existing goals were based on emission estimates for a 95% reduction (see Attachment A), instead of being based on the original DAR-1 analysis of air stripper off gas. Emission estimates were calculated using the air stripper design flow rate of 8,000 cubic feet per minute (cfm), and previous contaminant discharge rates in pounds per hour (lb/hr). Original emission estimates are provided in Attachment B.

Proposed Revised Discharge Goals were calculated using an average flow rate of 9,200 cfm, January to March 2011 VOC loading rates (taken from the Quarterly Operations Report First Quarter 2011 from ECOR Federal Services), and the Actual Annual % of Annual Guideline Concentrations (AGCs), taken from the revised DAR-1 Model Output. The revised DAR-1 Model Output is provided in Attachment C. Existing Discharge Goals and Proposed Revised Discharge Goals are compared in tabular format in the first page of the attachment. Proposed Revised Discharge Goals for trichloroethene (TCE) are the same as previous. The proposed limit for tetrachloroethene (PCE) is approximately 10 times the previous limit, and vinyl chloride is approximately 2 times the previous limit. Revised Discharge Goals for 1,2-dichloroethene (goals are the same for cis-1,2-dichloroethene) are 100 times greater than previously established limits. It is recommended that these revised limits replace previous discharge goals, and treatment of air stripper off gas by granular activated carbon is recommended to continue for TCE and PCE, with no treatment required for vinyl chloride and 1,2-dichloroethene.

Tetra Tech NUS, Inc.
5700 Lake Wright Drive, Suite 309, Norfolk, VA 23502
Tel 757.461.3768 Fax 757.461.4148 www.ttnus.com

If you have any questions please contact Ms. Lora Fly, NAVFAC Mid-LANT, at (757) 341-2012.

Sincerely,

David D. Brayack, P.E.
Project Manager

Enclosure: (1) Proposed Modification to Discharge Limits for Off Gas Volatile Organic Compounds (VOCs) for Air Stripping Tower
GM-38 Offsite Groundwater Treatment Plant

Distribution:

Mid-Lant, Lora Fly
NYSDEC (Albany), Henry Wilkie
NYSDOH (Troy), Steve Karpinski
NAVAIR, Richard Smith
USEPA, Carol Stein
NGC, Kent Smith
Tetra Tech NUS, Dave Brayack
ECOR Solutions, Al Taormina
Administrative Record
Public Repository
Project File

Tetra Tech NUS, Inc.
5700 Lake Wright Drive, Suite 309, Norfolk, VA 23502
Tel 757.461.3768 Fax 757.461.4148 www.ttnus.com

TABLE 1
COMPARISON OF EXISTING DISCHARGE GOALS WITH ACTUAL EMISSIONS AND PROPOSED DISCHARGE GOALS
AIR STRIPPING TOWER GM-38 OFFSITE GROUNDWATER TREATMENT PLANT
NWIRP BETHPAGE, NEW YORK

	Existing Discharge Goal		Actual January to March 2011 Values (Pre-Off Gas Treatment)		Proposed Revised Discharge Goals based on DAR-1 Analysis	
Chemical	Existing Discharge Loading Rate (pounds (lbs)/hour)[(1)]	Equivalent Existing Discharge Goals ($\mu g/m^3$)[(2)]	Actual Jan-Mar 2011 Concentration ($\mu g/m^3$)[(3)]	Actual VOC Loading Pre-Off Gas Treatment (lbs/hour)[(4)]	Proposed Discharge Loading Rate (lbs/hour)[(5)]	Equivalent Proposed Discharge Goal ($\mu g/m^3$)[(5)]
TCE	0.09	2,600	10,000	0.345	0.09	2,600
PCE	0.02	580	6,800	0.234	0.18	5,100
Vinyl Chloride	0.01	290	76	0.003	0.02	560
1,2-Dichloroethene (total)	0.03	870	750	0.026	11	greater than 100,000

Notes:

[(1)]Existing Discharge Goals are based on the design flow rate of 8,000 cfm. Existing Discharge Goals were taken from the Final Operations and Maintenance Plan for GM-38 Area Groundwater Remediation from Tetra Tech EC. Existing goals were based on emission estimates for a 95% reduction, and not the previous DAR-1 Analysis. Attachment B (provided at the end of this package) provides the original emission estimates.

[(2)]Existing Discharge Goals were calculated using the actual flow rate of 9,200 cfm and the existing discharge loading rate in pounds per hour (lb/hr).

[(3)]Values were taken from the Quarterly Operations Report First Quarter 2011 from ECOR Federal Services. Values were the maximum effluent concentration in off gas from air stripper stack AS-1 prior to treatment with vapor phase granular activated carbon (GAC), for the months of January, February and March 2011.

[(4)]Actual VOC Loading was calculated using an average flow rate of 9,200 cfm and the January-March 2011 concentrations. Existing off gas treatment consists of two stage vapor phase GAC followed by potassium permanganate zeolite media to provide additional treatment for vinyl chloride.

[(5)]Values were calculated using an average flow rate of 9,200 cfm, and the Actual Annual % of the AGCs from the 2011 DAR-1 Model Output to achieve air quality requirements.

ATTACHMENT A

2008 AIR PERMIT SUBMITTAL

New York State Department of Environmental Conservation
Air Permit Application

DEC ID	APPLICATION ID	OFFICE USE ONLY
- -	- /	/ /

Section I - Certification

Title V Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is, true, accurate and complete I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations

Responsible Official	Title
Signature	Date / /

State Facility Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official	Title
Signature	Date / /

Section II - Identification Information

Title V Facility Permit N/A	State Facility Permit N/A
❑ New ❑ Significant Modification ❑ Administrative Amendment ❑ Renewal ❑ Minor Modification General Permit Title:	❑ New ❑ Modification General Permit Title:
☒ Application involves construction of new facility ❑ Application involves construction of new emission unit(s)	

Owner/Firm

Name	US Navy/NAVFAC Midlant		
Street Address	9742 Maryland Ave, Bldg Z-144		
City Norfolk	State VA	Country US	Zip 23511-3095
Owner Classification ☒ Federal ❑ State ❑ Municipal ❑ Corporation/Partnership ❑ Individual			Taxpayer ID

Facility ❑ Confidential

Name	Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area	
Location Address	Bethpage	
❑ City / ☒ Town / ❑ Village	Oyster Bay, New York	Zip 11714

Project Description ❑ Continuation Sheet(s)

Air stripping of groundwater to remove VOCs

Owner/Firm Contact Mailing Address

Name (Last, First, Middle Initial)	Fly, Lora		Phone No. (757) 444-0781
Affiliation	Department of the Navy	Title Remedial PM	Fax No. ( )
Street Address	9742 Maryland Ave. Bldg Z-144		
City Norfolk	State VA	Country US	Zip 23511-3095

Facility Contact Mailing Address

Name (Last, First, Middle Initial)	Same		Phone No. ( )
Affiliation		Title	Fax No. ( )
Street Address			
City	State	Country	Zip

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section III - Facility Information

Classification

❑ Hospital ❑ Residential ❑ Educational/Institutional ❑ Commercial ☒ Industrial ❑ Utility

Affected States (Title V Only) N/A

❑ Vermont ❑ Massachusetts ❑ Rhode Island ❑ Pennsylvania Tribal Land:_____
❑ New Hampshire ❑ Connecticut ❑ New Jersey ❑ Ohio Tribal Land:_____

SIC Codes

9999												

Facility Description ❑ Continuation Sheet(s)

Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control

Compliance Statements (Title V Only) N/A

I certify that as of the date of this application the facility is in compliance with all applicable requirements: ❑ YES ❑ NO

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

- ❑ This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.
- ❑ For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.
- ❑ Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status.

Facility Applicable Federal Requirements N/A ❑ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
	CERCLA	all substantive requirements							

Facility State Only Requirements ❑ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - - -

Section III - Facility Information (continued)

Facility Compliance Certification N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

❑ Applicable Federal Requirement ❑ State Only Requirement	❑ Capping	CAS No.	Contaminant Name
		- -	

Monitoring Information

❑ Ambient Air Monitoring ❑ Work Practice Involving Specific Operations ❑ Record Keeping/Maintenance Procedures

Description

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description

Facility Emissions Summary ❑ Continuation Sheet(s)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
NY075 - 00 - 5	PM-10			
NY075 - 00 - 0	PARTICULATES			
7446 - 09 - 5	SULFUR DIOXIDE			
NY210 - 00 - 0	OXIDES OF NITROGEN			
630 - 08 - 0	CARBON MONOXIDE			
7439 - 92 - 1	LEAD			
NY998 - 00 - 0	VOC	117		
NY100 - 00 - 0	HAP	110		
0079 - 01 - 6	Trichloroethylene	99		
00075 - 01 - 4	Vinyl Chloride	3.7		
00540 - 59 - 0	1,2-Dichloroethylene	7.3		
- -				
- -				

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - -

Section IV - Emission Unit Information

Emission Unit Description

❑ Continuation Sheet(s)

EMISSION UNIT: 0-00EU1

Air Stripper AS-1 for groundwater remediation, provided with activated carbon for emission control. The emission point is stack 00ST-1. The 2-stage VGAC is followed by a 3rd vessel containing a potassium permanganate zeolite media for increased VC capacity.

Building

❑ Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation
BLDG-1	Treatment Plant	75	75	0

Emission Point

❑ Continuation Sheet(s)

EMISSION PT.: 00ST1

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section	
					Length (in)	Width (in)
90	40	15	36	80		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
19	8020			BLDG-1	50	

EMISSION PT.:

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section	
					Length (in)	Width (in)
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**

Emission Source/Control

❑ Continuation Sheet(s)

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
AS-1	I				048	Granular Act. Carbon	Air Stripping Column

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

EMISSION UNIT 0-00EU1 PROCESS PR1

Description

The remedial system is air stripping, using a packed column at a groundwater flow rate of 1,100 gpm (plus 100 gpm recycle, for a total of 1,200 gpm). Vapor phase treatment includes the use of 3 vessels, a 2-stage GAC unit, followed by a 3rd vessel containing a potassium permanganate impregnated zeolite for increased VC capacity. Prior to entering the vapor-phase GAC adsorption system, the humidity of the air stripper exhaust is reduced to approximately 50 percent or less to optimize the efficiency of the vapor-phase GAC.

