

**Quarterly Operations Report  
First Quarter 2013**

**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**

July 2013

Prepared for:



Naval Facilities Engineering Command Mid-Atlantic  
9742 Maryland Avenue  
Norfolk, VA 23511

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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
H&S	H&S Environmental, Inc.
HMI	human-machine interface
IRP	Installation Restoration Program
LGAC	liquid-phase granular activated carbon
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
NELAC	National Environmental Accreditation Conference
NGC	Northrop Grumman Corporation
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDOH	New York State Department of Health
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
ORP	oxidation reduction potential
OU	operable unit

PCE	tetrachloroethene
PID	proportional, integral and derivative
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
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

H&S Environmental, Inc. (H&S) 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 First Quarter 2013 Operations Report details activities that occurred from January 2013 to March 2013. Data was collected and operational activities were performed by H&S 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 “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). Historically, the Navy's property totaled approximately 109.5 acres and was a Government Owned Contractor-Operated (GOCO) facility that was operated by the Northrop Grumman Corporation (NGC) until September 1998. NWIRP Bethpage is bordered on the north, west, and south by property owned, or formerly owned, by NGC that covered approximately 605 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 NGC. 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 NGC 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

Groundwater is extracted from recovery wells RW-1 and RW-3 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) Permit Application as an Applicable or Relevant and Appropriate Requirements (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 groundwater in the GM-38 Area. 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 vinyl chloride, are removed via two 20,000-lb vapor phase granular activated carbon (VGAC) units (VGAC-1 and VGAC-2). Vinyl chloride is oxidized by a 20,000-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 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).

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 transmitters, 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.



## **2.0 GWTP OPERATIONS AND MAINTENANCE**

While designed to run completely automated, the GWTP requires regular weekly 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 weekly 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 8 January, the system was shut down in order to backwash the three LGAC units.
- On 21 March, the annual backflow preventer inspection was performed. Results were submitted to Bethpage Water District and New York State Department of Health (NYSDOH), as required.

### **2.2 Non-routine Maintenance Activities**

The following non-routine activities were performed during the First Quarter:

- On 15 January, the system was shut down manually at ~1500 because air stripper feed pump 3A was not shutting off properly. An instrumentation contractor evaluated the issue on 16 January and found defective input / output analog cards. Replacement input / output analog cards were procured and installed and the system resumed operation at ~1800.
- On 3 February, the system went down due to a tripped motor control breaker. The plant was restarted upon arrival of the operator.
- On 19 February and 3 March, a high air stripper tower alarm was received. On each occasion, the operator responded to the alarm and the system resumed normal operation.
- On 5 March, the instrumentation contractor was on site to evaluate system flowrates. Proportional, Integral and Derivative (PID) parameters of the air stripper basin level control loop output, which varies the speed of the effluent pump, were manipulated and equalization tank transfer pump PID parameters were adjusted to maintain a consistent flow through the plant.
- On 28 March, Verizon was on site to repair two downed phone lines.
- On 29 March, the system was manually shut down for implementation of a pumping test for the GM-38 Area. Results of this pumping test will be provided under separate cover by others.

### 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 quarterly 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 approved by NYSDEC Water Division for the effluent limitations and monitoring requirements. These results are also submitted to the NYSDEC on a monthly basis in the form of a Discharge Monitoring Report (DMR). A copy of the approved NYSDEC effluent limitation and monitoring constituents and the reporting forms are included in **Appendix A**.

Monthly aqueous samples are collected from each recovery well (RW-1 and RW-3), as well as the treated effluent (TE) discharge line. In addition, various intermediary process system samples are collected monthly, consisting of air stripper effluent (ASE), bag filter effluent (BFE), and effluent of each of the three LGAC units (LC1, LC2, and LC3). The analytical results of monthly process water samples collected during the First Quarter are presented in **Table 1**. The data demonstrates that all permitted constituents were in compliance with regulatory requirements during the First 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 First Quarter.

Monthly DMRs for the First Quarter (January – March 2013) are included in **Appendix A**.

#### 3.2 Air Quality Monitoring

Treated off-gas discharged at the stack of the GWTP is subject to emissions limitations as described by the calculations submitted by the Navy and approved by the NYSDEC Division of Air Resources (DAR) in July 2009. A copy of the NYSDEC approved calculations 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-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 VC13) collected during the First 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 regulatory requirements during the First Quarter based on the emission rates in pounds per hour (lb/hr).

### 3.3 Groundwater Quality Monitoring

The groundwater monitoring well system at the GM-38 Groundwater Remediation Area consists of fourteen monitoring wells (as summarized in **Table 4**), three recovery wells (RW-1, RW-2, RW-3) and one injection well (IW-1). 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. Well locations are depicted on **Figure 3**.

Depth to water (DTW) measurements are collected from twelve of the monitoring wells and water quality samples are collected from eight of the monitoring wells on a quarterly basis. 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.

Quarterly groundwater samples were collected from eight monitoring wells (RW1-MW1, RW1-MW3, RW2-MW1, RW3-MW1, RW3-MW2, RW3-MW3, RW3-MW4, and TP-01). Samples were collected using bladder pumps in accordance with the U.S. Environmental Protection Agency (USEPA) low-flow sampling methodologies. Results of the groundwater sampling for the First 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. RW-2 MW-1 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 RW-2 MW1 is monitored for water quality.

#### Recovery Well 3 (RW-3) Monitoring Wells

The RW-3 cluster consists of four monitoring wells. RW3-MW1 and RW3-MW4 are screened between 475 and 495 feet bgs. RW3-MW2 and RW3-MW3 are screened between 330 and 350 ft bgs and 320 and 340 ft 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 130 and 150 feet bgs, is located approximately 20 feet south of IW-1, and is only hydraulically monitored.

### **3.3.1 Groundwater Quality Results**

H&S collected groundwater samples for the First Quarter from 13-14 March 2013. Field parameters measured during well purging, consisting 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 Middletown, PA. The samples are analyzed for VOCs via USEPA Method 624, mercury via USEPA Method 245.1, and total suspended solids (TSS) via USEPA Method SM20 2540D. Validated analytical results of samples collected during the March 2013 monitoring event are summarized in **Table 6**. Data validation reports and a validated analytical data summary are presented in **Appendix D**. Raw analytical data is provided under separate cover.

### **3.3.2 Quality Assurance/Quality Control Sampling**

Quality assurance/quality control (QA/QC) samples were collected during the quarterly groundwater monitoring event in accordance with the *Final Sampling and Analysis Plan* (TtEC 2010a). These samples consisted of blind field duplicates (collected from TP-01 during the First 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 lack 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 First 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 First Quarter are presented in **Table 7**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the First Quarter monitoring events 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 and RW-3 sampled monthly) and the eight monitoring wells sampled during the First 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 710 µg/L detected in February 2010), remaining around or below 300 µg/L since the latter half of 2012. During the First Quarter 2013, concentrations ranged from 208-234 µg/L. 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 20.5 µg/L in November 2012. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in February 2010 to a low of 41.2 µg/L in April 2012. 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, decreasing to non-detectable levels one out of three months in the First Quarter 2013.

**Figure 6** presents concentrations detected at recovery well RW-3. Concentrations of TCE have decreased from initial concentrations in February 2010 (660 µg/L). During the First Quarter 2013, concentrations ranged from 228-237 µg/L. Concentrations of cis-1,2-DCE have remained consistently below 4.0 µg/L. PCE has been detected at low levels during only a few sampling events; detected concentrations were below 1.0 µg/L in two out of three months in the First Quarter 2013.

**Figure 7** presents concentrations detected at RW1-MW1. Concentrations of TCE and cis-1,2-DCE in the First Quarter 2013 (101 µg/L and 92 µg/L, respectively) were higher than initial concentrations observed in May 2005 (53.6 µg/L and 78.6 µg/L, respectively). However, TCE and cis-1,2-DCE remain below the maximum concentrations observed in May 2009 (140 µg/L and 180 µg/L, respectively). Concentrations of PCE have remained consistently below 1.0 µg/L.

**Figure 8** presents concentrations detected at RW1-MW3. Concentrations of cis-1,2-DCE and PCE have consistently remained below 1.0 µg/L and concentrations of TCE have remained near or below 2.0 µg/L.

**Figure 9** presents concentrations detected at RW2-MW1. Concentrations of TCE have decreased substantially from original concentrations observed in May and July 2005 (37.6 µg/L and 34.6 µg/L, respectively). Concentrations were below 1.0 µg/L in the First Quarter 2013. Concentrations of cis-1,2-DCE have remained consistently below 2.0 µg/L, and PCE has not been detected during any sampling event.

**Figure 10** presents concentrations detected at RW3-MW1. Concentrations of TCE in the First Quarter 2013 (46.6 µg/L) were higher than initial concentrations observed in January 2010 (35.0 µg/L), though remain less than maximum TCE concentrations observed in November 2010 (77.6 µg/L). No overall trend is discernible. Concentrations of cis-1,2-DCE and PCE have exhibited similar trends, increasing slightly from initial concentrations, but remaining consistently below 2.0 µg/L.

**Figure 11** presents concentrations detected at RW3-MW2. TCE reached a maximum concentration of 211 µg/L in April 2010. Concentrations observed in the First Quarter 2013 (155 µg/L) were slightly less than initial concentrations. No overall trend is discernible. Concentrations of cis-1,2-DCE at this location

have consistently remained between 1.0 – 2.0 µg/L, and PCE has not been detected during any sampling event with the exception of August 2012, when a concentration of 0.28 J µg/L was observed.

**Figure 12** presents concentrations detected at RW3-MW3. Maximum concentrations of TCE were detected in April 2010 (397 µg/L). TCE concentrations (347 µg/L) detected in the First Quarter 2013 were similar to initial concentrations. No overall trend is discernible. Concentrations of cis-1,2-DCE have remained near or below 2.0 µg/L and PCE has remained below 1.0 µg/L, with concentrations of both analytes falling to non-detectable levels in the First Quarter 2013.

**Figure 13** presents concentrations detected at RW3-MW4. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L) with the lowest concentration observed to date in the First Quarter 2013 (2.3 µg/L). PCE had not been detected during any sampling event, and cis-1,2-DCE has not been detected since its detection during the initial sampling event in January 2010 (0.46 µg/L).

**Figure 14** presents concentrations detected at TP-01. TCE concentrations have decreased since the initial sampling event in January 2010 (65 µg/L), with a concentration of 25.9 µg/L observed in the First Quarter 2013. A similar trend exists for concentrations of cis-1,2-DCE. Concentrations have decreased from an initial value of 190 µg/L to 5.8 µg/L in the First Quarter 2013, with concentrations fluctuating over time. PCE concentrations have remained fairly consistent over time, ranging from 3.3 µg/L in June 2011 to 6.0 µg/L in June 2012.

#### **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. The GWTP should continue to be operated and monitored on a quarterly basis using the 14 monitoring wells. In addition, an evaluation should be conducted to better determine the capture zone. This evaluation is currently underway.

## 5.0 REFERENCES

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.



## **TABLES**

**Table 1**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Discharge Monitoring Results**  
**First Quarter 2013**

SPDES Parameters	Daily Maximum Goal	Units	January 2013									
			RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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
Process Stream												
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			1/14/13									
Average Flowrate	1100	GPM	597	159	756	NR	755	NR	NR	NR	777	NR
Total Flow		gallons	26,651,520	7,106,720	33,758,240	NR	33,682,820	NR	NR	NR	34,677,580	NR
pH	5.5 - 8.5	SU	4.64	5.02	4.72	6.11	6.05	6.04	5.98	6.04	6.05	6.05
Carbon Tetrachloride	NA	µg/L	0.32 J	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.5	2.1	2.4	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	0.45 J	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	3.9	1.4	3.4	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	29.6	1.3	23.6	ND	ND	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	0.40 J	ND	0.32 J	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	65.5	0.37 J	51.8 J	0.29 J	0.33 J	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	3.3	0.84 J	2.8 J	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	233	233	233	1.4	1.3	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	1.5 J	ND	1.2 J	ND	ND	ND	ND	ND	ND	ND
Mercury	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Table 1**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Discharge Monitoring Results**  
**First Quarter 2013**

SPDES Parameters	Daily Maximum Goal	Units	February 2013										
			RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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	
Process Stream													
Well Depth		ft	445	530	NA	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	NA
Sampling Date			2/15/13										
Average Flowrate	1100	GPM	614	182	797	NR	796	NR	NR	NR	NR	846	NR
Total Flow		gallons	24,769,813	7,346,300	32,116,113	NR	32,077,700	NR	NR	NR	NR	34,109,600	NR
pH	5.5 - 8.5	SU	5.7	5.4	5.63	5.7	6.0	6.1	6.2	6.1	6.1	6.1	6.1
Carbon Tetrachloride	NA	µg/L	0.34 J	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.9	2.6	2.8	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	0.49 J	ND	0.38 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	5.1	1.9	4.4	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	34.1	2.0	26.8	0.42 J	0.40 J	ND	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	0.70 J	ND	0.54 J	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	73.6	0.74 J	56.9 J	0.42 J	0.44 J	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	3.8	1.0	3.2	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	208	228	213	2.4	2.4	ND	ND	ND	ND	0.36 J	ND
Vinyl Chloride	2	µg/L	1.1 J	ND	0.85 J	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Table 1**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Discharge Monitoring Results**  
**First Quarter 2013**

SPDES Parameters	Daily Maximum Goal	Units	March 2013									
			RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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
Process Stream												
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			3/15/13									
Average Flowrate	1100	GPM	630	163	793	NR	789	NR	NR	NR	824	NR
Total Flow		gallons	28,108,288	7,272,500	35,380,788	NR	35,230,000	NR	NR	NR	36,763,900	NR
pH	5.5 - 8.5	SU	4.50	4.71	4.54	5.74	6.10	6.22	6.25	6.12	6.20	6.20
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.7 J	2.5 J	2.7 J	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	4.2 J	1.5 J	3.6 J	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	26.8	1.8 J	21.7 J	0.35 J	0.33 J	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	57.5	ND	45.7	0.29 J	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	3.1 J	ND	2.5 J	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	234	237	235	1.8	1.8	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

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

NA - Not Applicable

ND - Not detected above laboratory method detection limit

NR - Not Recorded

gpm - gallons per minute

(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

**Table 2**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Air Sampling Results**  
**First Quarter 2013**

DAR Parameters	SGC	Units	January 2013					February 2013				
			Influent (VC1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VC1)	VC12	VC23	Effluent	Effluent Duplicate
Process Stream												
Sampling Date			1/14/13					2/12/13				
Average Flowrate		CFM	NR	NR	NR	8,164	NR	NR	NR	NR	8,164	NR
Total Flow <sup>(1)</sup>		ft <sup>3</sup>	NR	NR	NR	364,423,104	NR	NR	NR	329,156,352	NR	NR
Total Flow <sup>(2)</sup>		m <sup>3</sup>	NR	NR	NR	10,319,313	NR	NR	NR	9,320,670	NR	NR
1,2-Dichloroethane	-	µg/m <sup>3</sup>	4.0 J	ND	2.1 J	2.0 J	2.0 J	3.1 J	ND	1.6 J	1.6 J	1.6 J
cis 1,2-Dichloroethene	-	µg/m <sup>3</sup>	260	36	130	3.4	4.0	260	67	160	4.6	5.2
trans 1,2-Dichloroethene	-	µg/m <sup>3</sup>	5.2 J	ND	4.0	ND	ND	3.8 J	ND	4.1	ND	ND
1,2-Dichloroethene (total)	-	µg/m <sup>3</sup>	260	36	130	3.4	4.0	260	67	170	4.8	5.2
Toluene	37000	µg/m <sup>3</sup>	1.9 J	28	ND	ND	2.3 J	2.0 J	4.7	0.63 J	ND	ND
Xylene	4300	µg/m <sup>3</sup>	ND	16	ND	ND	ND	ND	5.5	1.1 J	ND	ND
1,1,2-Trichloroethane	-	µg/m <sup>3</sup>	ND	ND	ND	ND	ND	3.1 J	ND	ND	ND	ND
Trichloroethene	14000	µg/m <sup>3</sup>	2600	350	77	11	6.8	2600	780	90	15	9.0
Vinyl Chloride	180000	µg/m <sup>3</sup>	9.6	1.6 J	10	ND	ND	8.6	3.6	8.2	0.99 J	ND
Tetrachloroethene	1000	µg/m <sup>3</sup>	540	82	2.2 J	1.9 J	ND	560	160	2.6 J	3.0 J	ND