Air Stripper AS-1: Existing. Type: Vertical, Cylindrical Construction: Aluminum

Packing: 25-foot Jaeger Tripack. Dimensions: 10.0 ft. Dia x 47 ft. H

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ☒ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		
	24	365	BLDG-1	Main

Emission Source/Control Identifier(s)

AS-1							

EMISSION UNIT - PROCESS

Description

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ❑ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit Compliance Certification ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
6	NYCRR	212							

☒ Applicable Federal Requirement ❑ State Only Requirement ❑ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
0-00EU1	00ST1	PR1	AS-1	00079 - 01 - 6	Trichloroethylene

Monitoring Information

❑ Continuous Emission Monitoring
☒ Intermittent Emission Testing
❑ Ambient Air Monitoring
❑ Monitoring of Process or Control Device Parameters as Surrogate
❑ Work Practice Involving Specific Operations
❑ Record Keeping/Maintenance Procedures

Description

Monthly grab samples analyzed for VOCs from the vapor phase treatment system influent, effluent and two intermediate locations.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
23	Concentration	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
3,125		255	micrograms per cubic meter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
01	Instantaneous	05	Monthly	10	Upon Request

DEC ID
- -

Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Process Emissions Summary ❑ Continuation Sheet(s)

EMISSION UNIT	0-00EU1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
0079 - 01 - 6	Trichloroethylene			95	1.87	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.09	99			02		

EMISSION UNIT	0-00EU1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00075- 01 - 4	Vinyl Chloride			95	0.17	03

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.01	3.7			02		

EMISSION UNIT	0-00EU1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
000540 - 59 - 0	1,2-Dichloroethylene			95	0.6	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.03	7.3			02		

DEC ID
- - -

Section IV - Emission Unit Information (continued)

EMISSION UNIT 0-00EU1	Emission Unit Emissions Summary		❑ Continuation Sheet(s)	
CAS No.	Contaminant Name			
00107- 06 - 2	1,2-Dichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
13.4	Below Reporting Threshold BRT			
CAS No.	Contaminant Name			
00108 - 88 - 3	Toluene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
72.7	BRT	BRT		
CAS No.	Contaminant Name			
01330- 20 - 7	Xylene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
77.1	BRT	BRT		
CAS No.	Contaminant Name			
- -	1,1,2-Trichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		

Compliance Plan

❑ Continuation Sheet(s)

For any emission units which are not in compliance at the time of permit application, the applicant shall complete the following

Consent Order — Certified progress reports are to be submitted every 6 months beginning ____/____/____

Emission Unit	Process	Emission Source	Applicable Federal Requirement									
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-												

Remedial Measure / Intermediate Milestones	R/I	Date Scheduled

DEC ID

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Emission Reduction Description

Contaminant Emission Reduction Data

Baseline Period ___/___/___ to ___/___/___

Reduction Date	Reduction Method
/ /	

CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
- -			
- -			
- -			

Facility to Use Future Reduction

Name | APPLICATION ID

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Use of Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Proposed Project Description

Contaminant Emissions Increase Data

CAS No.	Contaminant Name	PEP (lbs/yr)
- -		

Statement of Compliance

❑ All facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under Section 114(a)(3) of the Clean Air Act Amendments of 1990, or are meeting the schedule of a consent order.

Source of Emission Reduction Credit - Facility

Name | PERMIT ID

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Emission Unit	CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
-	- -			
-	- -			
-	- -			

DEC ID
- -

Supporting Documentation

- ☒ P.E. Certification (form attached)
- ❑ List of Exempt Activities (form attached)
- ☒ Plot Plan
- ❑ Methods Used to Determine Compliance (form attached)
- ☒ Calculations
- ❑ Air Quality Model (_____ / _____ / _____)
- ❑ Confidentiality Justification
- ❑ Ambient Air Monitoring Plan (_____ / _____ / _____)
- ❑ Stack Test Protocols/Reports (_____ / _____ / _____)
- ❑ Continuous Emissions Monitoring Plans/QA/QC (_____ / _____ / _____)
- ❑ MACT Demonstration (_____ / _____ / _____)
- ❑ Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
- ❑ Title IV: Application/Registration
- ❑ ERC Quantification (form attached)
- ❑ Use of ERC(s) (form attached)
- ❑ Baseline Period Demonstration
- ❑ Analysis of Contemporaneous Emission Increase/Decrease
- ❑ LAER Demonstration (_____ / _____ / _____)
- ❑ BACT Demonstration (_____ / _____ / _____)
- ❑ Other Document(s): _____ (/ /)

ATTACHMENT B

2008 EMISSION ESTIMATES BASED ON 95% REMOVAL

ATTACHMENT 1
Emission Estimate

POTENTIAL EMISSION ESTIMATES, USED TO DEVELOP 95% REDUCTION OF EMISSION VALUES AS BASED ON INFLUENT GROUNDWATER CONCENTRATIONS (95% REDUCTION OF EMISSION VALUES ARE PROVIDED ON PAGE 7 OF THE 2008 AIR PERMIT APPLICATION PROCESS EMISSIONS SUMMARY)

Feed Water Flow	1,100	gpm: max or normal
	250	m^3/hr
Water Flow Including Recycle	1,200	gpm: max or normal
	273	m^3/hr
Air Flow	8,000	cfm
	13,592	m^3/hr
A/W vol ratio	50	

EXAMPLE EMISSION CALC: Vinyl Chloride
4.8 ug/L x 1000 L/m^3 x 250 m^3 water/13,623 m^3 air = 88 ug/m^3

Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	GW Conc.[1] Max ug/L	GW Conc.[1] Avg ug/L	Effluent Conc[1] Max ug/L	Effluent Conc[1] Avg ug/L	Uncontrolled Stripper Exhaust Max lb/day	Avg lb/day	Max lb/hr	Avg lb/hr	Max gm/sec	Avg gm/sec	Max ug/m^3	Avg ug/m^3
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	**No**	Yes	3	3.0			0.04	0.04	0.00	0.00	2.08E-04	2.08E-04	55	55
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	3.5	0.3			0.05	0.00	0.00	0.00	2.43E-04	2.08E-05	64	6
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	4	0.7			0.05	0.01	0.00	0.00	2.77E-04	4.85E-05	74	13
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	3	1.0	0.3	0.1	0.04	0.01	0.00	0.00	1.87E-04	6.24E-05	55	18
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	9	1.6			0.12	0.02	0.00	0.00	6.24E-04	1.11E-04	165	29
1,2-Dichloroethylene	00540-59-0	M	Yes	**No**	1,100	31.5	1.3	0.0	14.51	0.42	0.60	0.02	7.62E-02	2.18E-03	20,219	579
Benzene	00071-43-2	H	Yes	Yes	4	0.1			0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	4	0.1			0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	1	0.1			0.01	0.00	0.00	0.00	6.94E-05	6.94E-06	18	2
Chloroform	00067-66-3	M	Yes	Yes	2	0.8			0.03	0.01	0.00	0.00	1.39E-04	5.55E-05	37	15
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	2	0.1			0.03	0.00	0.00	0.00	1.39E-04	6.94E-06	37	2
Tetrachloroethylene	00127-18-4	M	Yes	Yes	900	33.8	0.9	0.0	11.88	0.45	0.49	0.02	6.24E-02	2.34E-03	16,543	621
Toluene	00108-88-3	L	Yes	Yes	15	0.7			0.20	0.01	0.01	0.00	1.04E-03	4.85E-05	276	13
Trichloroethylene	00079-01-6	M	Yes	Yes	3,400	411.5	4.5	0.5	44.86	5.43	1.87	0.23	2.35E-01	2.85E-02	62,494	7,564
Vinyl chloride	00075-01-4	H	Yes	Yes	300	4.8	0.0	0.0	3.96	0.06	0.17	0.00	2.08E-02	3.33E-04	5,514	88
Xylenes	01330-20-7	M	Yes	Yes	16	0.2			0.21	0.00	0.01	0.00	1.11E-03	1.39E-05	294	4
Total VOCs					5,764	487.3	7.0	0.6	76.05	6.43	3.17	0.27				
Total HAPs					4,667	458.8	5.7	0.6	61.57	6.05	2.57	0.25				

Total Uncontrolled VOC 2,347 lb/yr
Total Uncontrolled HAP 2,209 lb/yr

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Toxics Section, September 10, 2007.
3. Source: 6 NYCRR Part 200 1(cg)
4. Source: 6 NYCRR Part 200.1(ag)

ATTACHMENT 1
Emission Estimate

Feed Water Flow	1,100	gpm: max or normal
	250	m^3/hr
Water Flow Including Recycle	1,200	gpm: max or normal
	273	m^3/hr
Air Flow	8,000	cfm
	13,592	m^3/hr
A/W vol ratio	50	

					Controlled Stripper Exhaust				
Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	Control by GAC	Max lb/day	Avg lb/day	Max gm/sec	Avg gm/sec
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	**No**	Yes	95%	0.00	0.00	1.04E-05	1.04E-05
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	95%	0.00	0.00	1.21E-05	1.04E-06
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	95%	0.00	0.00	1.39E-05	2.43E-06
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	95%	0.00	0.00	9.36E-06	3.12E-06
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	95%	0.01	0.00	3.12E-05	5.55E-06
1,2-Dichloroethylene	00540-59-0	M	Yes	**No**	95%	0.73	0.02	3.81E-03	1.09E-04
Benzene	00071-43-2	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	95%	0.00	0.00	3.47E-06	3.47E-07
Chloroform	00067-66-3	M	Yes	Yes	95%	0.00	0.00	6.94E-06	2.77E-06
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	95%	0.00	0.00	6.94E-06	3.47E-07
Tetrachloroethylene	00127-18-4	M	Yes	Yes	95%	0.59	0.02	3.12E-03	1.17E-04
Toluene	00108-88-3	L	Yes	Yes	95%	0.01	0.00	5.20E-05	2.43E-06
Trichloroethylene	00079-01-6	M	Yes	Yes	95%	2.24	0.27	1.18E-02	1.43E-03
Vinyl chloride	00075-01-4	H	Yes	Yes	95%	0.20	0.00	1.04E-03	1.66E-05
Xylenes	01330-20-7	M	Yes	Yes	95%	0.01	0.00	5.55E-05	6.94E-07
Total VOCs						3.80	0.32		
Total HAPs						3.08	0.30		

Total Controlled VOC	117	lb/yr
Total Controlled HAP	110	lb/yr

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Tox
3. Source: 6 NYCRR Part 200.1(cg)
4. Source: 6 NYCRR Part 200.1(ag)

ATTACHMENT C

2011 DISCHARGE GOALS AND 2011 DAR-1 ANALYSIS

Tetra Tech NUS		***STANDARD CALCULATION SHEET***	
CLIENT: US CLEAN	FILE No:	BY: SK	PAGE: 1 of 1
SUBJECT: Calculation of Current Discharge Goals GM-38 Area NWIRP Bethpage, New York		CHECKED BY:	DATE: 9/7/2011

1. Purpose:

To calculate current discharge goals for Trichloroethene (TCE), Tetrachloroethene (PCE), Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total), for treatment of off-gas from the air stripper stack AS-1.

2. Approach:

From the Contaminant Assessment Summary of the DAR-1 Model output for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total) (see DAR-1 output for analysis inputs), use the Actual Annual % of the Annual Guideline Concentration (AGC), a current average flow rate of 9,200 cubic feet per minute (cfm), and influent chemical emission rates in pounds per hour (lb/hour) and pounds per year (lb/year) to back calculate current discharge goals.