**Table 2**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Air Sampling Results**  
**First Quarter 2013**

DAR Parameters	SGC	Units	March 2013				
			Influent (VC11)	VC12	VC23	Effluent	Effluent Duplicate
Process Stream							
Sampling Date			3/5/13				
Average Flowrate		CFM	NR	NR	NR	8,238	NR
Total Flow <sup>(1)</sup>		ft <sup>3</sup>	NR	NR	NR	367,755,480	NR
Total Flow <sup>(2)</sup>		m <sup>3</sup>	NR	NR	NR	10,413,676	NR
1,2-Dichloroethane	-	µg/m <sup>3</sup>	2.3 J	5.5	ND	ND	0.64 J
cis 1,2-Dichloroethene	-	µg/m <sup>3</sup>	150	63	110	4.7	ND
trans 1,2-Dichloroethene	-	µg/m <sup>3</sup>	1.7 J	3.6	2.4 J	ND	ND
1,2-Dichloroethene (total)	-	µg/m <sup>3</sup>	150	67	110	4.8	ND
Toluene	37000	µg/m <sup>3</sup>	2.4 J	8.1	0.55 J	ND	3.0
Xylene	4300	µg/m <sup>3</sup>	1.9 J	41	1.0 J	ND	1.8 J
1,1,2-Trichloroethane	-	µg/m <sup>3</sup>	ND	1.5 J	ND	ND	ND
Trichloroethene	14000	µg/m <sup>3</sup>	1800	710	47	10	4.6
Vinyl Chloride	180000	µg/m <sup>3</sup>	5.1	7.3	2.4	ND	ND
Tetrachloroethene	1000	µg/m <sup>3</sup>	440	160	2.3 J	2.2 J	ND

Notes:

ND - Not detected

NR - Not recorded

SGC - Short-term Guideline Concentration

µg/m<sup>3</sup> - micrograms per cubic meter

CFM - cubic feet per minute

DAR - Division of Air Resources

<sup>(1)</sup> Total Flow (ft<sup>3</sup>) = average flowrate (cfm) \* operational time (minutes)

<sup>(2)</sup> Total Flow (m<sup>3</sup>) = total flow (ft<sup>3</sup>) \* (0.3048<sup>3</sup>)m<sup>3</sup>/ft<sup>3</sup>

**Table 3**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Stack Emissions**  
**First Quarter 2013**

DAR Parameters	Discharge Goal	Units	January 2013	February 2013	March 2013
Sampling Date			1/14/13	2/12/13	3/5/13
Average Flowrate		CFM	8,164	8,164	8,238
Total Flow		ft <sup>3</sup>	364,423,104	329,156,352	367,755,480
Total Flow		m <sup>3</sup>	10,319,313	9,320,670	10,413,676
Trichloroethene	0.09	lb/hr	0.00034	0.00041	0.00031
Vinyl Chloride	0.01	lb/hr	0.00000	0.00000	0.00000
1,2 Dichloroethene	0.03	lb/hr	0.00010	0.00013	0.00015
1,2-Dichloroethane	BRT	lb/hr	0.00006	0.00004	0.00000
Toluene	BRT	lb/hr	0.00000	0.00000	0.00000
Xylene	BRT	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	BRT	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	--	lb/hr	0.00006	0.00008	0.00007

Notes:

BRT - Below reporting thresholds

lb/hr - pounds per hour

DAR - Division of Air Resources

CFM - Cubic feet per minute

Stack Emissions (lb/hr) = average flowrate (cfm) \* (0.3048<sup>^3</sup>)m<sup>3</sup>/ft<sup>3</sup> \* conc.(ug/m<sup>3</sup>) \* 1 lb/453592370 ug \*  
60 min/hr

**Table 4**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Groundwater Level Measurements**  
**March 2013**

Monitoring Well ID	Date	Time	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	03/13/13	1045	85.86	435	395-435	33.30	52.56
RW1-MW2	03/13/13	1040	87.35	435	395-435	34.76	52.59
RW1-MW3	03/13/13	1900	80.34	435	395-435	28.30	52.04
RW2-MW1	03/13/13	1055	90.75	510	470-510	37.39	53.36
RW2-MW2	03/13/13	1100	90.15	510	470-510	36.90	53.25
RW2-MW3	03/13/13	1050	89.75	510	470-510	36.51	53.24
RW3-MW1	03/13/13	1118	92.22	350	475-795	36.57	55.65
RW3-MW2	03/13/13	1115	91.98	495	330-350	38.00	53.98
RW3-MW3	03/13/13	1128	92.98	340	320-340	37.41	55.57
RW3-MW4	03/13/13	1125	92.92	495	475-495	38.60	54.32
TP-01	03/13/13	1025	85.91	470	450-470	33.00	52.91
IW1-MW1	03/13/13	1035	89.41	150	130-150	35.76	53.65
GM38D	NA	NA	91.37	340	320-340	NA	NA
GM382D	NA	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**  
**March 2013**

Location	Temp (°C)	pH (SU)	S.C. (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	14.64	4.53	204	0.60	242.7	1.95	clear
RW1-MW3	11.64	5.03	367	1.10	219.9	5.96	clear
RW2-MW1	8.97	8.73	121	2.71	200.8	9.17	clear
RW3-MW1	10.35	4.49	268	0.79	263.9	29.1	clear
RW3-MW2	9.99	4.96	165	0.40	241.8	5.97	clear
RW3-MW3	11.19	5.19	288	0.44	197.7	10.36	clear
RW3-MW4	8.48	4.36	338	0.41	289.1	24.8	clear
TP-01	13.45	6.03	214	5.83	199.3	3.97	clear

**Notes:**

S.C. = Specific Conductance

mS/cm = milliSiemens per centimeter

NTU = nephelometric turbidity units

mg/L = milligrams per liter

°C = 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**  
**March 2013**

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1	RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW4	TP-01	
Sample Date	3/13/2013	3/14/2013	3/13/2013	3/14/2013	3/14/2013	3/14/2013	3/14/2013	3/13/2013	3/13/2013
Comments									Duplicate
<b>VOCS (EPA 624) ug/L</b>									
Benzene	ND	ND	0.54 J	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	1.2	1.1
1,1-dichloroethane	5.3	8.5	0.52 J	1.2	0.68 J	4.5 J	3.8	1.5	1.4
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	0.36 J	0.37 J
1,1-dichloroethene	2.8	1.7	ND	0.68 J	0.53 J	2.1 J	0.38 J	0.44 J	0.42 J
cis-1,2-dichloroethene	91.7	0.53 J	0.29 J	0.38 J	1.6	ND	ND	5.8	5.8
trans-1,2-dichloroethene	1.7	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND	3.2 J	ND	ND	ND
Tetrachloroethene	ND	ND	ND	1.6	ND	ND	ND	0.34 J	0.32 J
1,1,1-trichloroethane	1.1	1.4	ND	0.49 J	0.41 J	ND	ND	0.35 J	0.35 J
1,1,2-trichloroethane	ND	0.61 J	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	101	1.9	0.67 J	46.6	155	347	2.3	25.9	25.4
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	ND	ND	ND	16	ND	ND	22	ND	ND

**Notes:**

J = estimated value

ND - Not detected above laboratory method detection limit

mg/L = milligrams per liter

µg/L = micrograms per liter

Samples were analyzed for TCL VOCs by Method 624. Only those VOCs detected are presented above.

Table 7  
 GM-38 Area Groundwater Remediation  
 Groundwater Treatment Plant  
 Naval Weapons Industrial Reserve Plant - Bethpage, NY  
 Summary of Historical Groundwater Analytical Results  
 Through Fourth Quarter 2012

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 <sup>(1)</sup>	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
Comments										Duplicate						Duplicate		
Well Depth (Ft)	435																	
Screened Interval (Ft)	395-435																	
VOCS (EPA 624) ug/L																		
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	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
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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
Carbon tetrachloride	ND	ND	0.32J	ND	ND	ND	0.17J	ND	NR	NR	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
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	NR	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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	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
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	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
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
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
1,2-dichloroethane	ND	ND	0.29J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
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
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	0.72J	ND	0.42J	ND	ND	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	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
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
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
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
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
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
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

**Table 7**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Summary of Historical Groundwater Analytical Results**  
**Through Fourth Quarter 2012**

Sample ID	RW1-MW2			RW1-MW3													
	5/4/2005	7/22/2005	5/28/2009	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	
Comments																	
Well Depth (Ft)	435			435													
Screened Interval (Ft)	395-435			395-435													
VOCS (EPA 624) ug/L																	
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
Dibromochloromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	1.4	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	ND
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	4.6	5.5	3.4	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	8.5
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	3.2	12.3	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	1.7
cis-1,2-dichloroethene	181.0	47.6	160.0	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	0.53 J
trans-1,2-dichloroethene	2.5	7.6	2.5	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
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	1.0	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	ND	ND
Tetrachloroethene	ND	134.0	19.0	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
Toluene	0.32J	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	1.3	1.0	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	1.4
1,1,2-trichloroethane	ND	0.65J	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	0.61 J
Trichloroethene	158.0	198.0	200.0	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	1.9
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	12.9	187.0	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	4.0	NR	8.0	<4.0	<4.0	<4.0	<4.0	ND	ND	ND	5	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 Fourth Quarter 2012**

Sample ID	RW2-MW1																RW2-MW2	
	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	5/4/2005	7/21/2005
Comments				EPA 624														
Well Depth (Ft)	510																510	
Screened Interval (Ft)	470-510																470-510	
VOCS (EPA 624) ug/L																		
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	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	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	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	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
1,1-dichloroethane	0.53J	0.93J	1.2J	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	ND	0.78J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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	ND	0.41J
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	0.33J	0.41J
trans-1,2-dichloroethene	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
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	NR	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	0.33J	0.53J
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	D	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	7.8	13.8
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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	NR	NR
TSS (SM20 2540D) mg/L	NR	NR	2260.0	NR	58.0	<4.0	<4.0	<4.0	181	5	36	6	25	12	10	ND	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 Fourth Quarter 2012**

Sample ID	RW2-MW3			RW3-MW1														
	5/3/2005	7/20/2005	5/28/2009	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
Comments									duplicate				duplicate					
Well Depth (Ft)	510			495														
Screened Interval (Ft)	470-510			475-495														
VOCS (EPA 624) ug/L																		
Acrolein	NR	NR	30 R	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	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
Chloroform	ND	ND	ND	ND	ND	ND	0.20J	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	0.63 J
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	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
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	0.68J	0.31J	1.4	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
1,2-dichloroethane	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
1,1-dichloroethene	ND	ND	0.42J	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
cis-1,2-dichloroethene	0.40J	0.66J	2.3	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
trans-1,2-dichloroethene	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	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	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
Toluene	ND	0.50J	0.39J	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.26 J	ND	ND	ND
1,1,1-trichloroethane	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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	16.2	20.6	18.0	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
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury (EPA 245.1) ug/L	NR	NR	ND	NR	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	14.8	NR	<4.0	<4.0	<4.0	<4.0	<4.0	5160	ND	ND	ND	NR	17	ND	ND	16

Table 7  
GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Summary of Historical Groundwater Analytical Results  
Through Fourth Quarter 2012

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
Comments		duplicate			duplicate									duplicate		duplicate	
Well Depth (Ft)	350																
Screened Interval (Ft)	330-350																
VOCS (EPA 624) ug/L																	
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	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
Benzene	ND	ND	ND	ND	ND	ND	ND	NR	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
Bromoform	NR	NR	ND	ND	ND	ND	ND	NR	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
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	NR	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
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	NR	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
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	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
Chloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	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
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
1,2-dichloroethane	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
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
trans-1,2-dichloroethene	ND	ND	0.43 J	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
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	NR	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
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
Trichloroethene	160	170	211	73	58.2	60.9	110	135	151	71.9	96.5	209	198	192	173 J	171	155
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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

Table 7  
GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Summary of Historical Groundwater Analytical Results  
Through Fourth Quarter 2012

Sample ID	RW3-MW3														
Sample Date	1/20/2010	4/22/2010	4/22/2010	7/28/2010	11/3/2010 <sup>(1)</sup>	3/25/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013
Comments			duplicate								duplicate				
Well Depth (Ft)	340														
Screened Interval (Ft)	320-340														
VOCS (EPA 624) ug/L															
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	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
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
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	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
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
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
1,2-dichloroethane	ND	0.52J	0.54J	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	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
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
trans-1,2-dichloroethene	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
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	3.2 J
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
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
Toluene	ND	ND	ND	ND	ND	ND	NR	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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	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
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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



**Table 7**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Summary of Historical Groundwater Analytical Results**  
**Through Fourth Quarter 2012**

Sample ID	RW3-MW4													
Sample Date	1/20/2010	4/22/2010	7/28/2010	7/28/2010	11/3/2010 <sup>(1)</sup>	3/24/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013
Comments				duplicate										
Well Depth (Ft)	495													
Screened Interval (Ft)	475-495													
VOCS (EPA 624) ug/L														
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	0.32J	ND	NR	0.87 J	ND	0.38 J	ND	ND	0.71 J	ND
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
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
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	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
cis-1,2-dichloroethene	0.46J	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	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
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NR	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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	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
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
TSS (SM20 2540D) mg/L	NR	16.0	<4.0	<4.0	<4.0	<4.0	ND	11	6	5	ND	ND	ND	22

**Table 7**  
**GM-38 Area Groundwater Remediation**  
**Groundwater Treatment Plant**  
**Naval Weapons Industrial Reserve Plant - Bethpage, NY**  
**Summary of Historical Groundwater Analytical Results**  
**Through Fourth Quarter 2012**

Sample ID	TP-01											IW-1 MW-1	IW-1
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	5/3/2005	5/27/2009
Comments				Duplicate							Duplicate		
Well Depth (Ft)	470											150	230
Screened Interval (Ft)	470-510											130-150	200-230
VOCS (EPA 624) ug/L													
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	NR
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	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
Carbon tetrachloride	ND	NR	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
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
Chloroethane	NR	NR	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	NR
Chloroform	ND	NR	0.68 J	0.74 J	ND	0.74 J	0.82 J	ND	2.5 J	1.2	1.1	0.94J	0.98J
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
1,3-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
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	0.39J	0.22J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.36 J	0.37 J	ND	ND
1,1-dichloroethene	ND	1.7	1.1	1.0	1.0	1.2	1.4	1.1	0.23 J	0.44 J	0.42 J	ND	ND
cis-1,2-dichloroethene	190	43.4	40.4	40.2	74.9	53.3	29.9	16.1	4.2	5.8	5.8	ND	ND
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
1,2-dichloropropane	NR	NR	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
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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	ND	ND
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19J
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	0.47	0.49J
1,1,2-trichloroethane	ND	NR	0.31 J	0.31 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	65	35.3	41.0	39.6	38.0	38.1	40.4	27.9	22.0	25.9	25.4	ND	0.17J
Trichlorofluoromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury (EPA 245.1) ug/L	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	0.20
TSS (SM20 2540D) mg/L	NR	63	18	NR	ND	7	6	ND	ND	ND	ND	NR	2.4