3. Calculation of Current Discharge Goals:

Chemical	Current Actual Annual % of AGC[(1)]	Current Maximum Concentration ($\mu g/m^3$)[(2)]	Current Chemical Emission Rate Prior to Treatment (lb/hour)[(3)]	Current Chemical Emission Rate Prior to Treatment (lb/year)[(3)]	Calculated Discharge Goal (lb/hr)[(4)]	Calculated Discharge Goal (lb/year)[(4)]	Maximum Allowable Concentration ($\mu g/m^3$)[(4)]
TCE	390.6	10,000	0.3446	3,019	0.0882	770	2,600
PCE	132.8	6,800	0.2344	2,053	0.1764	1,500	5,100
Vinyl Chloride	13.49	76	0.0026	22.94	0.0194	170	560
cis 1,2-Dichloroethene	0.2322	750	0.0258	226.4	11.13	98,000	320,000
1,2-Dichloroethene (total)	0.2322	750	0.0258	226.4	11.13	98,000	320,000

Notes:

[(1)]Actual Annual % of the AGCs is from the attached DAR-1 Model Output.

[(2)]Values were taken from the Quarterly Operations Report First Quarter 2011 (June 2011) from ECOR Federal Services. Values were the maximum effluent concentration in off gas from air stripper stack AS-1 for the months of January, February, and March 2011.

[(3)]Chemical Emission Rates were calculated from maximum concentrations and an average flow rate of 9,200 cfm.

[(4)]Discharge Goals are based on a flow of 9,200 cfm, and calculated from the Actual Annual % of the AGCs from the DAR-1 Model Output to achieve air quality requirements. The summary of additional inputs for this model run is provided in the DAR-1 Model Output. Stack height is 40 feet, and the property line was evaluated at a distance of 50 feet.

BETHPAGE SITE GM-38 OFF-SITE GROUNDWATER AIR STRIPPER STACK EMISSIONS
DAR-1 MODEL OUTPUT, POINT SOURCE (STACK EMISSIONS) TYPE
INCLUDES ISCLT MODELING SUMMARY

I. Summary of Inputs for Model Run to Nearest Property Line (50 feet), worst case scenario (highest contaminant concentrations seen in first quarter 2011 in untreated effluent from Air Stripper AS-1 prior to treatment with granular activated carbon (GAC))

Chemical	CAS No. 00079-01-6 (TCE)	CAS No. 00127-18-4 (PCE)	CAS No. 00075-01-4 (Vinyl Chloride)	CAS No. 00156-59-2 (cis 1,2-Dichloroethene)	CAS No. 00540-59-0 (1,2-Dichloroethene, total)
Emission Rate Prior to Treatment[(1)] (lb/hour)	0.3444	0.2342	0.0026	0.0258	0.0258
Emission Rate Prior to Treatment[(1)] (lb/year)	3,017	2,052	22.93	226.0	226.0
Maximum Concentration of Untreated Off Gas ($\mu g/m^3$)[(1)]	10,000	6,800	76	750	750
Annual Guideline Concentration (AGC) ($\mu g/m^3$)	0.5	1.0	0.11	63	63
Short-term Guideline Concentration (SGC) ($\mu g/m^3$)	14,000	1,000	180,000	--	--

HA	Height Above stack/ maximum height of plume (HA, feet)	15
SH	Stack Height/Treatment Building Air Stack (SH, feet)	40
D	Stack Diameter (D, inches)	36
T	Stack Exit Temperature (T, degrees Fahrenheit)	80
V	Stack Exit Velocity (V, ft/sec)	21.69
Q[(2)]	Stack Exit Flow Rate [Q, Actual Cubic Feet per Minute (ACFM)]	9,200
Dpl	Shortest Distance from Source Building (Treatment Building) to Property Line (Dpl, feet) for point sources	50
BW	Building Width (BW, feet) of Source Building (Treatment Building) for point sources	75
BL	Building Length (BL, feet) of Source Building (Treatment Building)	75
Q	Actual Hourly Emission Rate (lbs/hour) for source contaminant	Chemical specific, see above
Qa	Actual Annual Emission Rate (lbs/year) for source contaminant	Chemical specific, see above

[(1)] Emission rates and maximum concentration values were taken from the Quarterly Operations Report First Quarter (June 2011) as provided by ECOR Services, using January, February, and March 2011 maximum rates of untreated off gas from Air Stripper AS-1 in the

GM-38 Treatment Building. Emission rates are based on continuous operation 24 hours per day, 7 days a week, 52 weeks a year, or approximately 8,760 hours of operation.
(2) "Q" is an average value of January and February 2011 monthly flow rates. Effective water and vapor flow rates were reduced during the reporting period of March due to a shutdown of the Treatment Plant on March 23, 2011.

II. Contaminant Assessment Summary of TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

CONTAMINANT ASSESSMENT SUMMARY OF DAR-1 ANALYSIS 9/ 8/11
Page 1

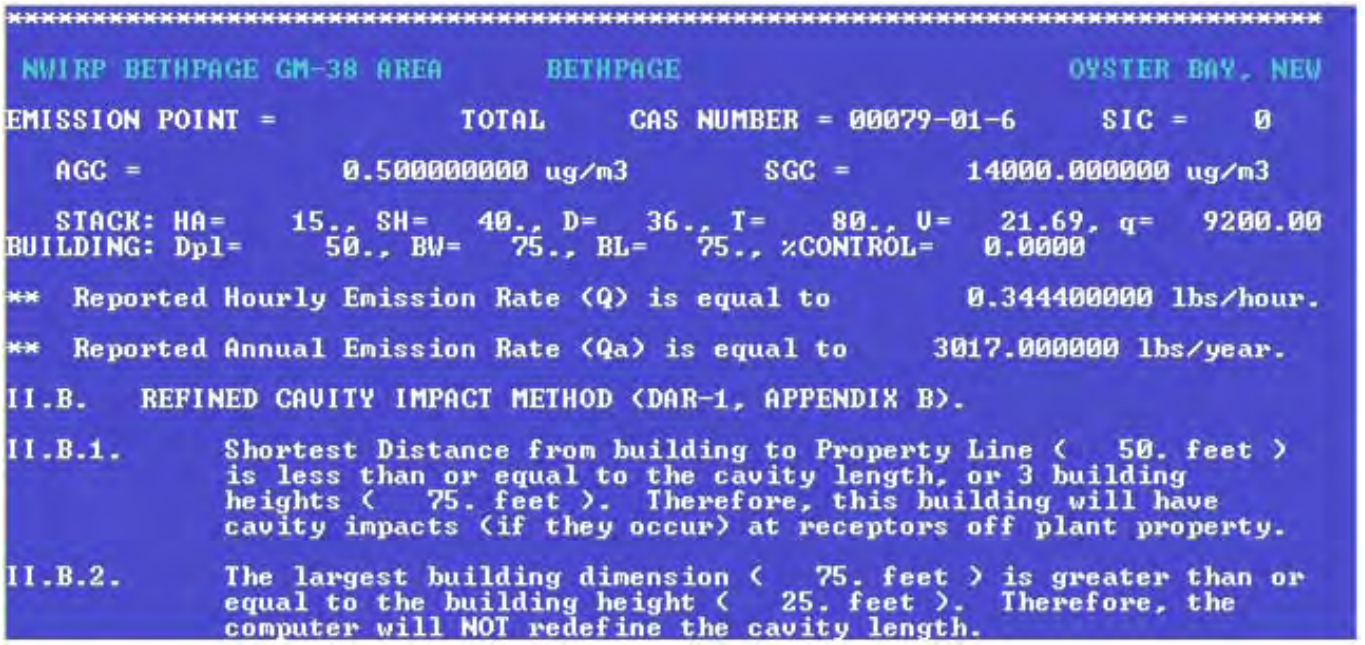
		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) % OF SGC	ACTUAL ANNUAL % OF AGC	POTENTIAL ANNUAL % OF AGC	ACTUAL ANNUAL % OF AGC
00075-01-4	0.11000000	0.0005	0.0000	13.3889	13.4948
00079-01-6	0.50000000	0.7757	0.0000	390.1734	390.6266
00127-18-4	1.00000000	7.3852	0.0000	132.6635	132.8415
00156-59-2	63.00000000	0.0000	0.0000	0.2320	0.2322
00540-59-0	63.00000000	0.0000	0.0000	0.2320	0.2322
SUMMARY TOTALS		8.1614	0.0000	536.6897	537.4274

III. Contaminant Impact Summary of TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

CONTAMINANT IMPACT SUMMARY OF DAR-1 ANALYSIS 9/ 8/11
Page 1

		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) ug/m3	ACTUAL ANNUAL ug/m3	POTENTIAL ANNUAL ug/m3	ACTUAL ANNUAL ug/m3
00075-01-4	0.11000000	0.81988204	0.00000000	0.01472780	0.01484433
00079-01-6	0.50000000	108.60282900	0.00000000	1.95086694	1.95313276
00127-18-4	1.00000000	73.85244750	0.00000000	1.32663476	1.32841504
00156-59-2	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693
00540-59-0	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693

IV. Contaminant Impact Summary Step by Step Menu for TCE:



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**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                              OYSTER BAY, NEW

EMISSION POINT =           TOTAL     CAS NUMBER = 00079-01-6     SIC =    0

   AGC =            0.500000000 ug/m3        SGC =       14000.000000 ug/m3

   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000

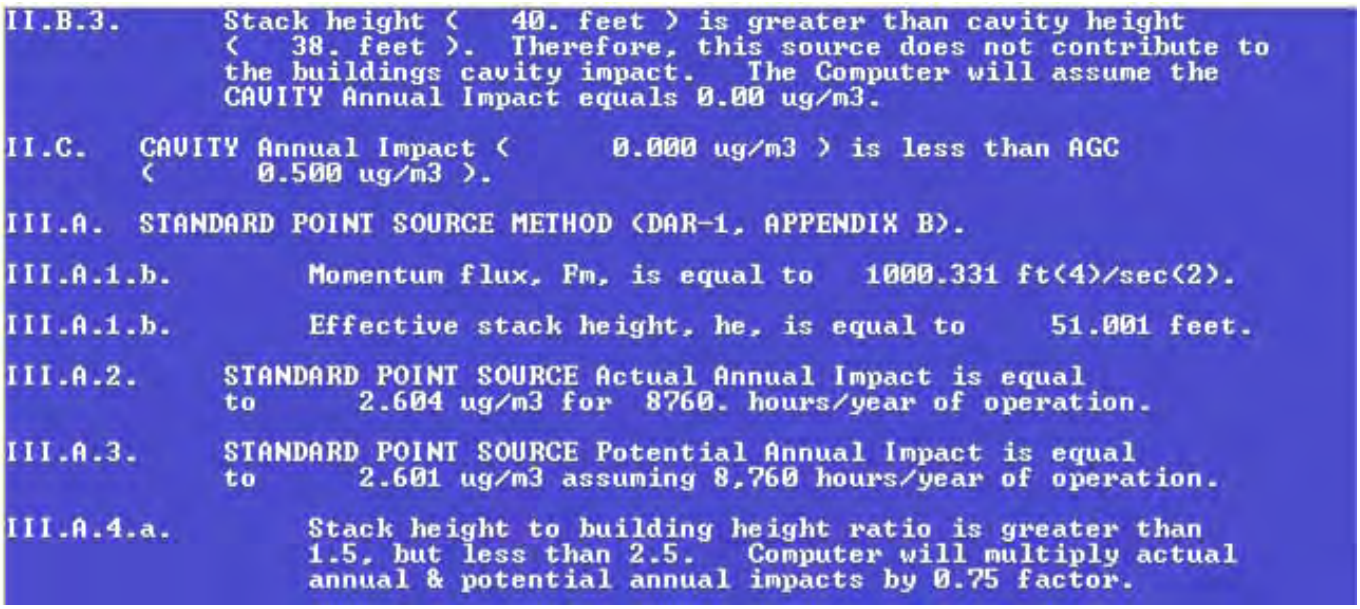
**  Reported Hourly Emission Rate (Q) is equal to         0.344400000 lbs/hour.

**  Reported Annual Emission Rate (Qa) is equal to     3017.000000 lbs/year.

II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).

II.B.1.       Shortest Distance from building to Property Line (   50. feet )
              is less than or equal to the cavity length, or 3 building
              heights (   75. feet ).  Therefore, this building will have
              cavity impacts (if they occur) at receptors off plant property.

II.B.2.       The largest building dimension (   75. feet ) is greater than or
              equal to the building height (   25. feet ).  Therefore, the
              computer will NOT redefine the cavity length.
```



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II.B.3.       Stack height (   40. feet ) is greater than cavity height
              (   38. feet ).  Therefore, this source does not contribute to
              the buildings cavity impact.   The Computer will assume the
              CAVITY Annual Impact equals 0.00 ug/m3.

II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      0.500 ug/m3 ).

III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).

III.A.1.b.          Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).

III.A.1.b.          Effective stack height, he, is equal to     51.001 feet.

III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to       2.604 ug/m3 for  8760. hours/year of operation.

III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to       2.601 ug/m3 assuming 8,760 hours/year of operation.

III.A.4.a.          Stack height to building height ratio is greater than
                    1.5, but less than 2.5.   Computer will multiply actual
                    annual & potential annual impacts by 0.75 factor.
```
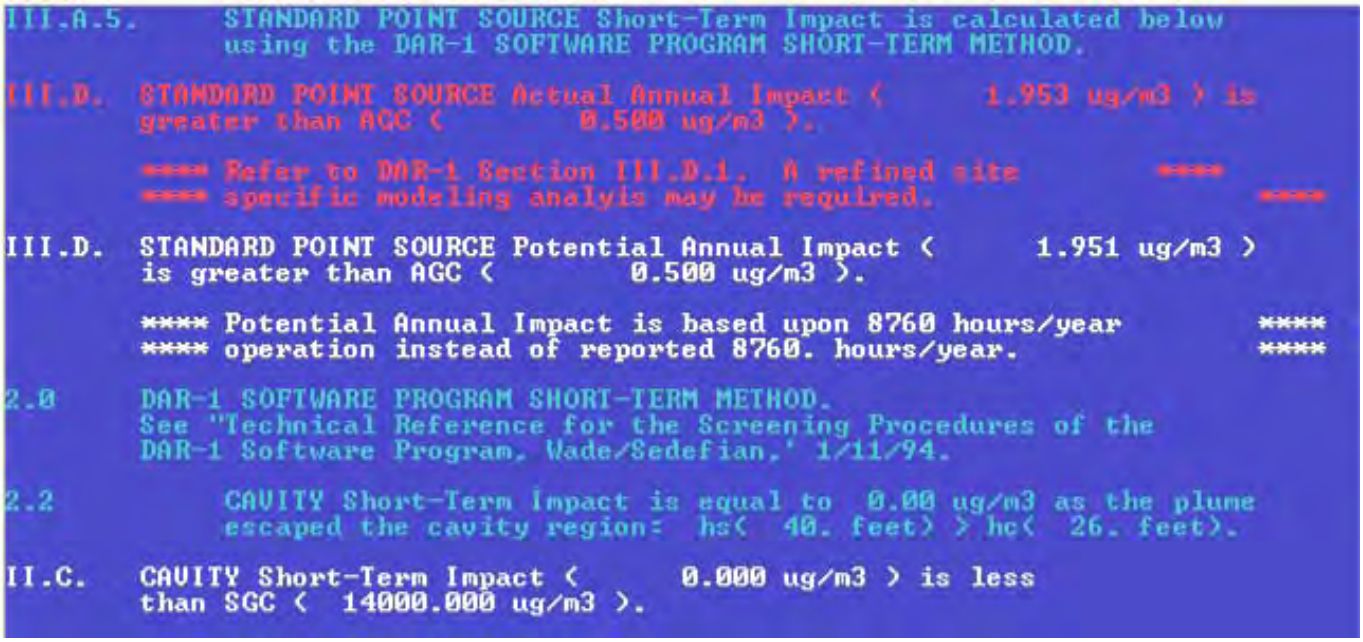
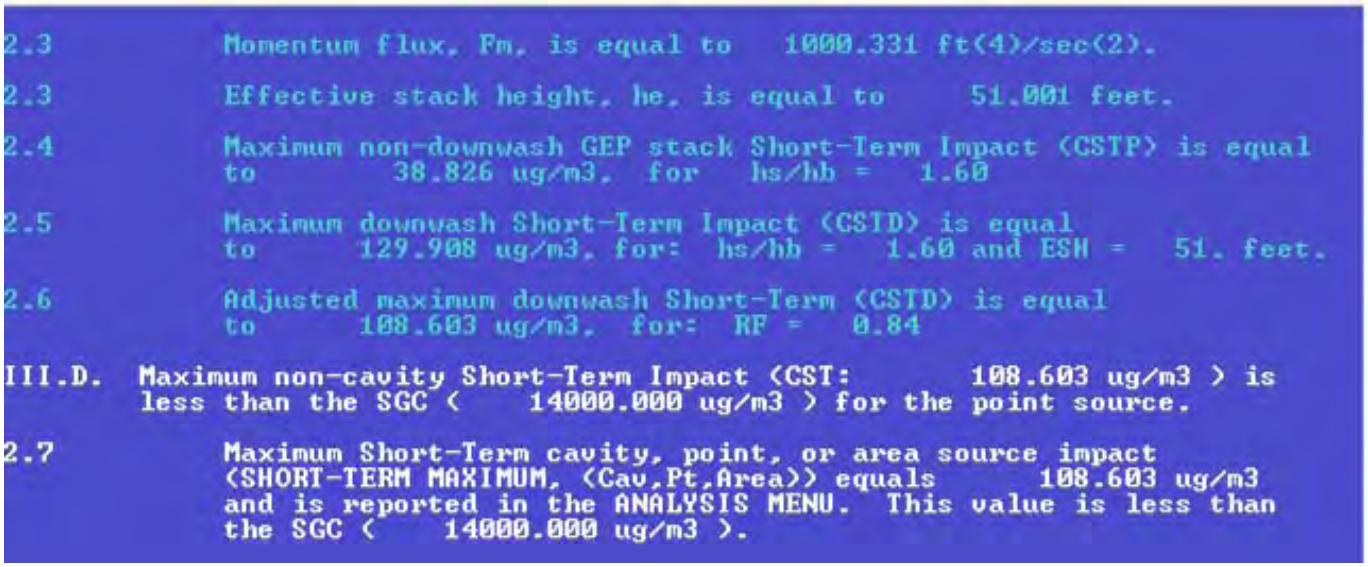


III.A.5. STANDARD POINT SOURCE Short-Term Impact is calculated below using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
III.D. STANDARD POINT SOURCE Actual Annual Impact (1.953 ug/m3) is greater than AGC (0.500 ug/m3).
**** Refer to DAR-1 Section III.D.1. A refined site ****
**** specific modeling analyis may be required. ****
III.D. STANDARD POINT SOURCE Potential Annual Impact (1.951 ug/m3) is greater than AGC (0.500 ug/m3).
**** Potential Annual Impact is based upon 8760 hours/year ****
**** operation instead of reported 8760. hours/year. ****
2.0 DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
See "Technical Reference for the Screening Procedures of the DAR-1 Software Program, Wade/Sedefian," 1/11/94.
2.2 CAVITY Short-Term Impact is equal to 0.00 ug/m3 as the plume escaped the cavity region: hs(40. feet) > hc(26. feet).
II.C. CAVITY Short-Term Impact (0.000 ug/m3) is less than SGC (14000.000 ug/m3).


2.3 Momentum flux, Fm, is equal to 1000.331 ft(4)/sec(2).
2.3 Effective stack height, he, is equal to 51.001 feet.
2.4 Maximum non-downwash GEP stack Short-Term Impact (GSTP) is equal to 38.826 ug/m3, for hs/hb = 1.60
2.5 Maximum downwash Short-Term Impact (GSTD) is equal to 129.908 ug/m3, for: hs/hb = 1.60 and ESH = 51. feet.
2.6 Adjusted maximum downwash Short-Term (CSTD) is equal to 108.603 ug/m3, for: RF = 0.84
III.D. Maximum non-cavity Short-Term Impact (CST: 108.603 ug/m3) is less than the SGC (14000.000 ug/m3) for the point source.
2.7 Maximum Short-Term cavity, point, or area source impact (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals 108.603 ug/m3 and is reported in the ANALYSIS MENU. This value is less than the SGC (14000.000 ug/m3).