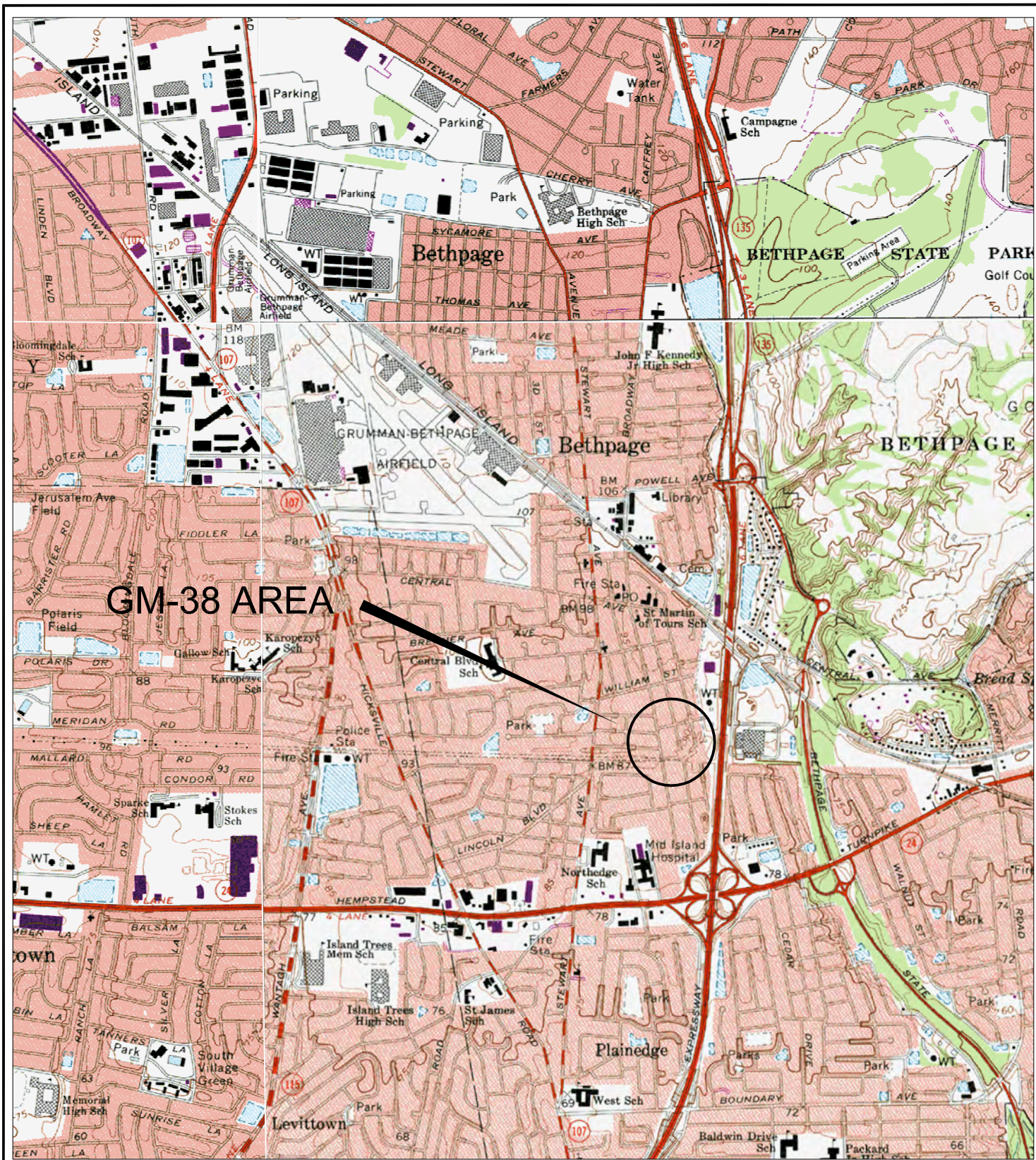
**Note:**  
VOC analysis changed from SW846 8260B to EPA Method 624 in January 2010.  
D = Dilution  
J = estimated value  
ND = not detected  
NR = not requested  
R = rejected  
mg/L - milligrams per liter  
µg/L - micrograms per liter

(1) Analytical results presented above for samples collected from RW3-MW3 and RW3-MW4 in November 2010 are not consistent with historical trends, indicating samples may have been switched. For trend analysis, concentrations for RW3-MW3 were used for RW3-MW4 for November 2010 and vice versa.

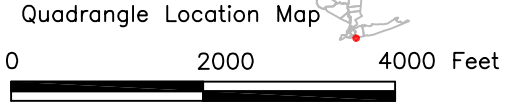
Data prior to June 2011 were collected by others.

## **FIGURES**





**GM-38 AREA**



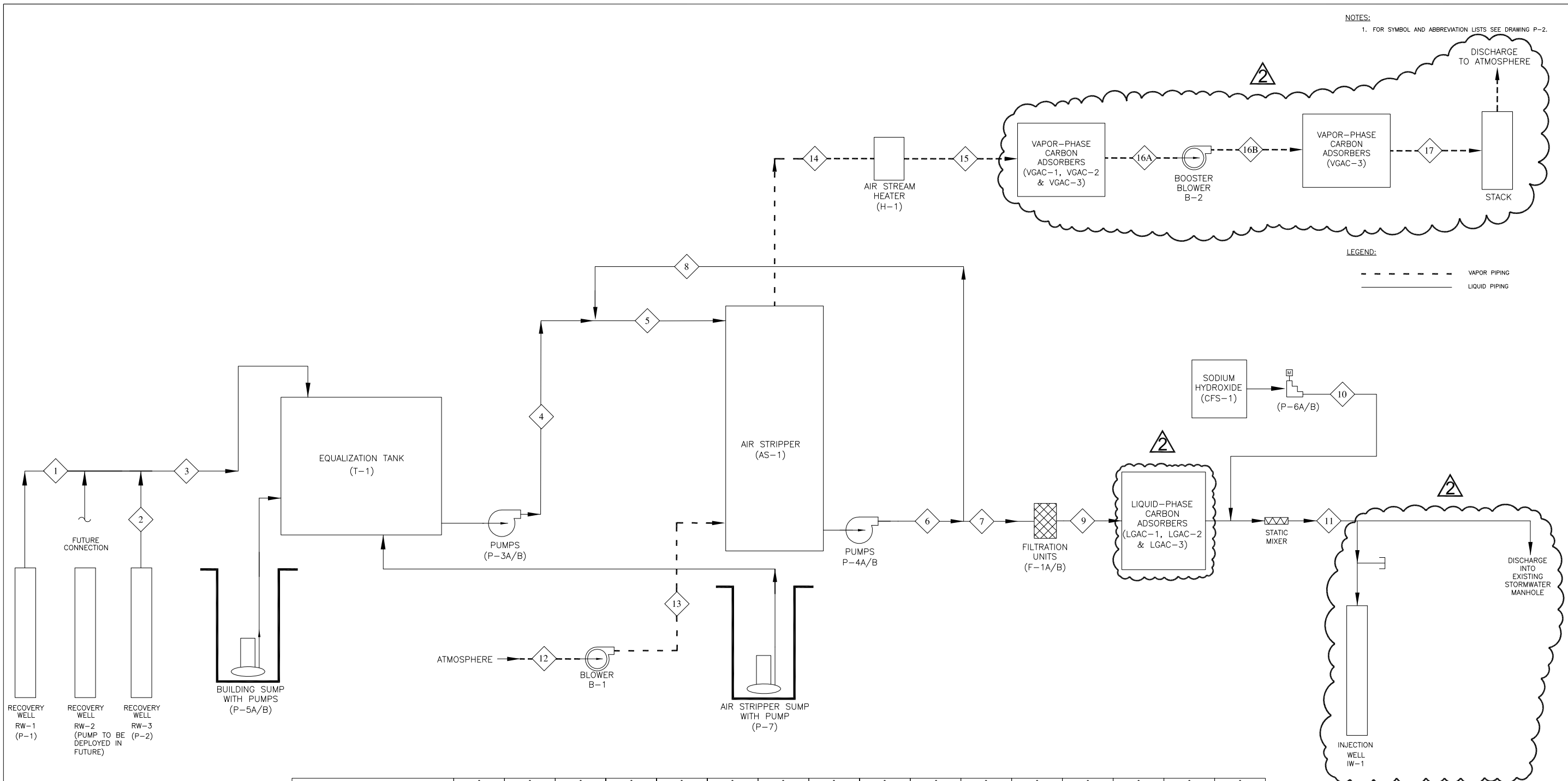
U.S. Navy RAC  
 Engineering Field Activity, Northeast  
 GM-38 Area (Offsite)  
 NWIRP Bethpage  
 Bethpage, NY

Figure 1  
 Site Location Map

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

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.

LEGEND:  
- - - - - VAPOR PIPING  
\_\_\_\_\_ LIQUID PIPING

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 <sup>3</sup> )	-	-	-	-	-	-	-	-	-	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	-

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**TETRA TECH ENGINEERING CORPORATION PC**

DATE: 05/05/06

PREP BY: DLB

APPROVED: [Signature]

DESCRIPTION: GROUNDWATER TREATMENT AND OFF-GAS TREATMENT

PROJECT: ENGINEERING FIELD ACTIVITY - NORTHEAST

LOCATION: GM-38 AREA

SCALE: AS SHOWN

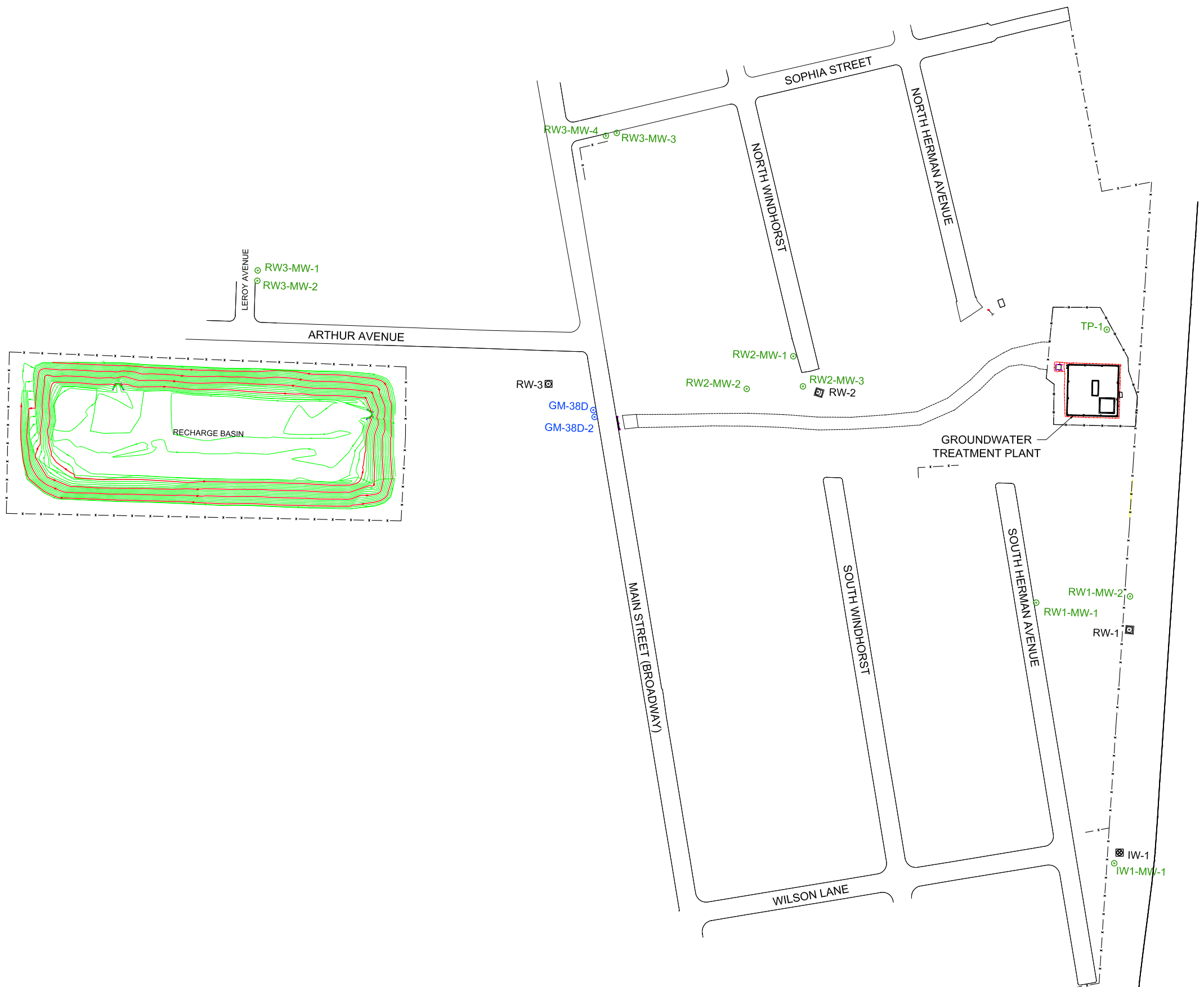
FIGURE: Figure 2

DATE: 05/05/06

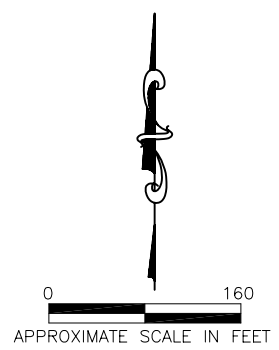
DIS. SH. NO.: 1-4

**Legend**

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



(SEAFORD-OYSTER BAY EXPRESSWAY - RTE 135)



SITE MAP		
NWIRP BETHPAGE GM-38 AREA BETHPAGE, NEW YORK		
H&S Environmental, Inc. 160 East Main Street, Suite 2F, Westborough, MA 01581		
SCALE SEE BARSCALE	DATE 4/12/2012	FIGURE 3
		

**Legend**

- Monitoring Well (Monitored by Navy)
- Monitoring Well (Monitored by Northrop Grumman)
- ⊠ Recovery Well
- ⊞ Injection Well
- J Estimated value
- ND Not Detected above laboratory method detection limit
- DCE Dichloroethene
- PCE Tetrachloroethane
- TCE Trichloroethane
- VC Vinyl Chloride

**Notes:**  
All concentrations reported in µg/L.

Monitoring wells were sampled on a quarterly basis. Recovery wells RW-1 and RW-3 were sampled on a monthly basis.

RW3-MW4	3/14/2013
cis-1,2-DCE	ND
PCE	ND
TCE	2.3
VC	ND

RW3-MW3	3/14/2013
cis-1,2-DCE	ND
PCE	ND
TCE	347
VC	ND

RW3-MW1	3/14/2013
cis-1,2-DCE	0.38 J
PCE	1.6
TCE	46.6
VC	ND

RW3-MW2	3/14/2013
cis-1,2-DCE	1.6
PCE	ND
TCE	155
VC	ND

TP-01	3/13/2013	3/13/2013 - DUP
cis-1,2-DCE	5.8	5.8
PCE	0.34 J	0.32 J
TCE	25.9	25.4
VC	ND	ND

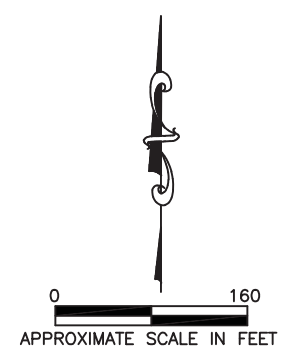
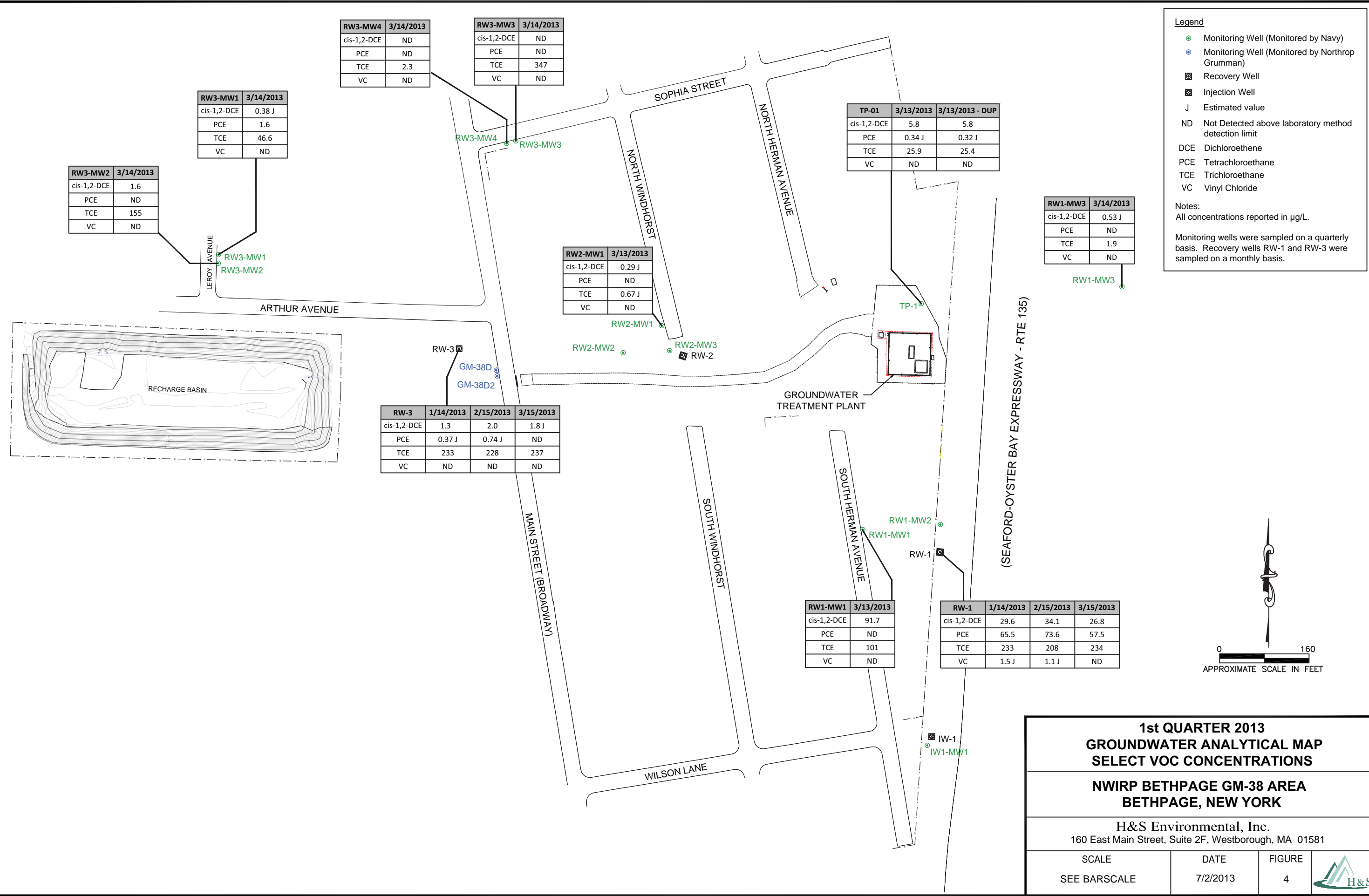
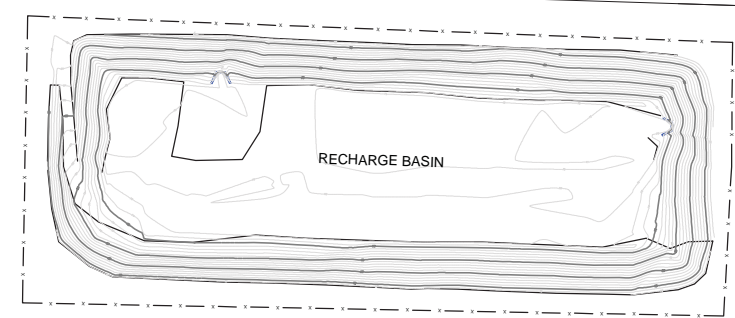
RW1-MW3	3/14/2013
cis-1,2-DCE	0.53 J
PCE	ND
TCE	1.9
VC	ND

RW2-MW1	3/13/2013
cis-1,2-DCE	0.29 J
PCE	ND
TCE	0.67 J
VC	ND

RW-3	1/14/2013	2/15/2013	3/15/2013
cis-1,2-DCE	1.3	2.0	1.8 J
PCE	0.37 J	0.74 J	ND
TCE	233	228	237
VC	ND	ND	ND

RW1-MW1	3/13/2013
cis-1,2-DCE	91.7
PCE	ND
TCE	101
VC	ND

RW-1	1/14/2013	2/15/2013	3/15/2013
cis-1,2-DCE	29.6	34.1	26.8
PCE	65.5	73.6	57.5
TCE	233	208	234
VC	1.5 J	1.1 J	ND



**1st QUARTER 2013  
GROUNDWATER ANALYTICAL MAP  
SELECT VOC CONCENTRATIONS**

**NWIRP BETHPAGE GM-38 AREA  
BETHPAGE, NEW YORK**

H&S Environmental, Inc.  
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE	DATE	FIGURE	
SEE BARSCALE	7/2/2013	4	

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

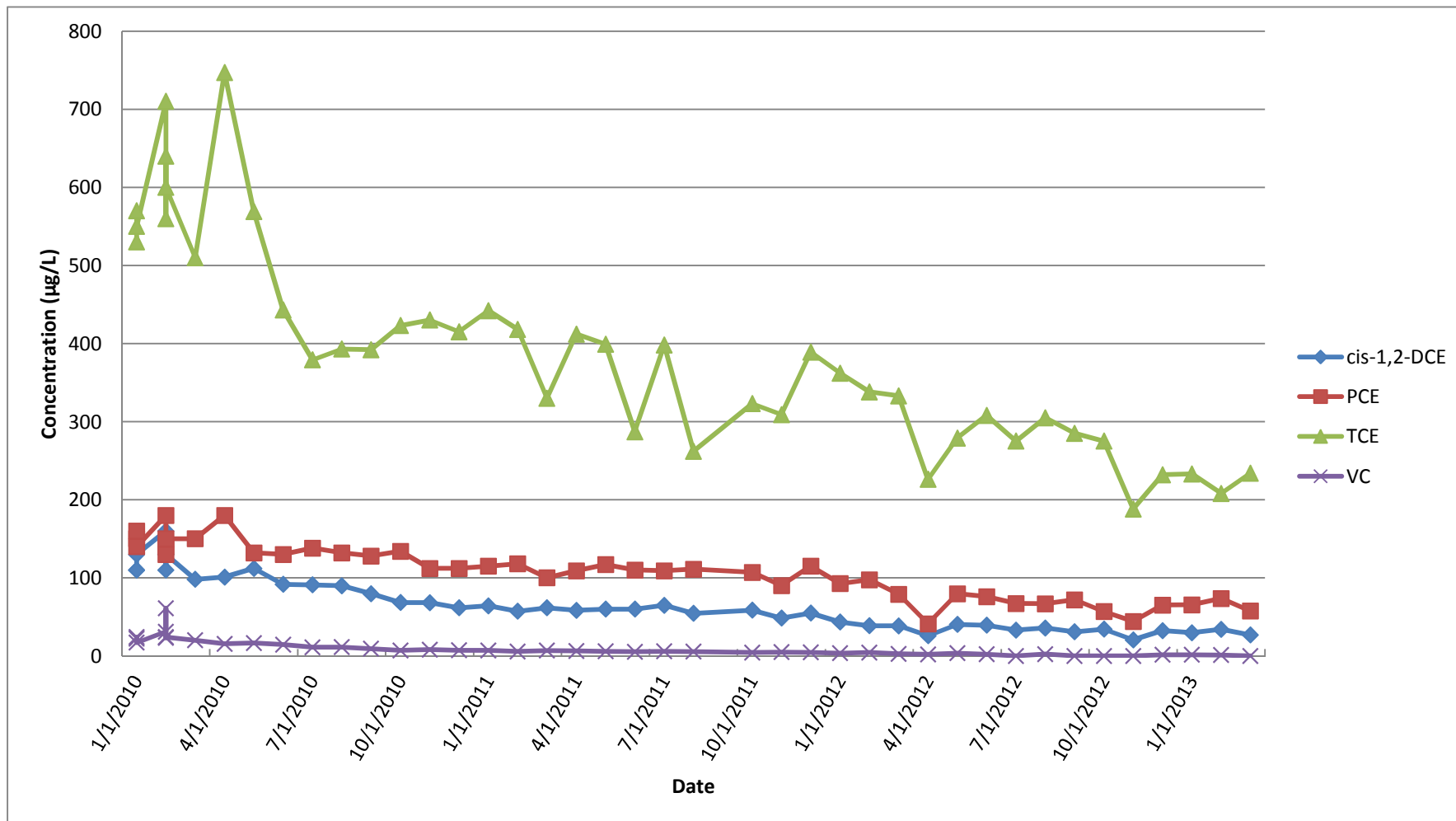
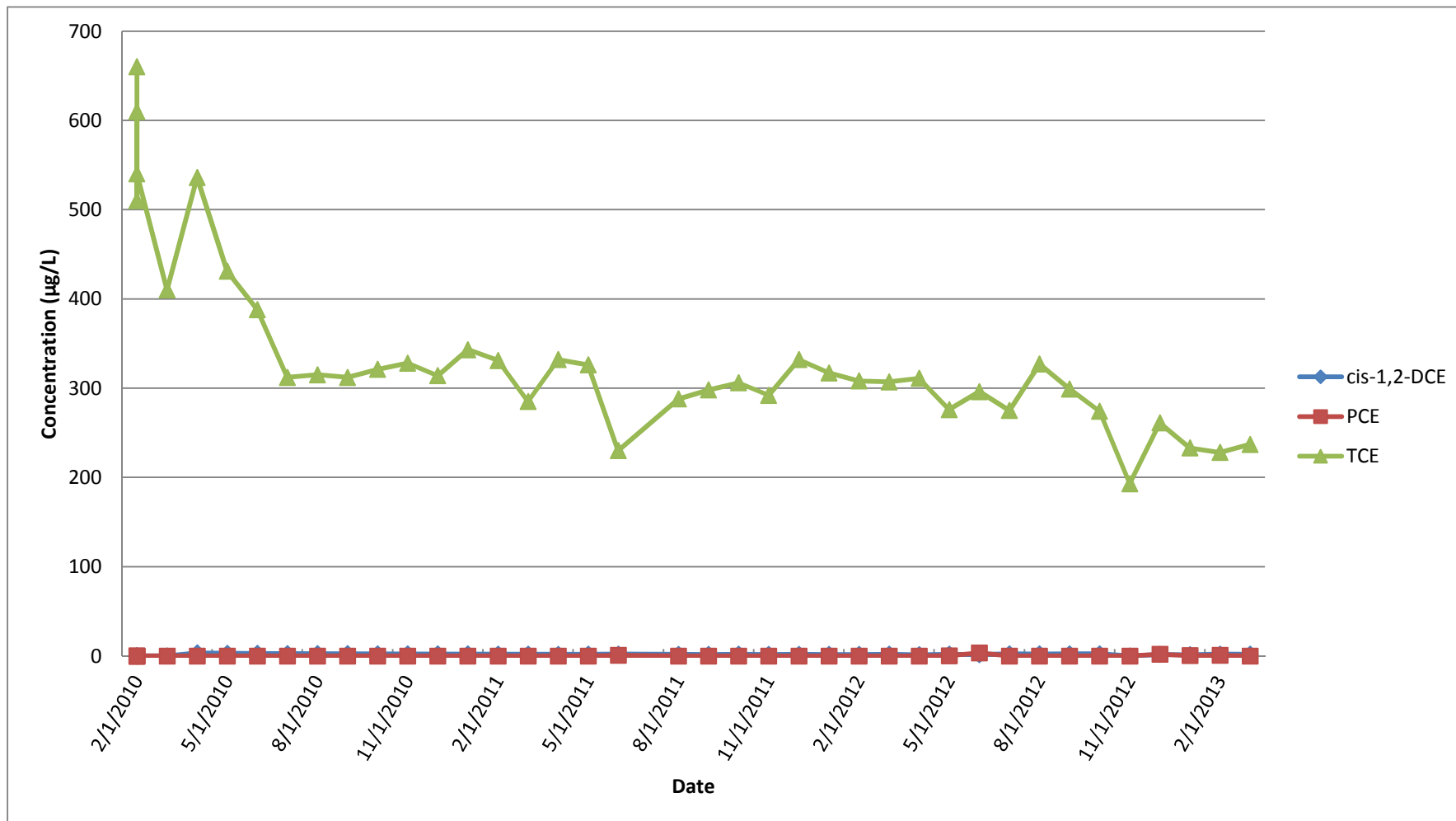
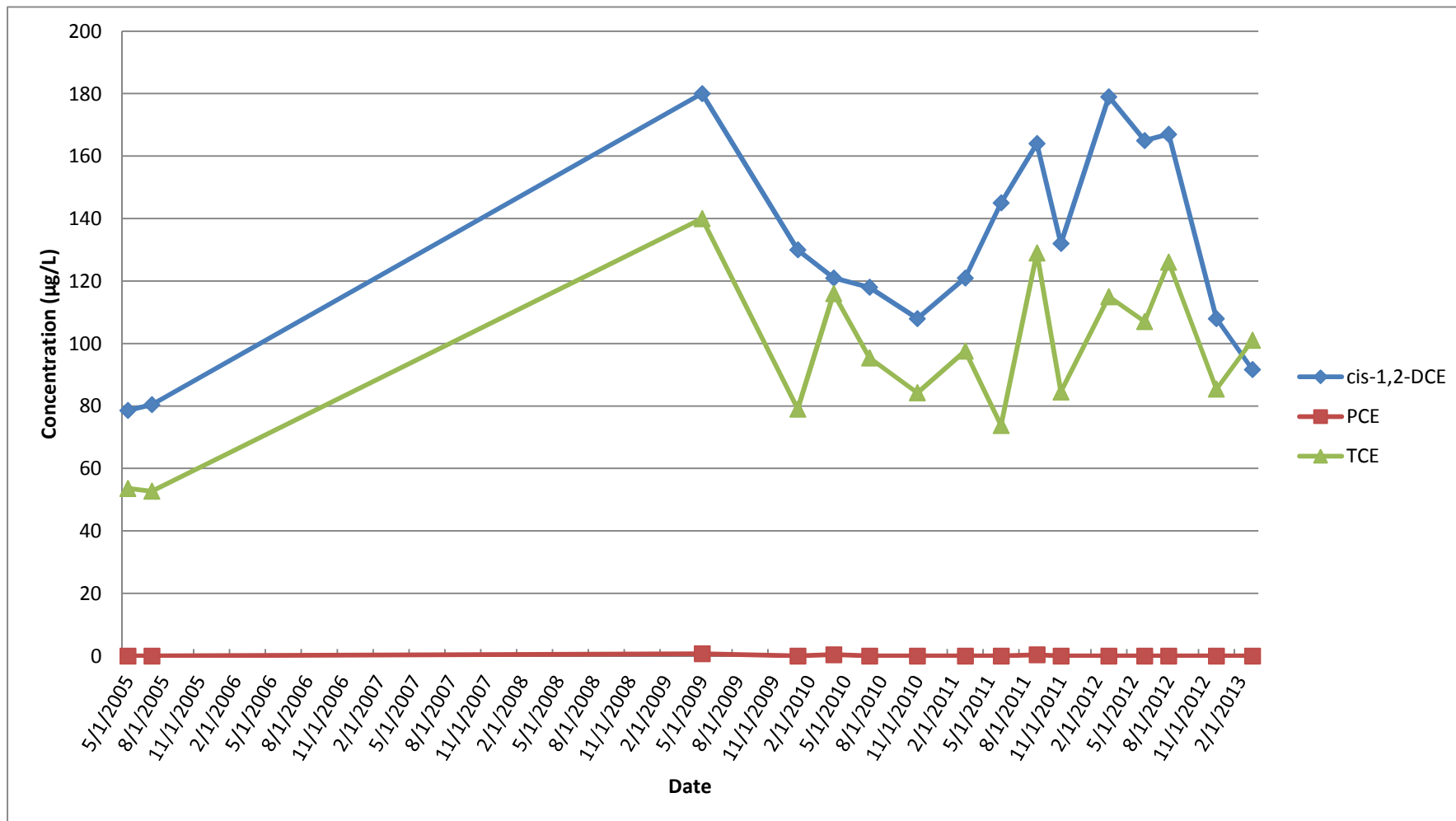