V. Contaminant Impact Summary Step by Step Menu for PCE:

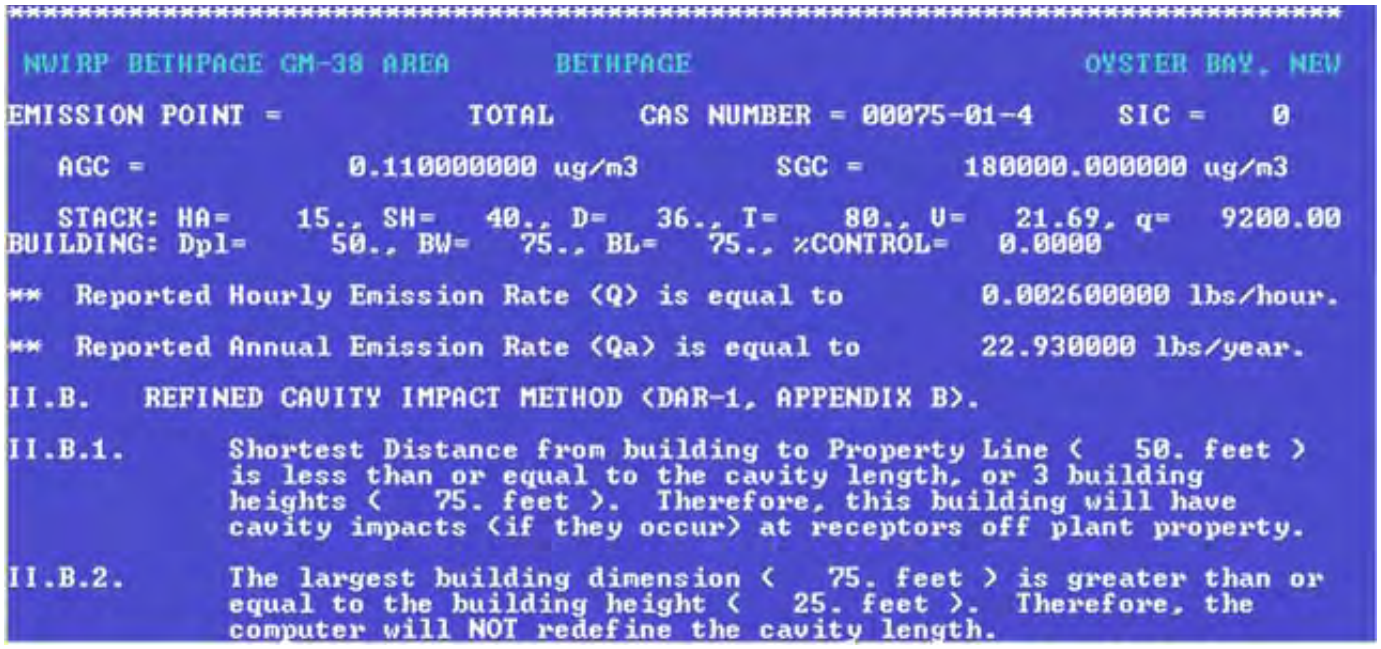
```
**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00127-18-4     SIC =    0
   AGC =            1.000000000 ug/m3        SGC =         1000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
**  Reported Hourly Emission Rate (Q) is equal to         0.234200000 lbs/hour.
**  Reported Annual Emission Rate (Qa) is equal to     2052.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.       Shortest Distance from building to Property Line (   50. feet )
              is less than or equal to the cavity length, or 3 building
              heights (   75. feet ).  Therefore, this building will have
              cavity impacts (if they occur) at receptors off plant property.
II.B.2.       The largest building dimension (   75. feet ) is greater than or
              equal to the building height (   25. feet ).  Therefore, the
              computer will NOT redefine the cavity length.
```

```
II.B.3.       Stack height (   40. feet ) is greater than cavity height
              (   38. feet ).  Therefore, this source does not contribute to
              the buildings cavity impact.   The Computer will assume the
              CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      1.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.
III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to      1.771 ug/m3 for  8762. hours/year of operation.
III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to      1.769 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

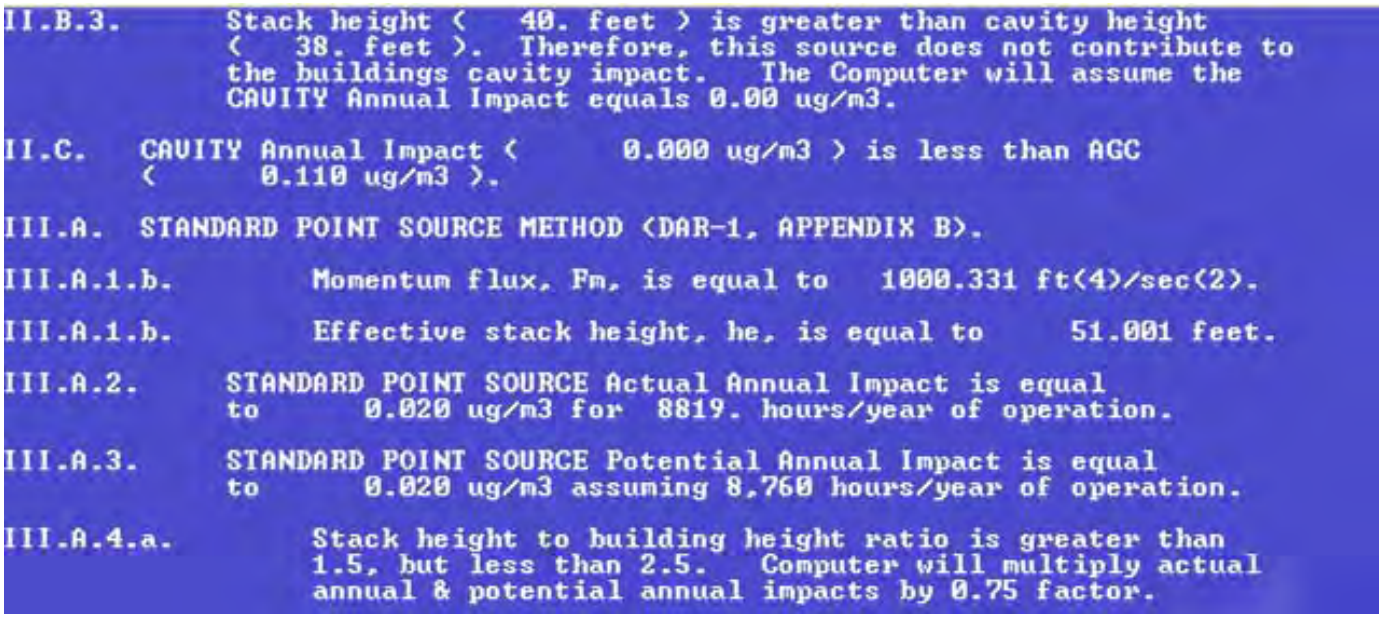
```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      1.328 ug/m3 ) is
        greater than AGC (        1.000 ug/m3 ).

        **** Refer to DAR-1 Section III.D.1.  A refined site          ****
        **** specific modeling analyis may be required.                ****

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      1.327 ug/m3 )
        is greater than AGC (        1.000 ug/m3 ).

        ***** Potential Annual Impact is based upon 8760 hours/year        *****
        ***** operation instead of reported 8762. hours/year.              *****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian," 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact (      0.000 ug/m3 ) is less
        than SGC (   1000.000 ug/m3 ).
```

```
2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).

2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to        26.403 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to        88.340 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to        73.852 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST:        73.852 ug/m3 ) is
        less than the SGC (     1000.000 ug/m3 ) for the point source.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals       73.852 ug/m3
              and is reported in the ANALYSIS MENU.  This value is less than
              the SGC (     1000.000 ug/m3 ).
```

VI. Contaminant Impact Summary Step by Step Menu for Vinyl Chloride:



```
**********************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                    OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00075-01-4     SIC =    0
   AGC =            0.110000000 ug/m3        SGC =      180000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
**  Reported Hourly Emission Rate (Q) is equal to        0.002600000 lbs/hour.
**  Reported Annual Emission Rate (Qa) is equal to       22.930000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```



```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      0.110 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.       Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.       Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.020 ug/m3 for  8819. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.020 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.       Stack height to building height ratio is greater than
                 1.5, but less than 2.5.   Computer will multiply actual
                 annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      0.015 ug/m3 ) is
        less than AGC (        0.110 ug/m3 ).

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      0.015 ug/m3 )
        is less than AGC (        0.110 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year        ****
        **** operation instead of reported 8819. hours/year.              ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian," 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact (      0.000 ug/m3 ) is less
        than SGC ( 180000.000 ug/m3 ).

2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to         0.293 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to         0.981 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to         0.820 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST:         0.820 ug/m3 ) is
        less than the SGC (   180000.000 ug/m3 ) for the point source.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals         0.820 ug/m3
              and is reported in the ANALYSIS MENU.  This value is less than
              the SGC (   180000.000 ug/m3 ).
```

VII. Contaminant Impact Summary Step by Step Menu for cis 1,2-Dichloroethene:

```
**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                              OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00156-59-2     SIC =    0
   AGC =          63.000000000 ug/m3        SGC =           0.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=    50., BW=   75., BL=   75., %CONTROL=   0.0000
**  Reported Hourly Emission Rate (Q) is equal to          0.025800000 lbs/hour.
**  Reported Annual Emission Rate (Qa) is equal to       226.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```

```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (     63.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.       Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.       Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.195 ug/m3 for  8760. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.195 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.       Stack height to building height ratio is greater than
                 1.5, but less than 2.5.   Computer will multiply actual
                 annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      0.146 ug/m3 ) is
        less than AGC (       63.000 ug/m3 ).

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      0.146 ug/m3 )
        is less than AGC (       63.000 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year        ****
        **** operation instead of reported 8760. hours/year.              ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact is equal to       0.000 ug/m3.
        There is no SGC for this contaminant.

2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to         2.909 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to         9.732 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to         8.136 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST) equals        8.136 ug/m3
        for the point source.  There is no SGC for this contaminant.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals        8.136 ug/m3
              and is reported in the ANALYSIS MENU.
```

VIII. Contaminant Impact Summary Step by Step Menu for 1,2-Dichloroethene (total):

```
**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00540-59-0     SIC =    0
   AGC =          63.000000000 ug/m3        SGC =          0.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=    50., BW=   75., BL=   75., %CONTROL=   0.0000
**  Reported Hourly Emission Rate (Q) is equal to       0.025800000 lbs/hour.
**  Reported Annual Emission Rate (Qa) is equal to     226.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```

```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (     63.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.       Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.       Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.195 ug/m3 for  8760. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.195 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.       Stack height to building height ratio is greater than
                 1.5, but less than 2.5.   Computer will multiply actual
                 annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.     STANDARD POINT SOURCE Short-Term Impact is calculated below
             using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.   STANDARD POINT SOURCE Actual Annual Impact (      0.146 ug/m3 ) is
         less than AGC (       63.000 ug/m3 ).

III.D.   STANDARD POINT SOURCE Potential Annual Impact (      0.146 ug/m3 )
         is less than AGC (       63.000 ug/m3 ).

         **** Potential Annual Impact is based upon 8760 hours/year        ****
         **** operation instead of reported 8760. hours/year.              ****

2.0      DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
         See "Technical Reference for the Screening Procedures of the
         DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2          CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
             escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.    CAVITY Short-Term Impact is equal to       0.000 ug/m3.
         There is no SGC for this contaminant.

2.3          Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3          Effective stack height, he, is equal to     51.001 feet.

2.4          Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
             to          2.909 ug/m3.  for   hs/hb =   1.60

2.5          Maximum downwash Short-Term Impact (CSTD) is equal
             to         9.732 ug/m3. for:  hs/hb =   1.60 and ESH =   51. feet.

2.6          Adjusted maximum downwash Short-Term (CSTD) is equal
             to         8.136 ug/m3.  for:  RF =   0.84

III.D.   Maximum non-cavity Short-Term Impact (CST) equals        8.136 ug/m3
         for the point source.  There is no SGC for this contaminant.

2.7          Maximum Short-Term cavity, point, or area source impact
             (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals          8.136 ug/m3
             and is reported in the ANALYSIS MENU.
```

IX. AGCs and SGCs for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

AGCs & SGCs — 9/ 8/11 — Page 1

CAS NUMBER	CONTAMINANT NAME	SGC ug/m3	HOW	AGC ug/m3	HOW	TOX	CODES
00075-01-4	VINYL CHLORIDE	180000.00000	D	0.110000000	E	H	U HA
00079-01-6	TRICHLOROETHYLENE	14000.00000	Z	0.500000000	D	M	U HB
00127-18-4	TETRACHLOROETHYLENE	1000.00000	H	1.000000000	H	M	U HI
00156-59-2	DICHLOROETHYLENE,cis	0.00000		63.000000000	D	M	
00540-59-0	DICHLOROETHYLENE, 12	0.00000		63.000000000	D	M	

X. Contaminant Emissions Summary for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):'

CONTAMINANT EMISSIONS SUMMARY 9/ 8/11
Page 1

CAS NUMBER	CONTAMINANT NAME	NUM. OF EPs PER CONTAM.	EMISSIONS (lbs/hour)	EMISSIONS (lbs/year)
00075-01-4	VINYL CHLORIDE	1	0.0026000	22.93000
00079-01-6	TRICHLOROETHYLENE	1	0.3444000	3017.00000
00127-18-4	TETRACHLOROETHYLENE	1	0.2342000	2052.00000
00156-59-2	DICHLOROETHYLENE,cis	1	0.0258000	226.00000
00540-59-0	DICHLOROETHYLENE, 12	1	0.0258000	226.00000
SUMMARY TOTALS		5	0.6328000	5543.93000

XI. Meter Grid Modeling Results for Maximum Annual Concentrations of TCE, within 25 meters:

CONCENTRATIONS x 10 (-2) (ug/m3) for 00079-01-6 09/08/11 13:17:58
AGC = 0.500000000 ug/m3

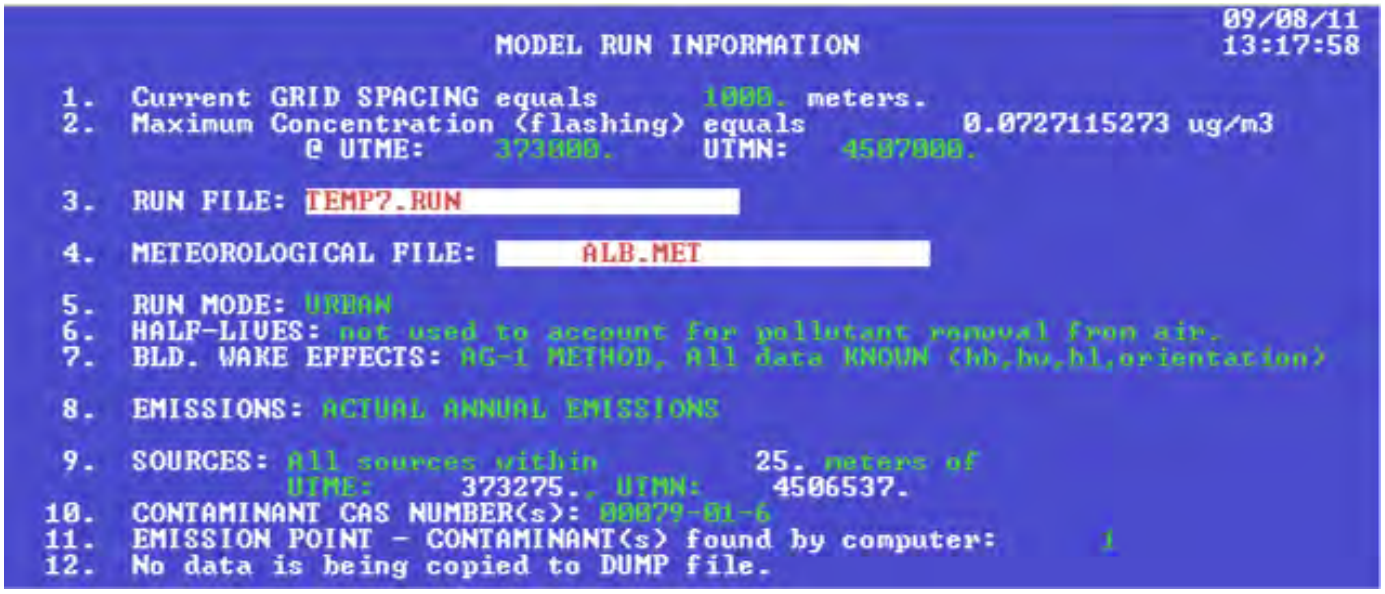
UTMN ▼ \ UTME ▶	367000.	368000.	369000.	370000.	371000.	372000.	373000.	374000.	375000.	376000.	377000.	378000.	379000.
4511000.	0.04		0.06		0.08		0.14		0.23		0.32		0.41
4510000.	0.03		0.05		0.08		0.13		0.25		0.43		0.60
4509000.	0.02		0.03		0.06		0.11		0.24		0.58		1.01
4508000.	0.02		0.03		0.04		0.06		0.18		0.62		2.16
4507000.	0.02		0.03		0.04		0.06		0.11		0.26		7.27
4506000.	0.03		0.03		0.05		0.07		0.13		0.33		2.58
4505000.	0.03		0.04		0.05		0.08		0.20		0.45		0.94
4504000.	0.03		0.04		0.07		0.12		0.20		0.22		0.47

UTMN ▼ \ UTME ▶	380000.	381000.	382000.	383000.	384000.	385000.	386000.	387000.	388000.	389000.	390000.	391000.	392000.
4511000.	0.30		0.14		0.10		0.08		0.06		0.05		0.04
4510000.	0.40		0.17		0.12		0.09		0.07		0.06		0.04
4509000.	0.52		0.22		0.14		0.11		0.08		0.06		0.04
4508000.	0.64		0.31		0.19		0.13		0.11		0.09		0.06
4507000.	1.43		0.60		0.34		0.22		0.15		0.12		0.08
4506000.	2.99		1.12		0.51		0.30		0.20		0.14		0.10
4505000.	0.81		0.60		0.45		0.33		0.23		0.16		0.12
4504000.	0.43		0.33		0.27		0.24		0.20		0.16		0.13

TOP 100 CONTRIBUTORS TO MAXIMUM CONCENTRATION FOR 00079-01-6 09/08/11 13:17:58
@ UTME: 373000. UTMN: 4507000.

Emission Point	Facility Name (shortened)	EP DIR	Distance to Max.(m)	CONC. ug/m3	Percent of Max.
TOTAL	NWIRP BETHPAGE GM-38 AREA	SSE	539.	0.727E-01	100.000
TOTAL OF ALL 1 CONTRIBUTORS				0.727E-01	100.000

XII. ISCLT Model Run Information, within 25 meters:



APPENDIX C

FIELD LOGS

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW i - MW 2 1

Date: 09/12/17
Sampler: E. Seiler + S. George
PID: ------

Start Time: 1145 End Time: 1205
Well Construction: 4"
Depth to Water: 40.53'
Well Depth: 435
Water Column: 394.47
Total Volume Removed (L): 3.0 L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
~~YSI~~ YSI	~~556~~ ProDSS	16M101728
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID# 711

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1145	—	200	40.56	16.4	4.85	168.8	0.26	190.4	1.61	Clear
1150	1L	200	40.60	16.3	4.47	171.9	0.34	208.7	0.52	Clear
1155	2L	200	40.59	16.1	4.48	171.8	0.26	212.1	0.28	Clear
1200	3L	200	40.58	16.0	4.50	172.6	0.22	199.8	0.41	Clear

Acceptance Criteria:	<0.3ft	3%	±0.1	3%	10%	± 10mv	10%

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1205	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1205	RW i -MW 1-091217	500 mL PL	1	HNO_3	Hg (245.1)
1205	RW1-mw1-091217	250 mL PL	1	---	TSS (SM2540D)

Comments

Salinity @ 0.05

Signature

9/12/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 - MW 2

Date: 09/12/17
Sampler: S. GEORGES
PID: ------

Start Time: 1320 End Time: 1415
Well Construction: 4"
Depth to Water: 42.85
Well Depth: 495
Water Column: 452.15
Total Volume Removed (L): 8.0 L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	~~556~~ ProDSS	16M101728
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1320	—	200	42.79	17.4	4.84	96.0	1.50	196.8	—	
1335	1L	200	42.75	16.8	4.70	95.3	0.31	212.4	1.62	Clear
1340	2L	200	42.80	16.6	4.73	95.0	0.05	213.9	2.32	Clear
1345	3L	200	42.85	16.9	4.71	94.9	0.00	217.9	2.36	Clear
1350	4L	200	42.83	16.3	4.71	94.8	0.00	211.5	1.87	Clear
1355	5L	200	42.65	16.6	4.72	95.4	0.00	210.7	—	—
1405	6L	200	42.80	16.0	4.80	95.5	0.00	194.0	2.15	Clear
1410	7L	200	42.78	16.0	4.77	96.2	0.00	199.0	1.81	Clear
1415	8L	200	42.72	15.9	4.79	96.5	0.00	199.7	1.95	Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1415	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1415	RW 3 -MW2 - 091217	500 mL PL	1	HNO_3	Hg (245.1)
1415		250 mL PL	1	---	TSS (SM2540D)

Comments

@ 1325 - Air canister empty, replacing w/ one @ plant. Salinity @ 0.11
@ 1330 - Pump restarted.
@ 1357 - Air canister empty, replacing w/ spare. — @ 1400 - restarted pump

Signature

09.12.17
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 - MW 1

Date: 09/12/17
Sampler: E. Seiler
PID: ------

Start Time: 1325 End Time: 1405
Well Construction: 4"
Depth to Water: 41.23
Well Depth: 350
Water Column: 308.77
Total Volume Removed (L): 8.0 L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	14F100056
LaMotte	2020e	903-1811
QED	MP15	27717
Marschalk Bladder Pump	24"	ID# ~~27717~~ 711

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1325	—	200	41.15	21.33	5.02	0.133	6.26	118.3	2.28	clear
1330	1.0	200	41.14	19.92	4.27	0.129	5.50	134.6	1.58	"
1335	2.0	200	41.12	19.62	4.20	0.129	5.39	126.0	16.50	" w/ specks
1340	3.0	200	41.13	19.49	4.36	0.132	5.71	107.4	23.60	" "
1345	4.0	200	41.13	19.53	4.40	0.134	5.83	100.5	19.9	" "
1350	5.0	200	41.11	19.65	4.50	0.135	5.96	92.7	16.6	" "
1355	6.0	200	41.11	19.64	4.51	0.136	6.10	90.7	13.8	clear
1400	7.0	200	41.10	19.51	4.50	0.137	6.04	91.0	13.3	"
1405	8.0	200	41.11	19.70	4.49	0.137	6.05	90.4	12.1	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1410	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1410	RW 3 -MW 1 - 091217	500 mL PL	1	HNO_3	Hg (245.1)
1410		250 mL PL	1	---	TSS (SM2540D)

Comments

E. Seiler
Signature

9/12/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW3 - MW3

Date: 09/12/17
Sampler: E. Seiler
PID: ------

Start Time: 1525 End Time: _____
Well Construction: 4"
Depth to Water: 42.30
Well Depth: 340
Water Column: 297.7
Total Volume Removed (L): 7.0L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	14F100056
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1535	—	200	42.30	17.20	4.37	0.130	5.62	49.0	3.98	clear
1540	1.0	200	42.30	17.79	4.29	0.130	3.04	49.9	4.56	"
1545	2.0	200	42.29	18.42	4.77	0.131	1.92	24.8	6.86	"
1550	3.0	200	42.27	18.61	4.90	0.131	1.62	17.1	8.83	"
1555	4.0	200	42.27	18.61	4.86	0.132	1.54	19.3	10.08	"
1600	5.0	200	42.27	18.77	4.83	0.132	1.50	19.4	10.27	"
1605	6.0	200	42.27	18.97	4.85	0.133	1.51	19.5	10.76	"
1610	7.0	200	42.25	18.99	4.83	0.133	1.47	20.6	11.20	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1620	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1620	RW 3-MW3-091217	500 mL PL	1	HNO_3	Hg (245.1)
1620		250 mL PL	1	---	TSS (SM2540D)