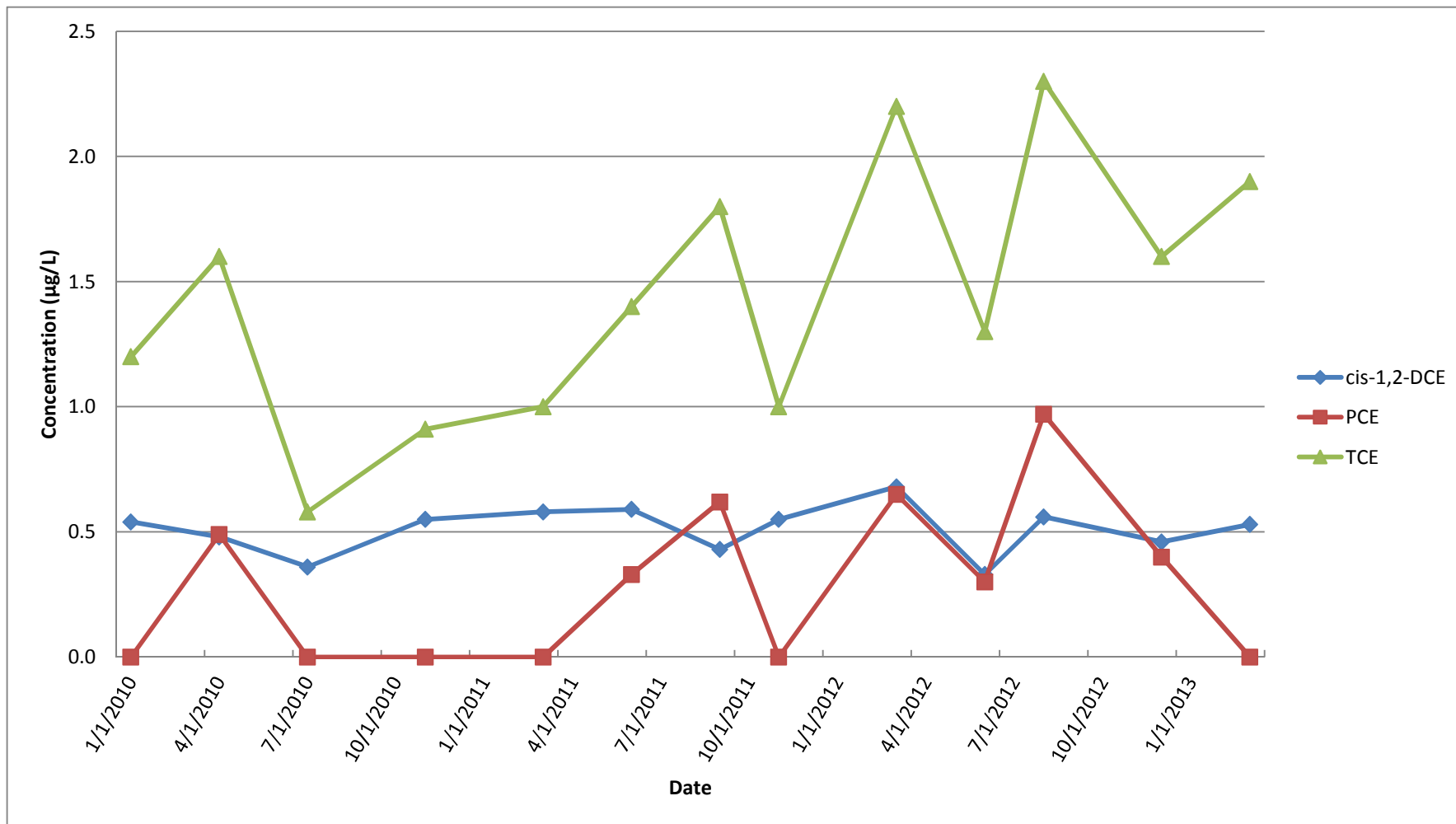
Figure 6  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
RW3