Comments

*gas ran out just before sample was collected, wait for new gas canister, tank switched @ 1640

E. Seiler
Signature

9/12/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 - MW 4

Date: 09/12/17
Sampler: S. Getchell
PID: ------

Start Time: 1530 End Time: 1620
Well Construction: 4"
Depth to Water: 43.19
Well Depth: ~~451.81~~ 495
Water Column: 451.81
Total Volume Removed (L): 10.0L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	~~556~~ ProDSS	16M101728
LaMotte	2020e	903-1911
QED	MP15	
Marschalk Bladder Pump	24" ID#	711

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1535	1L	200	43.21	15.9	4.75	120.5	5.16	193.3	0.65	Clear
1540	2L	200	43.19	15.8	4.67	126.4	2.21	196.3	0.69	Clear
1545	3L	200	43.11	15.7	4.67	125.2	0.81	198.6	2.21	Clear
1550	4L	200	43.08	15.6	4.77	127.3	0.63	194.6	2.14	Clear
1555	5L	200	43.05	15.6	4.79	130.7	0.34	194.8	2.74	Clear
1600	6L	200	43.03	15.5	4.83	133.8	0.23	195.6	2.82	Clear
1605	7L	200	43.03	15.5	4.87	133.9	0.15	195.0	2.74	Clear
1610	8L	200	43.08	15.5	4.86	133.5	0.09	196.3	2.71	Clear
1615	9L	200	43.03	15.4	4.86	133.6	0.05	197.8	2.79	Clear
1620	10L	200	43.05	15.4	4.87	134.6	0.02	198.7	2.74	Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1620	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1620	RW 3 -MW 4 - 091217	500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

- Unclear why DTW is decreasing vs. increasing. - Leaving probe in to monitor level
Steady flux @ 43.03 - 43.08
Salinity @ 0.00.

Signature

09.12.17
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: ~~RW~~ ~~MW~~ TP-1

Date: 09/13/17
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 0815 End Time: _____
Well Construction: 4"
Depth to Water: 39.05
Well Depth: 470
Water Column: 430.95
Total Volume Removed (L): 5.0L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	16M101728
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0825	–	200	39.05	14.2	5.77	133.7	8.34	229.5	0.02	Clear
0830	1.0	200	39.08	14.1	5.65	146.5	8.30	240.7	0.70	"
0835	2.0	200	39.09	14.1	5.66	148.7	8.33	243.7	0.16	"
0840	3.0	200	39.09	14.0	5.65	149.0	8.34	245.4	0.28	"
0845	4.0	200	39.09	14.1	5.65	148.9	8.33	247.5	0.13	"
0850	5.0	200	39.09	14.1	5.65	148.9	8.32	249.6	0.19	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
	NWIRP-GM-38-GW-TP-1-091317	40 mL CG	3	---	TCL VOCs (624)
0855	~~RW~~ ~~MW~~	500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Salinity @ 0.06

Signature

9/13/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 2 - MW 1

Date: 09/ 13/17
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 0940 End Time: _____
Well Construction: 4"
Depth to Water: 43.33
Well Depth: 510
Water Column: 466.67
Total Volume Removed (L): 11.0 L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	16M101728 → 14F100056
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0950	—	200	43.36	15.0	8.03	169.2	1.38	182.3	6.23	clear
0955	1.0	200	43.35	15.0	8.21	169.9	0.56	155.3	7.83	"
1000	2.0	200	43.37	15.0	8.33	169.4	0.33	132.9	4.72	"
1005	3.0	200	43.37	15.0	8.24	169.1	0.37	-90.1	4.21	"
1010	4.0	200	43.37	15.0	6.81	197.0	0.33	-24.8	4.38	"
1015	5.0	200	43.38	15.0	6.36	221.4	0.34	-2.0	4.77	"
*1020	6.0	200	43.38	15.34	7.65	228.0	1.40	-61.9	4.29	"
1025	7.0	200	43.35	15.89	7.01	226.0	0.35	-47.9	3.33	"
1030	8.0	200	43.37	16.09	7.08	227.0	0.29	-56.2	3.50	"
1035	9.0	200	43.36	16.20	7.10	227.0	1.90	-56.3	3.41	"
1040	10.0	200	43.36	16.26	7.06	226.0	1.76	-54.1	3.65	"
1045	11.0	200	43.36	16.37	7.03	226.0	1.64	-53.5	3.19	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1050	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1050	RW 2 -MW 1 - 091317	500 mL PL	1	HNO_3	Hg (245.1)
1050		250 mL PL	1	---	TSS (SM2540D)

Comments

* switched to other YSI,

Signature

9/13/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW1 - MW 3

Date: 09/13/17
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1140 End Time: _____
Well Construction: 4"
Depth to Water: 33.72
Well Depth: 435.
Water Column: 401.28
Total Volume Removed (L): 5.0L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	14F100056
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1148	—	200	33.72	18.20	5.62	0.176	4.18	28.8	4.45	clear
1153	1.0	200	33.74	15.42	4.78	0.174	0.58	65.1	10.71	"
1158	2.0	200	33.61	15.10	4.83	0.173	0.42	55.1	11.23	"
1203	3.0	200	33.46	14.95	5.00	0.173	0.39	40.6	10.17	"
1208	4.0	200	33.36	14.72	5.03	0.173	0.34	34.5	12.00	"
1213	5.0	200	33.29	14.73	5.08	0.173	0.32	27.2	11.90	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1215	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1215	RW 1 -MW - 3 - 091317	500 mL PL	1	HNO_3	Hg (245.1)
1215		250 mL PL	1	---	TSS (SM2540D)

Comments

_____

_____

_____

Signature

9/13/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 ~~MW~~

Date: 09/13/17
Sampler: S. Goldberg ? E. Seiler
PID: ------

Start Time: 1355 End Time: _____
Well Construction: ~~4"~~
Depth to Water: NA
Well Depth: NA
Water Column: NA
Total Volume Removed (L): _____
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	26A8A8
LaMotte	2020e	22805 - 26012
QED	~~MP15~~	
Marschalk Bladder Pump	~~24"~~	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1355	—	—	—	16.93	5.63	94	2.27	2.7	4.77	Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1355	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1355	RW 3 ~~MW~~	500 mL PL	1	HNO_3	Hg (245.1)
1355		250 mL PL	1	---	TSS (SM2540D)

Comments

GRAB SAMPLE

Signature

9/13/2017
Date

KGS

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38 **Date:** 09/12/17 **Weather:** Sonny, humid, ≈ 70°F

Calibrated By: Stefano Georges **Instrument:** YSI 556 **Serial Number:** 14F100056

Parameters	Morning Calibration Time: 1120	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
~~Conductivity~~ ORP 240 mV ~~1413~~ (µS/cm°)	249.2 → 240.0	24.18°C		Exp: 1/31/2021 Lot #: 9674
pH (7)	6.86 → 7.00	24.47°C		Exp: 12/31/2018 Lot #: 6GL570
pH (4)	3.76 → ~~4.0~~ 3.98 ~~EAS~~	23.86°C		Exp: 12/31/2018 Lot: 6GL126
pH (10)	9.97 → 10.00	24.23°C		Exp: 12/31/2018 Lot #: 6GL207
Conductivity ~~ORP~~ 1413 ~~240~~ (mv)	1.387 → 1.413	24.01°C		Exp: 12/31/2017 Lot #: 6GL243
Dissolved Oxygen (%)	93.1% → 100.2%	30.35°C		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	761.7			

pH Check (Every 3 hrs): (NJ only)

Time: Standard: NA Reading:

Time: Standard: NA Reading:

Time: Standard: NA Reading:

Signature: [signature]

Date: 09·14·17

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GMS **Date:** 9/13/2017 **Weather:** Sunny, some clouds, ≈ 60°F

Calibrated By: Ericka Seiler **Instrument:** YSI 556 **Serial Number:** 14F100C556

Parameters	Morning Calibration Time: 0740	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity (µS/cm°)	1.403 → 1.413	22.69°C		Exp: 1/31/2021 Lot #: 9674
pH (7)	6.98 → 7.00	23.88°C		Exp: 12/31/2018 Lot #: 6GL570
pH (4)	3.93 → 4.00	22.98°C		Exp: 12/31/2018 Lot #: 6GL126
pH (10)	10.01 → 10.00	23.04°C		Exp: 12/31/2018 Lot #: 6GL207
ORP (mv)	233.8 → 240.1	22.05°C		Exp: 12/31/2017 Lot #: 6GL243
Dissolved Oxygen (%)	133.9% → 99.8%	21.91°C		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	758.0			
Turbidity (NTU)				

Signature: Ericka Seiler Date: 9/13/2017

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38 **Date:** 09/12/17 **Weather:** Sunny, humid, ≈ 73°F

Calibrated By: Ericka Seider **Instrument:** ~~YSI 556~~ YSI ProDSS **Serial Number:** 16M101728

Parameters	Morning Calibration Time: 1048	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity 1413 (µS/cm°)	1403 → 1413	22.1°C		EXP: JAN 2018 LOT: 7GA718
pH (7)	7.02 → 7.01	21.9°C		EXP: 12/31/18 LOT: 6GL570
pH (4)	4.00 → 4.00	22.0°C		EXP: 1/31/18 LOT: 6GA048
pH (10)	10.03 → 10.03	22.1°C		EXP: 12/31/18 LOT: 6GL207
ORP 240 (mv)	235.3 → 240.0	21.7°C		EXP: 5/31/21 LOT: 0207
Dissolved Oxygen (%)	105.0% → 102.8%			N/A
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	~~780.5~~ 780.5			

pH Check (Every 3 hrs): (NJ only)

Time:	Time:	Time:
Standard: NA	Standard: NA	Standard: NA
Reading:	Reading:	Reading:

Signature: [signature] Date: 9/12/2017

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38 **Calibrated By:** Ericka Seiler

Instrument/Serial Number	Pre-Cal 1-AM (NTU)	Pre-Cal 1-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 1-AM (NTU)	Post-Cal 1-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date 9/12/2017
LaMotte 2020e 903 - [redacted]1811	1.20 ~~0.26~~	1.00	8.63	10.02					Time: 1040 &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Ericka Seiler Date: 9/12/2017

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38 **Calibrated By**: Ericka Seiler

Instrument/Serial Number	Pre-Cal 1-AM (NTU)	Pre-Cal 1-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 1-AM (NTU)	Post-Cal 1-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date 9/13/2017
LaMotte 2020e 2285-2612	1.03	0.98	9.50	9.47					Time: 0810 &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Ericka Seiler Date: 9/13/2017

CHAIN of CUSTODY

Page _1_ of _1_

ALS-Environmental
1565 Jefferson Rd. Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: KOMAN Government Solutions, LLC
180 Gordon Dr., Suite 110
Exton, PA, 19341

Project Manager: Stephane Roy

Telephone No.: 610-400-0622

Email: sroy@komangs.com

Project: **NWIRP Bethpage GM-38 Semi-annual LTM**

Method of Shipment: FedEx Priority Overnight

Special Detection Limit/Reporting:

Requires DOD QSM reporting.

Standard TAT (no more than 10 days).

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	TCL VOCs (624) -project specific	Mercury (245.1)	TSS (SM2540D)	1,4-dioxane
BP-GM-38-GW-RW1-MW1-091217		5		X			X		09/12/17	1205	3	1	1	X
BP-GM-38-GW-RW1-MW3-091317		5		X			X		09/13/17	1215	3	1	1	X
BP-GM-38-GW-RW2-MW1-091317		5		X			X		09/13/17	1050	3	1	1	X
BP-GM-38-GW-RW3-MW1-091217		5		X			X		09/12/17	1410	3	1	1	X
BP-GM-38-GW-RW3-MW2-091217		5		X			X		09/12/17	1415	~~3~~	~~1~~	1	X
BP-GM-38-RW3-MW-3-DUP-091217		5		X			X		09/12/17	—	3	1	1	X
BP-GM-38-GW-RW3-MW3-091217		13		X			X		09/12/17	1020	~~9~~	~~3~~	1	X
BP-GM-38-GW-RW3-MW4-091217		5		X			X		09/12/17	1620	3	1	1	X
BP-GM-38-GW-TP1-091317		5		X			X		09/13/17	0855	3	1	1	X
BP-GM-38-RW3-091317		5		X			X		09/13/17	1355	3	1	1	X
BP-GM-38-FB-091317		4		X			X		09/13/17	1300	3	1		
BP-GM-38-TB-		3		X						X	3			

~~MS/MSD for VOCs, Hg only~~

MS/MSD for VOC, Hg only

Sample Received Intact: Yes No

Temperature received: (Ice) No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Relinquished by	Date 9.15.17	Time 1500	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory — Date 9/14/17 Time 0940

Lab Work No.

R1708649 5
KOMAN Government Solutions, LLC
NWIRP Bethpage GM-38 Semi-Annual LTM

APPENDIX D

DATA VALIDATION REPORTS

VOLATILE ORGANIC COMPOUNDS
USEPA Region II –Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-807

SDG #: R1708649

Client: KOMAM Government Solutions, LLC

Date: 10/12/2017

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples, one (1) trip blank and one (1) field blank analyzed for Volatiles by EPA Method 624.

2. The samples were collected on 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.

3. The USEPA Region II SOP HW-24, Revision No.: 2, 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B; USEPA National Functional Guidelines for Organic Data Review, EPA 540/R-99/008, October 1999; EPA Method 624 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Volatiles data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017	Water	Field Blank
BP-GM-38-TB	R1708649-012		Water	Trip Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were analyzed within 14days from sample collection. No qualifications were required.

2. All water samples were properly preserved (pH<2.0). No qualifications were required.

GC/MS Tuning:

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration:

1. Initial calibration curve analyzed on 9/18/2017 (R-MS-06) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

Continuing Calibration Verification (CCV):

1. CCV analyzed (R-MS-06) exhibited acceptable %Ds (≤20.0%) for all compounds. No qualifications were required.

Surrogates:

1. All surrogates %REC values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

Internal Standard (IS) Area Performance:

1. All samples exhibited acceptable area count for all three internal standards. No qualifications were required.

Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):

1. Method Blank (RQ1709469-04) analyzed on 9/18/2017 was free of contamination. No qualifications were required.

2. Field Blank (BP-GM-38-FB-091317) (R1708649-011) analyzed on 9/18/2017 contained toluene (0.21 µg/L). Results for toluene in the field samples was non-detect. No qualifications were required.

3. Trip Blank (BP-GM-38-TB) (R1708649-012) analyzed on 9/18/2017 was free of contamination. No qualifications were required.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):

1. Laboratory Control Sample (RQ1709469-03) was analyzed on 09/18/2017. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BP-GM-38-GW-RW3-MW3-091217	1,1,1-Trichloroethane	EPA 624	0.46	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.38	µg/l	19.0	None
BP-GM-38-GW-RW3-MW3-091217	1,1-Dichloroethane	EPA 624	2.5	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	2.2	µg/l	12.8	None
BP-GM-38-GW-RW3-MW3-091217	1,1-Dichloroethene	EPA 624	1	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.78	µg/l	24.7	None
BP-GM-38-GW-RW3-MW3-091217	Chloroform	EPA 624	0.35	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.27	µg/l	25.8	None
BP-GM-38-GW-RW3-MW3-091217	Cis-1,2-Dichloroethene	EPA 624	0.8	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.76	µg/l	5.1	None
BP-GM-38-GW-RW3-MW3-091217	Tetrachloroethene	EPA 624	0.31	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.44	µg/l	34.7	None
BP-GM-38-GW-RW3-MW3-091217	Trichloroethene	EPA 624	100	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	95	µg/l	5.1	None

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs):

1. All results were within the linear calibration range. No qualifications were required.

Target Compound Identification:

1. All Relative Retention Times (RRTs) of the reported compounds were within ± 0.06 RRT units of the standard (opening CCV).

2. Sample compound spectra were compared against the laboratory standard spectra.

3. No QC deviations were observed.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: R1708649.

MERCURY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-807

SDG #: R1708649

Client: KOMAM Government Solutions, LLC

Date: 10/12/2017

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples and one (1) field blank analyzed for Mercury by EPA Method 245.1.

2. The samples were collected on 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.

3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Mercury data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017	Water	Field Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were digested and analyzed within the 28 days holding times for Mercury. No qualifications were required.

Initial and Continuing Calibration Verification (ICV and CCV):

1 The correlation coefficient for Mercury calibration curve analyzed was ≥0.995. No qualifications were required.

2. All ICVs and CCVs %REC values were within the QC limits (80-120%). No qualifications were required.

Blanks (Method Blank, ICB and CCB):

1. All ICBs and CCBs were free of contamination. No qualifications were required.

2. Method Blank (PBW) digested on 9/21/2017 contained mercury (0.099 µg/L). Results for mercury in the field samples was non-detect. No qualifications were required.

Field Blank (FB) and Equipment Blank (EB):

1. Field Blank (BP-GM-38-FB-030117) (R1701946-011) analyzed on 9/21/2017 was free of contamination. No qualifications were required.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):

1. Mercury %REC in Laboratory Control Sample (LCSW) analyzed on 09/21/2017 was within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Laboratory Duplicate was performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All RPDs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). Both samples were reported as non-detects. No qualifications were required.

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) and Duplicate/Laboratory Duplicate:

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample BP-BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All %RECs and RPD were within the laboratory control limits. No qualifications were required.

Compound Quantitation and Reported Detection Limits:

1. All sample results were reported within the linear calibration range.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: R1708649.

GENERAL CHEMISTRY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-807

SDG #: R1708649

Client: KOMAM Government Solutions, LLC

Date: 10/12/2017

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples analyzed for Solids, Total Suspended (TSS) by SM20th 2540D.

2. The samples were collected on 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.

3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Solids, Total Suspended data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. No data points were qualified due to nonconformance of Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017		Field Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were analyzed within the 7 days holding times for Solids, Total Suspended. No qualifications were required.

Method Blank (MB), Storage Blank (SB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):

1. Method Blank (R1708649-MB) analyzed on 9/19/2017 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). RPD was ≤50.0% No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BP-GM-38-GW-RW3-MW3-091217	TSS	2540D	2.5	mg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	1.9	mg/l	27.3	None

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):

1. Laboratory Control Sample (R1708649-LCS) was analyzed on 09/19/2017. All %RECs were within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Sample Duplicate was performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All RPDs were within the laboratory control limits. No qualifications were required.

Compound Quantitation and Reported Detection Limits:

1. All sample results were reported within the linear calibration range.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: R1708649.

NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	7.7	UG_L		0.21	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	2.1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichloroethane	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloroform	0.58	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	cis-1,2-Dichloroethene	9.8	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Tetrachloroethene (PCE)	0.59	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	trans-1,2-Dichloroethene	0.35	UG_L	J	0.2	1

NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Trichloroethene (TCE)	110	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,1-Trichloroethane (TCA)	1.1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,2-Trichloroethane	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	4.4	UG_L		0.21	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.2	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloroform	0.69	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	cis-1,2-Dichloroethene	0.37	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Tetrachloroethene (PCE)	0.22	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Trichloroethene (TCE)	2.8	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	2540D	20170919	1	Solids, Total Suspended (TSS)	5.6	MG_L			
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.49	UG_L	J	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	6.6	UG_L		0.21	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.3	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichloroethane	0.71	UG_L	J	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloroform	2	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	cis-1,2-Dichloroethene	2.6	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Trichloroethene (TCE)	8.6	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	2540D	20170919	1	Solids, Total Suspended (TSS)	8.7	MG_L			
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Tetrachloroethene (PCE)	1.6	UG_L		0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Trichloroethene (TCE)	22	UG_L		0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	2540D	20170919	1	Solids, Total Suspended (TSS)	2.9	MG_L			
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,2-Trichloroethane	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	0.36	UG_L	J	0.21	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloroform	0.24	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	cis-1,2-Dichloroethene	1.3	UG_L		0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Tetrachloroethene (PCE)	0.43	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Trichloroethene (TCE)	140	UG_L		0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.38	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.2	UG_L		0.21	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	0.78	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloroform	0.27	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	cis-1,2-Dichloroethene	0.76	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Tetrachloroethene (PCE)	0.44	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Trichloroethene (TCE)	95	UG_L		0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	2540D	20170919	1	Solids, Total Suspended (TSS)	1.9	MG_L			
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.46	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1

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BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.5	UG_L		0.21	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L		0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloroform	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	cis-1,2-Dichloroethene	0.8	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Tetrachloroethene (PCE)	0.31	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Trichloroethene (TCE)	100	UG_L		0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1

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BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	2540D	20170919	1	Solids, Total Suspended (TSS)	2.5	MG_L			
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.6	UG_L		0.21	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	0.41	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloroform	0.21	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	cis-1,2-Dichloroethene	0.21	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Trichloroethene (TCE)	5.4	UG_L		0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	2540D	20170919	1	Solids, Total Suspended (TSS)	1.3	MG_L			
BP-GM-38-GW-TP1-091317	R1708649-009	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.29	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1.3	UG_L		0.21	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	0.36	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichloroethane	0.79	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromodichloromethane	0.53	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloroform	6.3	UG_L		0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	cis-1,2-Dichloroethene	11	UG_L		0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Trichloroethene (TCE)	54	UG_L		0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-RW3-091317	R1708649-010	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.83	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,2-Trichloroethane	0.45	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1.5	UG_L		0.21	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.4	UG_L		0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloroform	0.28	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	cis-1,2-Dichloroethene	1.9	UG_L		0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Tetrachloroethene (PCE)	0.65	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	2	Trichloroethene (TCE)	220	UG_L		0.4	2
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	2540D	20170919	1	Solids, Total Suspended (TSS)	8.1	MG_L			
BP-GM-38-FB-091317	R1708649-011	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Toluene	0.21	UG_L	J	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Trichloroethene (TCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-TB	R1708649-012	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-TB	R1708649-012	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-TB	R1708649-012	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-TB	R1708649-012	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-TB	R1708649-012	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Trichloroethene (TCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1