**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**

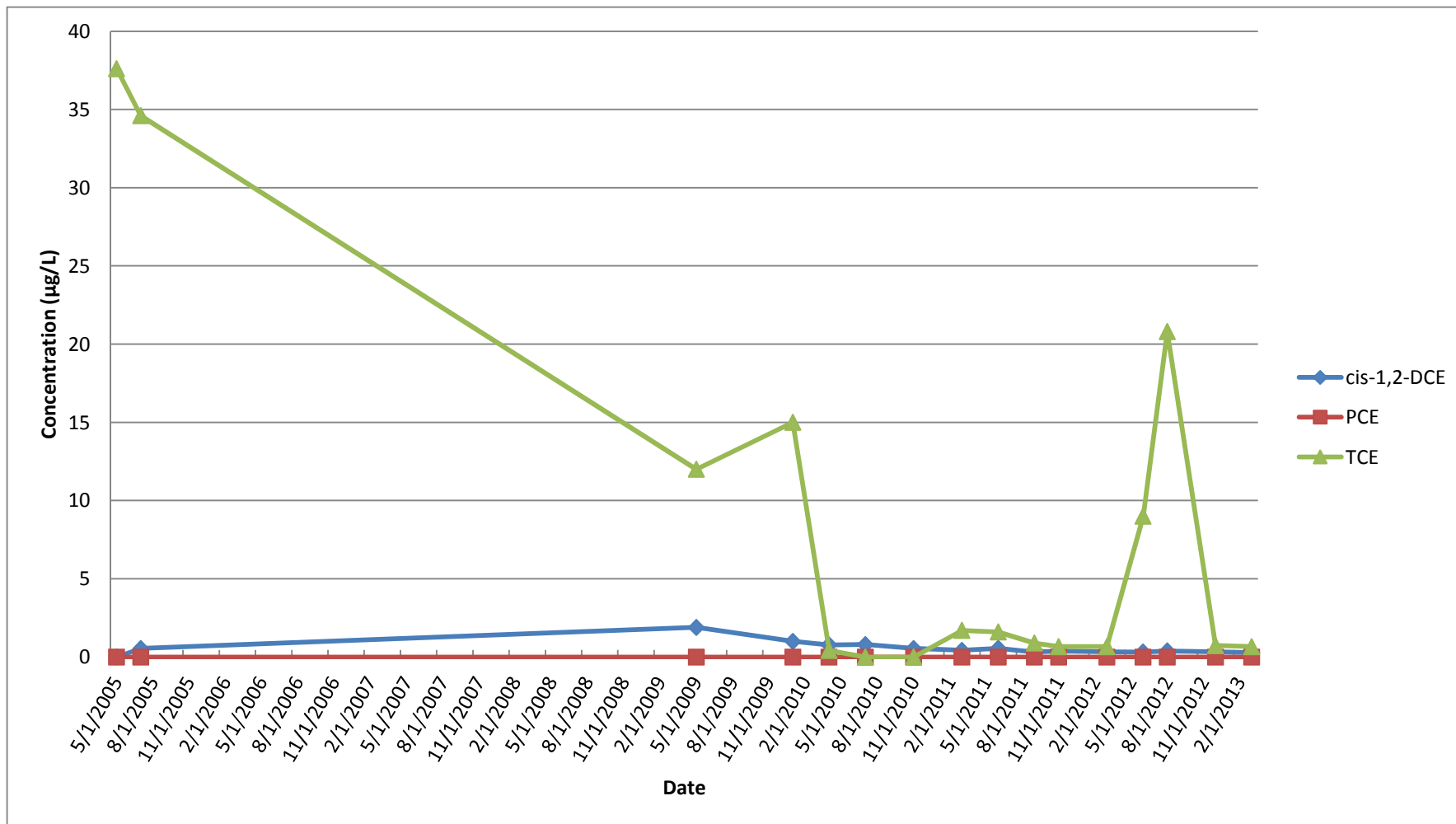


Figure 10  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
RW3-MW1

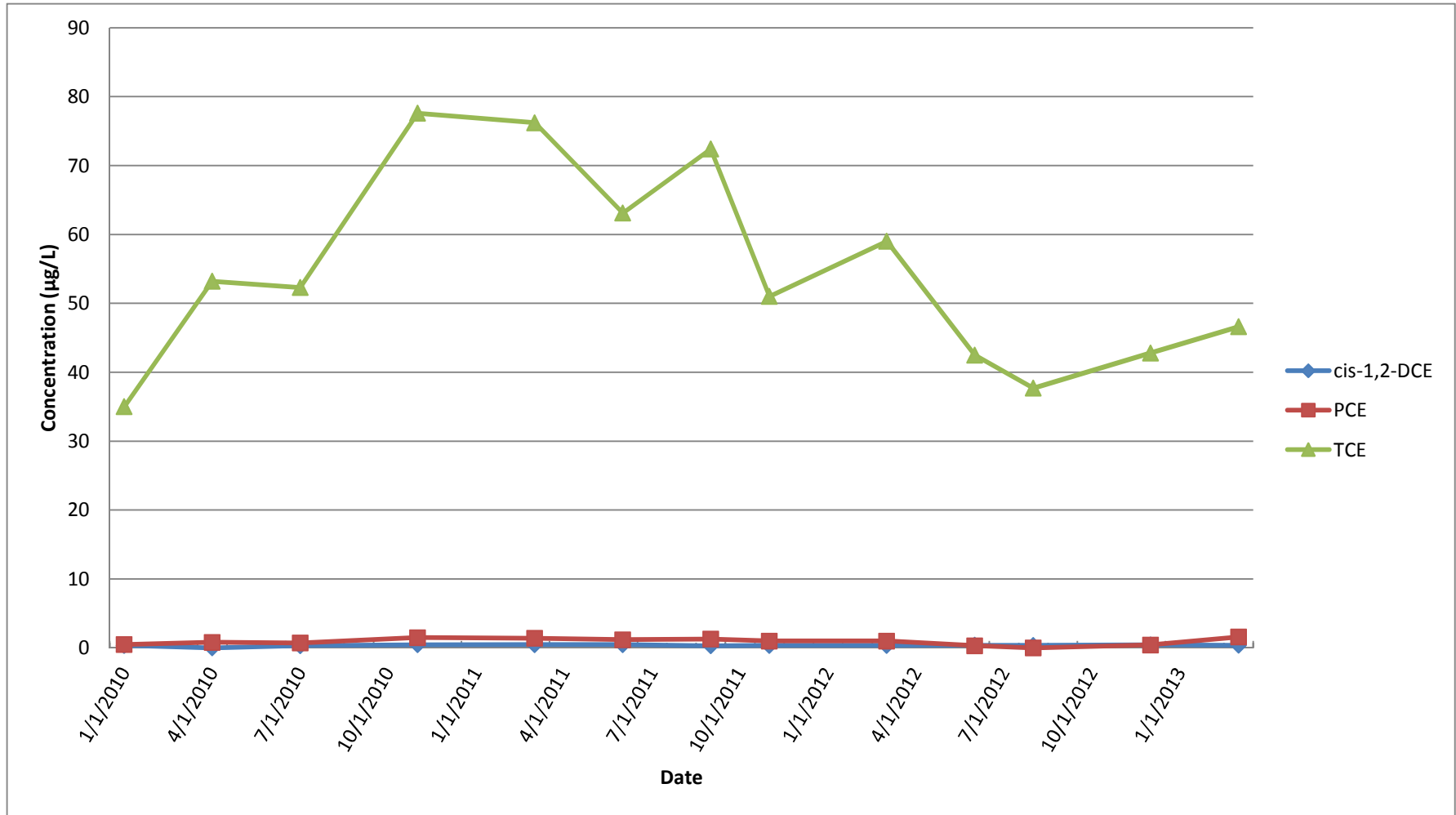


Figure 11  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
RW3-MW2

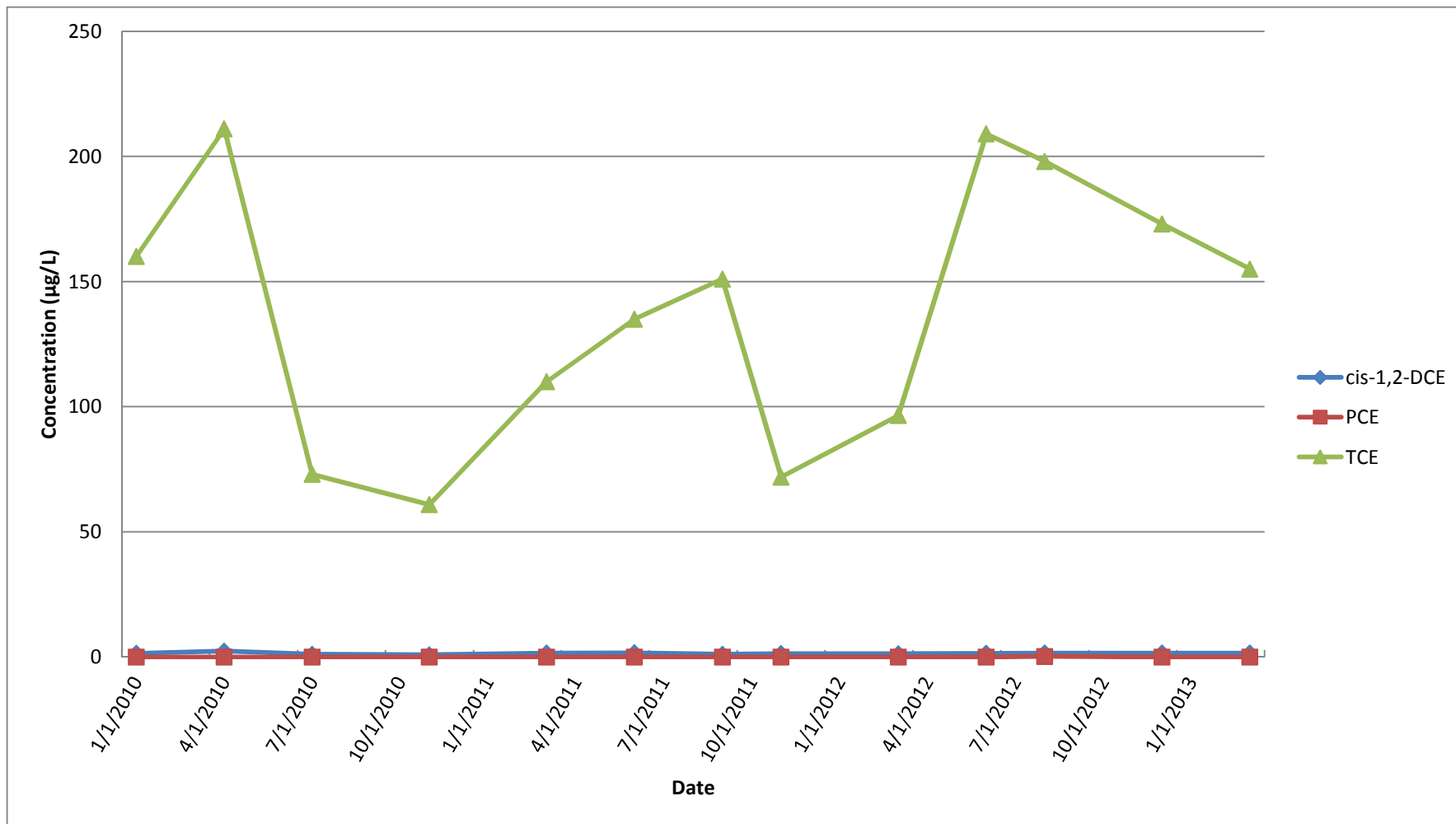


Figure 12  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
RW3-MW3

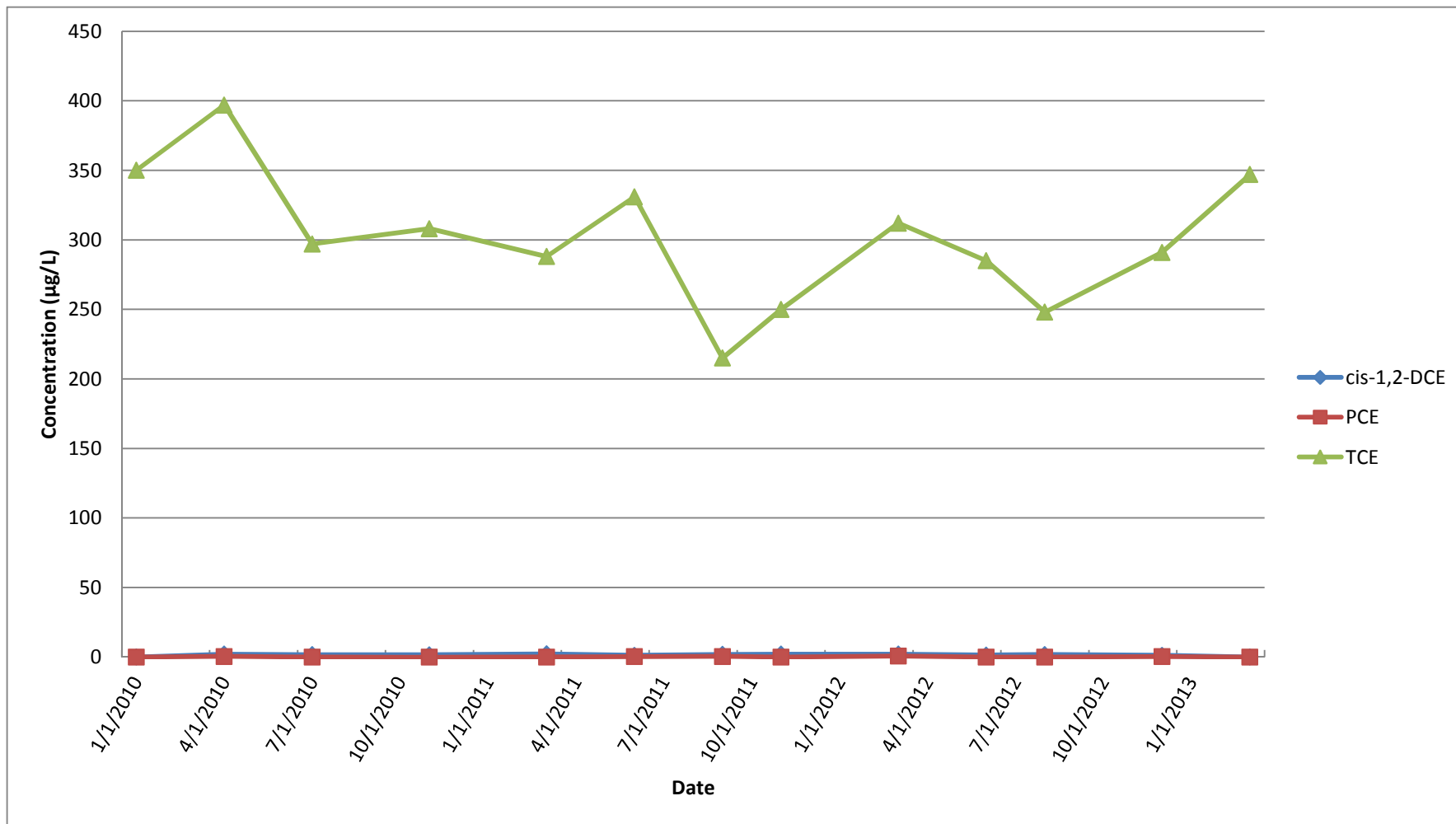


Figure 13  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
RW3-MW4

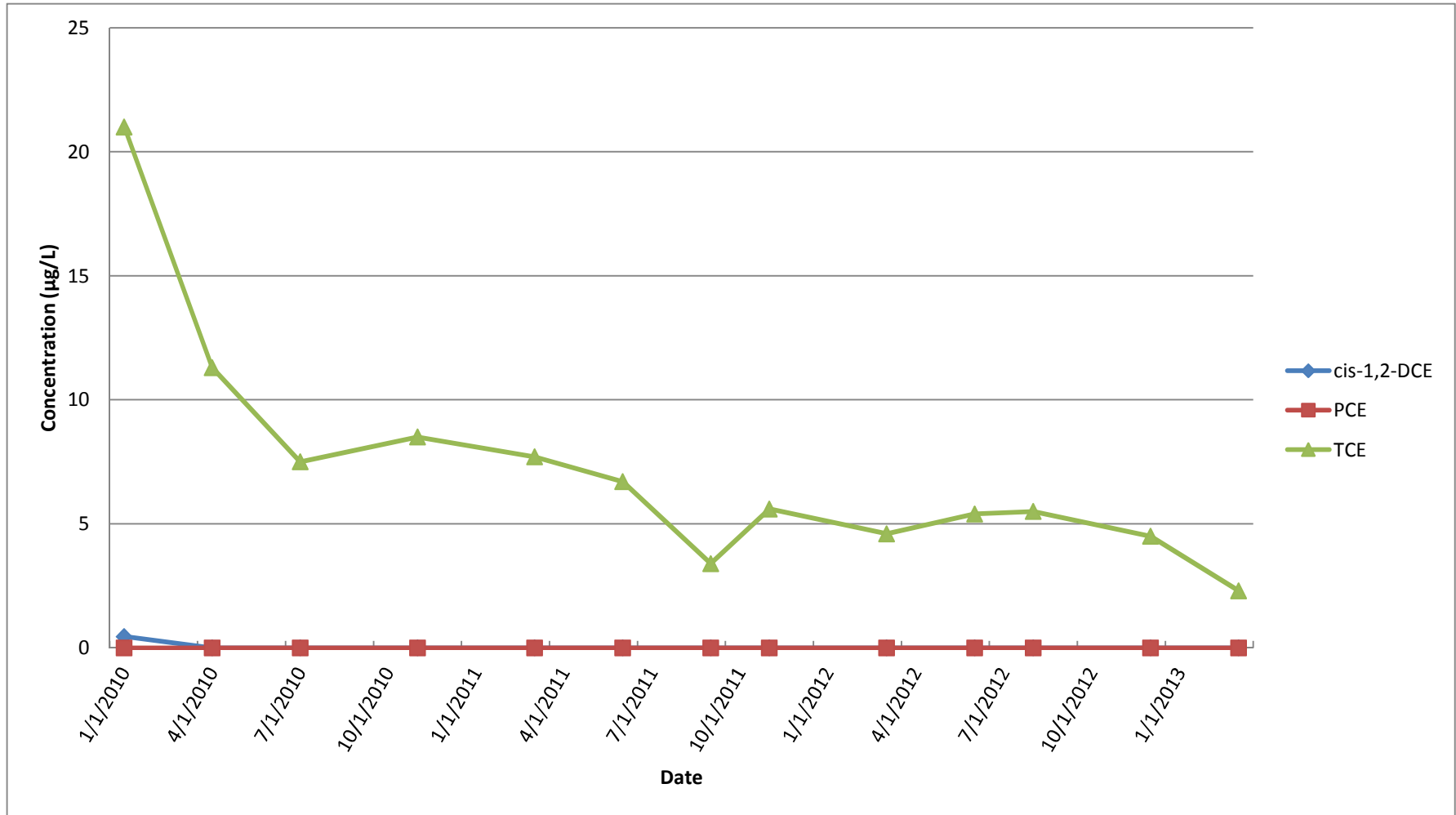
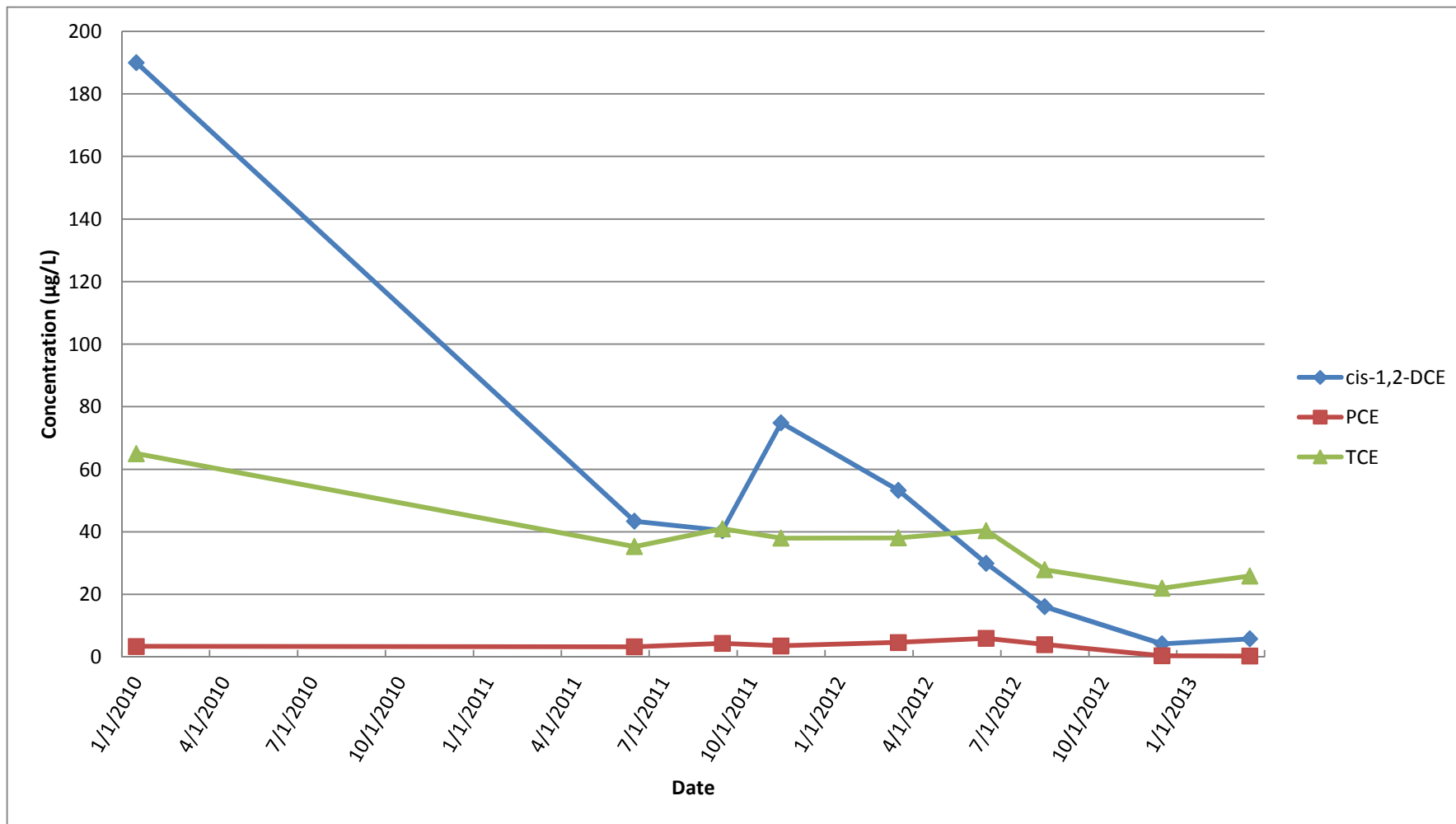




Figure 14  
GM-38 Area Groundwater Remediation  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Groundwater Concentration Trends of Select VOCs  
TP-01



**APPENDIX A**

**NYSDEC EFFLUENT LIMITATIONS AND MONITORING  
REQUIREMENTS AND MONTHLY DMRS**

**New York State Department of Environmental Conservation**

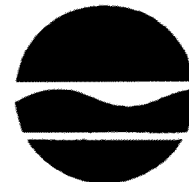
**Division of Water**

**Bureau of Water Permits, 4<sup>th</sup> Floor**

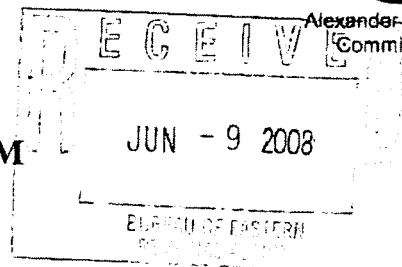
625 Broadway, Albany, New York 12233-3505

Phone: (518) 402-8111 • FAX: (518) 402-9029

Website: www.dec.state.ny.us



Alexander-B. Grannis  
Commissioner



**MEMORANDUM**

**TO:** Steven Scharf, DER

**FROM:** Jean Occidental, DOW, Bureau of Water Permits JO

**SUBJECT:** Naval Weapons Industrial Reserve Plant (NWIRP); DER Site # 1-01-001

**DRAINAGE BASIN:** na

**DATE:** June 6, 2008

In response to your request and the permittee's SPDES Permit Equivalent Application dated April 27, 2008, attached is the effluent criteria for the above noted groundwater remediation discharge.

The Division of Water does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. The Division of Environmental Remediation will be responsible for ensuring compliance with the attached effluent criteria and approval of all engineering submissions. Additional Condition (1) identifies the contact to send all effluent results, engineering submissions, and modification requests. The Regional Water Engineer should be kept appraised of the status of these discharges and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me at (518) 402-8116.

Attachment

cc: (w/att) RWE, Region 1  
 C. Webber  
 BWP Permit Coordinator

Naval Weapons Industrial Reserve Plant

DER site # 1-01-001

Page 1 of 2

## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning: April 1, 2009and lasting until: April 1, 2014

the discharges from the treatment facility to Groundwater shall be limited and monitored by the operator as specified below:

Outfall and Parameters	Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max.		Measurement Frequency	Sample Type
Treated Groundwater Remediation Discharge from: Recovery Wells 1, 2, and 3					
Flow	Monitor	1100	GPM	Continuous	Recorder
pH (range)	5.5 - 8.5		SU	Weekly	Grab
1,1-Dichloroethane	NA	5	µg/l	Monthly <sup>1</sup>	Grab
1,2-Dichloroethane	NA	0.6	µg/l	Monthly <sup>1</sup>	Grab
1,1-Dichloroethene	NA	5	µg/l	Monthly <sup>1</sup>	Grab
cis-1,2-Dichloroethene	NA	5	µg/l	Monthly <sup>1</sup>	Grab
trans-1,2-Dichloroethene	NA	5	µg/l	Monthly <sup>1</sup>	Grab
Tetrachloroethene	NA	5	µg/l	Monthly <sup>1</sup>	Grab
1,1,1-Trichloroethane	NA	5	µg/l	Monthly <sup>1</sup>	Grab
Trichloroethene	NA	5	µg/l	Monthly <sup>1</sup>	Grab
Vinyl chloride	NA	2	µg/l	Monthly <sup>1</sup>	Grab
Mercury	NA	0.25	µg/l	Monthly <sup>1</sup>	Grab

Footnotes:

- (1) The minimum measurement frequency shall be monthly following a period of 24 consecutive weekly sampling events showing no exceedances of the stated discharge limitations.

Naval Weapons Industrial Reserve Plant

DER site # 1-01-001

Page 1 of 2

Additional Conditions:

- (1) Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Steven Scharf  
Division of Environmental Remediation  
NYSDEC, 625 Broadway  
Albany, NY 12233-7015  
Phone: (518) 402-9620

With a copy sent to:

Regional Water Engineer  
NYSDEC - Region 1  
Building 40, SUNY Campus  
Stony Brook, New York 11790-2356  
Phone: (631) 444-0354

- (2) Only site generated wastewater is authorized for treatment and discharge.
- (3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.
- (4) Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.
- (5) This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

**JANUARY 2013**



13 February 2013

Mr. Steven Scharf  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Action, Bureau A  
625 Broadway  
Albany, NY 12233-7015

**Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT  
GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2  
JANUARY 2013 REPORTING PERIOD**

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) 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 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 January 2013 to 31 January 2013 are included in Attachment A. All constituents were within permit limitations during this reporting period.

Please contact me at 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,  
H&S Environmental, Inc.

Jennifer Good, P.G.  
Project Manager

Attachment A: Groundwater and Air Sampling Results from January 2013

Cc: Jean Occidental - NYSDEC Division of Water  
William Spitz - NYSDEC – Region 1 Water Engineer  
Gerard Ennis - Nassau County Department of Public Works  
Linda Bianculli - Town of Oyster Bay  
Lora Fly - NAVFAC Mid-Atlantic RPM  
Al Taormina – H&S  
GM-38 Copy

**ATTACHMENT A**  
**GROUNDWATER AND AIR SAMPLING RESULTS**  
**JANUARY 2013**



**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
January 2013**

SPDES Parameters	January 2013					
	Daily Treated Effluent Maximum	Units	RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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		1/14/13			
Average Flowrate	1100	GPM	597	159	756	777
Total Flow	N/A	gallons	26,651,520	7,106,720	33,758,240	34,677,580
pH	5.5 - 8.5	SU	4.64	5.02	4.72	6.05
Carbon Tetrachloride	NA	µg/L	0.32 J	ND	0.25 J	ND
1,1-Dichloroethane	5	µg/L	2.5	2.1	2.4	ND
1,2-Dichloroethane	0.6	µg/L	0.45 J	ND	0.36 J	ND
1,1-Dichloroethene	5	µg/L	3.9	1.4	3.4	ND
cis 1,2-Dichloroethene	5	µg/L	29.6	1.3	23.6	ND
trans 1,2-Dichloroethene	5	µg/L	0.40 J	ND	0.32 J	ND
Tetrachloroethene	5	µg/L	65.5	0.37 J	51.8 J	ND
1,1,1-Trichloroethene	5	µg/L	3.3	0.84 J	2.8 J	ND
Trichloroethene	5	µg/L	233	233	233	ND
Vinyl Chloride	2	µg/L	1.5 J	ND	1.2 J	ND
Mercury	0.25	µg/L	ND	ND	ND	ND
Total Suspended Solids (TSS)	N/A	mg/L	ND	ND	ND	ND

**Notes:**

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

ND - Not detected above laboratory method detection limit

N/A - Not Applicable

(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
January 2013**

DAR Parameters	Units	SGC	January 2013	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	1/14/13	
Average Flowrate	CFM	N/A	NR	8,164
Total Flow	ft <sup>3</sup>	N/A	NR	364,423,104
Total Flow	m <sup>3</sup>	N/A	NR	10,319,313
1,2-Dichloroethane	µg/m <sup>3</sup>	N/A	4.0 J	2.0 J
cis 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	260	3.4
trans 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	5.2 J	ND
1,2-Dichloroethene (total)	µg/m <sup>3</sup>	N/A	260	3.4
Toluene	µg/m <sup>3</sup>	37,000	1.9 J	ND
Total Xylene	µg/m <sup>3</sup>	4,300	ND	ND
1,1,2-Trichloroethane	µg/m <sup>3</sup>	N/A	ND	ND
Trichloroethene	µg/m <sup>3</sup>	14,000	2600	11
Vinyl Chloride	µg/m <sup>3</sup>	180,000	9.6	ND
Tetrachloroethene	µg/m <sup>3</sup>	1,300	540	1.9 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

SGC - Short-term Guideline Concentration

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
January 2013**

<b>DAR Parameters</b>	<b>Units</b>	<b>Discharge Goal</b>	<b>January 2013</b>
Sampling Date	N/A	N/A	1/14/13
Average Flowrate	CFM	N/A	8,164
Total Flow	ft <sup>3</sup>	N/A	364,423,104
Total Flow	m <sup>3</sup>	N/A	10,319,313
Trichloroethene	lb/hr	0.09	0.00034
Vinyl Chloride	lb/hr	0.01	0.00000
1,2 Dichloroethene	lb/hr	0.03	0.00010
1,2-Dichloroethane	lb/hr	BRT	0.00006
Toluene	lb/hr	BRT	0.00000
Total Xylene	lb/hr	BRT	0.00000
1,1,2-Trichloroethane	lb/hr	BRT	0.00000
Tetrachloroethene	lb/hr	0.02	0.00006

Notes:

BRT - below reporting thresholds

CFM - cubic feet per minute

DAR - Division of Air Resources

N/A - Not Applicable

**FEBRUARY 2013**



13 March 2013

Mr. Steven Scharf  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Action, Bureau A  
625 Broadway  
Albany, NY 12233-7015

**Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT  
GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2  
FEBRUARY 2013 REPORTING PERIOD**

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) 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 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 February 2013 to 28 February 2013 are included in Attachment A. All constituents were within permit limitations during this reporting period.

Please contact me at 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,  
H&S Environmental, Inc.

Jennifer Good, P.G.  
Project Manager

Attachment A: Groundwater and Air Sampling Results from February 2013

Cc: Jean Occidental - NYSDEC Division of Water  
William Spitz - NYSDEC – Region 1 Water Engineer  
Gerard Ennis - Nassau County Department of Public Works  
Linda Bianculli - Town of Oyster Bay  
Lora Fly - NAVFAC Mid-Atlantic RPM  
Al Taormina – H&S  
GM-38 Copy

**ATTACHMENT A**  
**GROUNDWATER AND AIR SAMPLING RESULTS**  
**FEBRUARY 2013**

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
February 2013**

SPDES Parameters	February 2013					
Process Stream	Daily Treated Effluent Maximum	Units	RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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		2/15/13			
Average Flowrate	1100	GPM	614	182	797	846
Total Flow	N/A	gallons	24,769,813	7,346,300	32,116,113	34,109,600
pH	5.5 - 8.5	SU	5.7	5.4	5.6	6.1
Carbon Tetrachloride	NA	µg/L	0.34 J	ND	0.26 J	ND
1,1-Dichloroethane	5	µg/L	2.9	2.6	2.8	ND
1,2-Dichloroethane	0.6	µg/L	0.49 J	ND	0.38 J	ND
1,1-Dichloroethene	5	µg/L	5.1	1.9	4.4	ND
cis 1,2-Dichloroethene	5	µg/L	34.1	2.0	26.8	ND
trans 1,2-Dichloroethene	5	µg/L	0.70 J	ND	0.54 J	ND
Tetrachloroethene	5	µg/L	73.6	0.74 J	56.9 J	ND
1,1,1-Trichloroethene	5	µg/L	3.8	1.0	3.2	ND
Trichloroethene	5	µg/L	208	228	213	0.36 J
Vinyl Chloride	2	µg/L	1.1 J	ND	0.85 J	ND
Mercury	0.25	µg/L	ND	ND	ND	ND
Total Suspended Solids (TSS)	N/A	mg/L	ND	ND	ND	ND

**Notes:**

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

ND - Not detected above laboratory method detection limit

N/A - Not Applicable

(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
February 2013**

DAR Parameters	Units	SGC	February 2013	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	2/12/13	
Average Flowrate	CFM	N/A	NR	8,164
Total Flow	ft <sup>3</sup>	N/A	NR	329,156,352
Total Flow	m <sup>3</sup>	N/A	NR	9,320,670
1,2-Dichloroethane	µg/m <sup>3</sup>	N/A	3.1 J	1.6 J
cis 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	260	4.6
trans 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	3.8 J	ND
1,2-Dichloroethene (total)	µg/m <sup>3</sup>	N/A	260	4.8
Toluene	µg/m <sup>3</sup>	37,000	2.0 J	ND
Total Xylene	µg/m <sup>3</sup>	4,300	ND	ND
1,1,2-Trichloroethane	µg/m <sup>3</sup>	N/A	3.1 J	ND
Trichloroethene	µg/m <sup>3</sup>	14,000	2600	15
Vinyl Chloride	µg/m <sup>3</sup>	180,000	8.6	0.99 J
Tetrachloroethene	µg/m <sup>3</sup>	1,300	560	3.0 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

SGC - Short-term Guideline Concentration



**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
February 2013**

<b>DAR Parameters</b>	<b>Units</b>	<b>Discharge Goal</b>	<b>February 2013</b>
Sampling Date	N/A	N/A	2/12/13
Average Flowrate	CFM	N/A	8,164
Total Flow	ft <sup>3</sup>	N/A	329,156,352
Total Flow	m <sup>3</sup>	N/A	9,320,670
Trichloroethene	lb/hr	0.09	0.00041
Vinyl Chloride	lb/hr	0.01	0.00000
1,2 Dichloroethene	lb/hr	0.03	0.00013
1,2-Dichloroethane	lb/hr	BRT	0.00004
Toluene	lb/hr	BRT	0.00000
Total Xylene	lb/hr	BRT	0.00000
1,1,2-Trichloroethane	lb/hr	BRT	0.00000
Tetrachloroethene	lb/hr	0.02	0.00008

Notes:

BRT - below reporting thresholds

CFM - cubic feet per minute

DAR - Division of Air Resources

N/A - Not Applicable

**MARCH 2013**



16 April 2013

Mr. Steven Scharf  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Action, Bureau A  
625 Broadway  
Albany, NY 12233-7015

**Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT  
GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2  
MARCH 2013 REPORTING PERIOD**

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) 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 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 March 2013 to 31 March 2013 are presented in Attachment A. During this reporting period, unscheduled downtime occurred on 9-10 March 2013 due to power outages and scheduled downtime occurred on 29-31 March 2013 for performance of a pump test. Both scheduled and unscheduled downtime resulted in lower than 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 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,  
H&S Environmental, Inc.

Jennifer Good, P.G.  
Project Manager

Attachment A: Groundwater and Air Sampling Results from March 2013

Cc: Jean Occidental - NYSDEC Division of Water  
William Spitz - NYSDEC – Region 1 Water Engineer  
Gerard Ennis - Nassau County Department of Public Works  
Linda Bianculli - Town of Oyster Bay  
Lora Fly - NAVFAC Mid-Atlantic RPM  
Al Taormina – H&S  
GM-38 Copy

**ATTACHMENT A**  
**GROUNDWATER AND AIR SAMPLING RESULTS**  
**MARCH 2013**

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
March 2013**

SPDES Parameters	March 2013					
Process Stream	Daily Treated Effluent Maximum	Units	RW-1	RW-3	Combined Influent <sup>(1)</sup> (RW-1 + RW-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		3/15/13			
Average Flowrate	1100	GPM	630	163	793	824
Total Flow	N/A	gallons	28,108,288	7,272,500	35,380,788	36,763,900
pH	5.5 - 8.5	SU	4.50	4.71	4.54	6.20
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.7 J	2.5 J	2.7 J	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	4.2 J	1.5 J	3.6 J	ND
cis 1,2-Dichloroethene	5	µg/L	26.8	1.8 J	21.7 J	ND
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	57.5	ND	45.7	ND
1,1,1-Trichloroethene	5	µg/L	3.1 J	ND	2.5 J	ND
Trichloroethene	5	µg/L	234	237	235	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND
Mercury	0.25	µg/L	ND	ND	ND	ND
Total Suspended Solids (TSS)	N/A	mg/L	ND	ND	ND	ND

**Notes:**

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

ND - Not detected above laboratory method detection limit

N/A - Not Applicable

(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
March 2013**

DAR Parameters	Units	SGC	March 2013	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	3/5/13	
Average Flowrate	CFM	N/A	NR	8,238
Total Flow	ft <sup>3</sup>	N/A	NR	367,755,480
Total Flow	m <sup>3</sup>	N/A	NR	10,413,676
1,2-Dichloroethane	µg/m <sup>3</sup>	N/A	2.3 J	ND
cis 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	150	4.7
trans 1,2-Dichloroethene	µg/m <sup>3</sup>	N/A	1.7 J	ND
1,2-Dichloroethene (total)	µg/m <sup>3</sup>	N/A	150	4.8
Toluene	µg/m <sup>3</sup>	37,000	2.4 J	ND
Total Xylene	µg/m <sup>3</sup>	4,300	1.9 J	ND
1,1,2-Trichloroethane	µg/m <sup>3</sup>	N/A	ND	ND
Trichloroethene	µg/m <sup>3</sup>	14,000	1800	10
Vinyl Chloride	µg/m <sup>3</sup>	180,000	5.1	ND
Tetrachloroethene	µg/m <sup>3</sup>	1,300	440	2.2 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

SGC - Short-term Guideline Concentration

**GM-38 Area Groundwater Remediation  
Groundwater Treatment Plant  
Naval Weapons Industrial Reserve Plant - Bethpage, NY  
Controlled Stack Emissions  
March 2013**

<b>DAR Parameters</b>	<b>Units</b>	<b>Discharge Goal</b>	<b>March 2013</b>
Sampling Date	N/A	N/A	3/5/13
Average Flowrate	CFM	N/A	8,238
Total Flow	ft <sup>3</sup>	N/A	367,755,480
Total Flow	m <sup>3</sup>	N/A	10,413,676
Trichloroethene	lb/hr	0.09	0.00031
Vinyl Chloride	lb/hr	0.01	0.00000
1,2 Dichloroethene	lb/hr	0.03	0.00015
1,2-Dichloroethane	lb/hr	BRT	0.00000
Toluene	lb/hr	BRT	0.00000
Total Xylene	lb/hr	BRT	0.00000
1,1,2-Trichloroethane	lb/hr	BRT	0.00000
Tetrachloroethene	lb/hr	0.02	0.00007

Notes:

BRT - below reporting thresholds

CFM - cubic feet per minute

DAR - Division of Air Resources

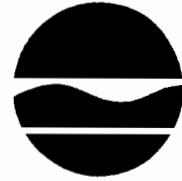
N/A - Not Applicable



## **APPENDIX B**

### **NYSDEC AIR PERMIT EQUIVALENT APPROVAL**

**New York State Department of Environmental Conservation**  
**Division of Environmental Remediation**  
**Bureau of Remedial Action A**  
**625 Broadway, 11<sup>th</sup> Floor**  
**Albany, New York 12233-7015**  
**Phone: (518) 402-9625 • Fax: (518) 402-9022**  
**Website: [www.dec.state.ny.us](http://www.dec.state.ny.us)**



Alexander P.  
Grannis  
Commissioner

July 24, 2009

Lora Fly, Project Manager  
Naval Facilities Engineering Command-Midlant  
9742 Maryland Avenue  
Norfolk, VA 23511-3095

RE: Naval Weapons Industrial Research Plant(NWIRP)  
Site-Bethpage, NYSDEC No. 1-30-003B.  
Grumman Aerospace Site, NYSDEC Site No. 1-30-003A

Dear Ms. Fly:

Tetra Tech FW, on behalf of the Department of the Navy (Navy), has submitted the enclosed New York State Department of Environmental Conservation (NYSDEC) Division of Air Resources (DAR) Air Permit Application as a permit equivalent. This DAR Air permit equivalent is for the air stripper discharge at the GM 38 Area groundwater remediation system, Near Broadway and North Herman Avenue in Bethpage, NY. The NYSDEC Division of Environmental Remediation (DER) has reviewed the permit equivalent and, by means of this letter approves the GM 38 Area remedy air discharge for immediate operation.

The GM 38 Area remedial system utilizes the best available control technology (BACT) with activated carbon followed by potassium permanganate impregnated zeolite resin. The air discharge will be periodically monitored at start up and will be added for routine monitoring in the operation, maintenance and monitoring (OMM) plan, to be submitted shortly for Departmental review.

If you have any questions, please contact me at your earliest convenience at (518)402-9620.

Sincerely,

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

Enclosure  
ec/w/enc:

J. Swartwout/S. Scharf/File  
W. Parish, Region 1 NYSDEC  
A. J. Shah, region 1 NYSDEC  
S. Patselos, Tetra Tech FW  
J. Cofman, Northrop Grumman]

docs: Region 1, Nassau, Oyster Bay (T): Grumman Aerospace 130003A-OU2-OMM and NWIRP Bethpage 130003B-OU2-OMM

# 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 <u>N/A</u>	<input type="checkbox"/> New	<input type="checkbox"/> Significant Modification	<input type="checkbox"/> Administrative Amendment	State Facility Permit <u>N/A</u>	<input type="checkbox"/> New	<input type="checkbox"/> Modification
<input type="checkbox"/> Renewal	<input type="checkbox"/> Minor Modification	General Permit Title: _____		General Permit Title: _____		
<input checked="" type="checkbox"/> Application involves construction of new facility			<input type="checkbox"/> Application involves construction of new emission unit(s)			

Owner/Firm			
Name <u>US Navy/NAVFAC Midlant</u>			
Street Address <u>9742 Maryland Ave, Bldg Z-144</u>			
City <u>Norfolk</u>	State <u>VA</u>	Country <u>US</u>	Zip <u>23511-3095</u>
Owner Classification <input checked="" type="checkbox"/> Federal		<input type="checkbox"/> State	<input type="checkbox"/> Municipal
<input type="checkbox"/> Corporation/Partnership		<input type="checkbox"/> Individual	Taxpayer ID
Facility <input type="checkbox"/> Confidential			
Name <u>Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area</u>			
Location Address <u>Bethpage</u>			
<input type="checkbox"/> City / <input checked="" type="checkbox"/> Town / <input type="checkbox"/> Village <u>Oyster Bay, New York</u>			Zip <u>11714</u>
Project Description <input type="checkbox"/> Continuation Sheet(s)			
<u>Air stripping of groundwater to remove VOCs</u>			

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

New York State Department of Environmental Conservation  
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**Section III - Facility Information**

Classification					
<input type="checkbox"/> Hospital	<input type="checkbox"/> Residential	<input type="checkbox"/> Educational/Institutional	<input type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Utility

Affected States (Title V Only) N/A					
<input type="checkbox"/> Vermont	<input type="checkbox"/> Massachusetts	<input type="checkbox"/> Rhode Island	<input type="checkbox"/> Pennsylvania	Tribal Land: _____	
<input type="checkbox"/> New Hampshire	<input type="checkbox"/> Connecticut	<input type="checkbox"/> New Jersey	<input type="checkbox"/> Ohio	Tribal Land: _____	

SIC Codes									
9999									

Facility Description		<input type="checkbox"/> Continuation Sheet(s)
Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control		

Compliance Statements (Title V Only) N/A	
<p>I certify that as of the date of this application the facility is in compliance with all applicable requirements: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>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 <u>in compliance</u> with all applicable requirements complete the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> 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.</li> </ul>	

Facility Applicable Federal Requirements N/A										<input type="checkbox"/> 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										<input type="checkbox"/> 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



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**Section III - Facility Information (continued)**

Facility Compliance Certification										N/A	<input type="checkbox"/> Continuation Sheet(s)	
Rule Citation												
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause			
<input type="checkbox"/> Applicable Federal Requirement		<input type="checkbox"/> Capping		CAS No.			Contaminant Name					
<input type="checkbox"/> State Only Requirement												
Monitoring Information												
<input type="checkbox"/> Ambient Air Monitoring			<input type="checkbox"/> Work Practice Involving Specific Operations				<input type="checkbox"/> Record Keeping/Maintenance Procedures					
Description												
Work Practice		Process Material					Reference Test Method					
Type	Code	Description										
		Parameter					Manufacturer Name/Model No.					
Code		Description										
Limit				Limit Units								
Upper		Lower		Code		Description						
Averaging Method			Monitoring Frequency				Reporting Requirements					
Code	Description		Code	Description			Code	Description				

Facility Emissions Summary										<input type="checkbox"/> Continuation Sheet(s)	
CAS No.		Contaminant Name					PTE		Actual (lbs/yr)		
							(lbs/yr)	Range Code			
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  
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**Section IV - Emission Unit Information**

Emission Unit Description										<input type="checkbox"/> Continuation Sheet(s)
EMISSION UNIT	0	-	0	0	E	U	1			
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					<input type="checkbox"/> Continuation Sheet(s)	
Building	Building Name			Length (ft)	Width (ft)	Orientation
BLDG-1	Treatment Plant			75	75	0

Emission Point							<input type="checkbox"/> Continuation Sheet(s)
EMISSION PT.	00ST1						
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section		
90	40	15	36	80	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	
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								<input type="checkbox"/> Continuation Sheet(s)
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
AS-1	I				048	Granular Act. Carbon	Air Stripping Column	
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	

New York State Department of Environmental Conservation  
Air Permit Application



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-									

**Section IV - Emission Unit Information (continued)**

Process Information										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT 0 - 00 E U 1								PROCESS		PR 1	
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						
<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> 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						
<input type="checkbox"/> Confidential <input type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> 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  
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-									

**Section IV - Emission Unit Information (continued)**

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements										<input type="checkbox"/> 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										<input type="checkbox"/> Continuation Sheet(s)	
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause		
-															
-															
-															
-															

Emission Unit Compliance Certification											<input type="checkbox"/> Continuation Sheet(s)
<b>Rule Citation</b>											
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause		
6	NYCRR	212									
<input checked="" type="checkbox"/> Applicable Federal Requirement				<input type="checkbox"/> State Only Requirement				<input type="checkbox"/> Capping			
Emission Unit	Emission Point	Process	Emission Source	CAS No.			Contaminant Name				
0-00EU1	00ST1	PR1	AS-1	00079 - 01 - 6			Trichloroethylene				
<b>Monitoring Information</b>											
<input type="checkbox"/> Continuous Emission Monitoring <input checked="" type="checkbox"/> Intermittent Emission Testing <input type="checkbox"/> Ambient Air Monitoring				<input type="checkbox"/> Monitoring of Process or Control Device Parameters as Surrogate <input type="checkbox"/> Work Practice Involving Specific Operations <input type="checkbox"/> Record Keeping/Maintenance Procedures							
<b>Description</b>											
Monthly grab samples analyzed for VOCs from the vapor phase treatment system influent, effluent and two intermediate locations.											
Work Practice		Process Material					Reference Test Method				
Type	Code	Description									
Parameter		Manufacturer Name/Model No.									
Code	Description										
23	Concentration										
Limit			Limit Units								
Upper	Lower	Code	Description								
3,125		255	micrograms per cubic meter								
Averaging Method			Monitoring Frequency			Reporting Requirements					
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
01	Instantaneous	05	Monthly	10	Upon Request						



New York State Department of Environmental Conservation  
Air Permit Application



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**Section IV - Emission Unit Information (continued)**

Determination of Non-Applicability (Title V Only) N/A <input type="checkbox"/> 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			<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> 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			<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> State Only Requirement				
Description										
Process Emissions Summary <input type="checkbox"/> Continuation Sheet(s)										
EMISSION UNIT	0 - 0 0 E U 1					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			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.09	99			02						
EMISSION UNIT	0 - 0 0 E U 1					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			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.01	3.7			02						
EMISSION UNIT	0 - 0 0 E U 1					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			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.03	7.3			02						

New York State Department of Environmental Conservation  
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information (continued)

EMISSION UNIT		Emission Unit Emissions Summary				<input type="checkbox"/> Continuation Sheet(s)
0	-	0	0	E	U	1
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													<input type="checkbox"/> Continuation Sheet(s)
For any emission units which are <u>not in compliance</u> 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	

New York State Department of Environmental Conservation  
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**Section IV - Emission Unit Information (continued)**

Request for Emission Reduction Credits										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT -											
Emission Reduction Description											
Contaminant Emission Reduction Data											
Baseline Period ____ / ____ / ____ to ____ / ____ / ____						Reduction					
						Date		Method			
						/ /					
CAS No.			Contaminant Name			ERC (lbs/yr)					
-			-			Netting			Offset		
-			-			-			-		
-			-			-			-		
Facility to Use Future Reduction											
Name						APPLICATION ID					
						- / -					
Location Address											
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State			Zip		

Use of Emission Reduction Credits										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT -											
Proposed Project Description											
Contaminant Emissions Increase Data											
CAS No.			Contaminant Name			PEP (lbs/yr)					
-			-			-					
Statement of Compliance											
<input type="checkbox"/> 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											
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State			Zip		
Emission Unit		CAS No.		Contaminant Name		ERC (lbs/yr)					
-		-		-		Netting			Offset		
-		-		-		-			-		
-		-		-		-			-		



DEC ID									
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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): \_\_\_\_\_ ( \_\_\_\_ / \_\_\_\_ / \_\_\_\_ )  
 \_\_\_\_\_ ( \_\_\_\_ / \_\_\_\_ / \_\_\_\_ )  
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 \_\_\_\_\_ ( \_\_\_\_ / \_\_\_\_ / \_\_\_\_ )

**ATTACHMENT 1  
Emission Estimate**

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

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

Name	CAS Number	Toxicity: H/M/L <sup>2</sup>	VOC <sup>3</sup>	HAP <sup>4</sup>	GW Conc. <sup>1</sup>		Effluent Conc <sup>1</sup>		Uncontrolled Stripper Exhaust							
					Max ug/L	Avg ug/L	Max ug/L	Avg ug/L	Max lb/day	Avg lb/day	Max lb/hr	Avg lb/hr	Max gm/sec	Avg gm/sec	Max ug/m <sup>3</sup>	Avg ug/m <sup>3</sup>
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<sup>3</sup>/hr  
Water Flow Including Recycle 1,200 gpm: max or normal  
273 m<sup>3</sup>/hr  
Air Flow 8,000 cfm  
13,592 m<sup>3</sup>/hr  
A/W vol ratio 50

Name	CAS Number	Toxicity: H/M/L <sup>2</sup>	VOC <sup>3</sup>	HAP <sup>4</sup>	Control by GAC	Max lb/day	Avg lb/day	Controlled Stripper Exhat	
								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 2  
AIR SCREENING ANALYSIS:  
Annual**

<b>BETHPAGE SCREENING ANALYSIS</b>				1-Hour Impact	405.7	(ug/m <sup>3</sup> )		
<b>ANNUAL IMPACTS COMPARED TO ANNUAL GUIDELINE CONCENTRATIONS (AGCs)</b>				Annual Impact	32.456	(ug/m <sup>3</sup> )		
<b>Pollutant</b>	<b>CAS Number</b>	<b>NYSDEC Guideline AGC (ug/m<sup>3</sup>)</b>	<b>Estimated Emissions</b>		<b>Predicted Annual Impact</b>		<b>Maximum Percent of AGC</b>	
			<b>Uncontrolled (g/s)</b>	<b>Controlled (g/s)</b>	<b>Uncontrolled (ug/m<sup>3</sup>)</b>	<b>Controlled (ug/m<sup>3</sup>)</b>	<b>Uncontrolled Pct</b>	<b>Controlled Pct</b>
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	1000.00	2.08E-04	1.04E-05	0.0068	0.0003	0.0%	0.0%
1,1,2-Trichloroethane	00079-00-5	1.40	2.08E-05	1.04E-06	0.0007	0.0000	0.0%	0.0%
1,1-Dichloroethane	00075-34-3	0.63	4.85E-05	2.43E-06	0.0016	0.0001	0.3%	0.0%
1,2-Dichloroethane	00107-06-2	0.04	6.24E-05	3.12E-06	0.0020	0.0001	5.3%	0.3%
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	70.00	1.11E-04	5.55E-06	0.0036	0.0002	0.0%	0.0%
1,2-Dichloroethylene	00540-59-0	63.00	2.18E-03	1.09E-04	0.0709	0.0035	0.1%	0.0%
Benzene	00071-43-2	0.13	6.94E-06	3.47E-07	0.0002	0.0000	0.2%	0.0%
Carbon Tetrachloride	00056-23-5	0.07	6.94E-06	3.47E-07	0.0002	0.0000	0.3%	0.0%
Chlorobenzene (Monochlorobenzene)	00108-90-7	110.00	6.94E-06	3.47E-07	0.0002	0.0000	0.0%	0.0%
Chloroform	00067-66-3	0.04	5.55E-05	2.77E-06	0.0018	0.0001	4.2%	0.2%
Methyl tert-Butyl Ether	01634-04-4	3000.00	6.94E-06	3.47E-07	0.0002	0.0000	0.0%	0.0%
Tetrachloroethylene	00127-18-4	1.00	2.34E-03	1.17E-04	0.0761	0.0038	7.6%	0.4%
Toluene	00108-88-3	5000.00	4.85E-05	2.43E-06	0.0016	0.0001	0.0%	0.0%
Trichloroethylene	00079-01-6	0.50	2.85E-02	1.43E-03	0.9252	0.0463	<b>185.0%</b>	9.3%
Vinyl Chloride	00075-01-4	0.11	3.33E-04	1.66E-05	0.0108	0.0005	9.8%	0.5%
Xylenes	01330-20-7	100.00	1.39E-05	6.94E-07	0.0005	0.0000	0.0%	0.0%

**ATTACHMENT 2  
AIR SCREENING ANALYSIS:  
Short term**

<b>BETHPAGE SCREENING ANALYSIS</b>					1-Hour Impact	405.7	(ug/m <sup>3</sup> )	
<b>SHORT-TERM IMPACTS COMPARED TO SHORT-TERM GUIDELINE CONCENTRATIONS (SGCs)</b>					Annual Impact	32.456	(ug/m <sup>3</sup> )	
<b>Pollutant</b>	<b>CAS Number</b>	<b>NYSDEC Guideline SGC (ug/m<sup>3</sup>)</b>	<b>Estimated Emissions</b>		<b>Predicted Short-term Impact</b>		<b>Maximum Percent of SGC</b>	
			<b>Uncontrolled (g/s)</b>	<b>Controlled (g/s)</b>	<b>Uncontrolled (ug/m<sup>3</sup>)</b>	<b>Controlled (ug/m<sup>3</sup>)</b>	<b>Uncontrolled Pct</b>	<b>Controlled Pct</b>
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	68000.00	2.08E-04	1.04E-05	0.084	0.004	0.0%	0.0%
1,1,2-Trichloroethane	00079-00-5	-	2.43E-04	1.21E-05	0.098	0.005	-	-
1,1-Dichloroethane	00075-34-3	-	2.77E-04	1.39E-05	0.113	0.006	-	-
1,2-Dichloroethane	00107-06-2	-	1.87E-04	9.36E-06	0.076	0.004	-	-
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	-	6.24E-04	3.12E-05	0.253	0.013	-	-
1,2-Dichloroethylene	00540-59-0	-	7.62E-02	3.81E-03	30.915	1.546	-	-
Benzene	00071-43-2	1300.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Carbon Tetrachloride	00056-23-5	1900.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Chlorobenzene (Monochlorobenzene)	00108-90-7	-	6.94E-05	3.47E-06	0.028	0.001	-	-
Chloroform	00067-66-3	150.00	1.39E-04	6.94E-06	0.056	0.003	0.0%	0.0%
Methyl tert-Butyl Ether	01634-04-4	-	1.39E-04	6.94E-06	0.056	0.003	-	-
Tetrachloroethylene	00127-18-4	1000.00	6.24E-02	3.12E-03	25.298	1.265	2.5%	0.1%
Toluene	00108-88-3	37000.00	1.04E-03	5.20E-05	0.422	0.021	0.0%	0.0%
Trichloroethylene	00079-01-6	14000.00	2.35E-01	1.18E-02	95.541	4.777	0.7%	0.0%
Vinyl Chloride	00075-01-4	180000.00	2.08E-02	1.04E-03	8.441	0.422	0.0%	0.0%
Xylenes	01330-20-7	4300.00	1.11E-03	5.55E-05	0.450	0.023	0.0%	0.0%



**ATTACHMENT 2  
AIR SCREENING ANALYSIS:  
Short term**

BETHPAGE SCREENING ANALYSIS					1-Hour Impact	405.7	(ug/m <sup>3</sup> )	
SHORT-TERM IMPACTS COMPARED TO SHORT-TERM GUIDELINE CONCENTRATIONS (SGCs)					Annual Impact	32.456	(ug/m <sup>3</sup> )	
Pollutant	CAS Number	NYSDEC Guideline SGC (ug/m <sup>3</sup> )	Estimated Emissions		Predicted Short-term Impact		Maximum Percent of SGC	
			Uncontrolled (g/s)	Controlled (g/s)	Uncontrolled (ug/m <sup>3</sup> )	Controlled (ug/m <sup>3</sup> )	Uncontrolled Pct	Controlled Pct
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	68000.00	2.08E-04	1.04E-05	0.084	0.004	0.0%	0.0%
1,1,2-Trichloroethane	00079-00-5	-	2.43E-04	1.21E-05	0.098	0.005	-	-
1,1-Dichloroethane	00075-34-3	-	2.77E-04	1.39E-05	0.113	0.006	-	-
1,2-Dichloroethane	00107-06-2	-	1.87E-04	9.36E-06	0.076	0.004	-	-
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	-	6.24E-04	3.12E-05	0.253	0.013	-	-
1,2-Dichloroethylene	00540-59-0	-	7.62E-02	3.81E-03	30.915	1.546	-	-
Benzene	00071-43-2	1300.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Carbon Tetrachloride	00056-23-5	1900.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Chlorobenzene (Monochlorobenzene)	00108-90-7	-	6.94E-05	3.47E-06	0.028	0.001	-	-
Chloroform	00067-66-3	150.00	1.39E-04	6.94E-06	0.056	0.003	0.0%	0.0%
Methyl tert-Butyl Ether	01634-04-4	-	1.39E-04	6.94E-06	0.056	0.003	-	-
Tetrachloroethylene	00127-18-4	1000.00	6.24E-02	3.12E-03	25.298	1.265	2.5%	0.1%
Toluene	00108-88-3	37000.00	1.04E-03	5.20E-05	0.422	0.021	0.0%	0.0%
Trichloroethylene	00079-01-6	14000.00	2.35E-01	1.18E-02	95.541	4.777	0.7%	0.0%
Vinyl Chloride	00075-01-4	180000.00	2.08E-02	1.04E-03	8.441	0.422	0.0%	0.0%
Xylenes	01330-20-7	4300.00	1.11E-03	5.55E-05	0.450	0.023	0.0%	0.0%

03/16/09  
11:26:15

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

Bethpage GM-38 Air Stripper Uncontrolled

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = 1.00000  
STACK HEIGHT (M) = 12.2000  
STK INSIDE DIAM (M) = .9100  
STK EXIT VELOCITY (M/S) = 5.7700  
STK GAS EXIT TEMP (K) = 294.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 7.6000  
MIN HORIZ BLDG DIM (M) = 22.9000  
MAX HORIZ BLDG DIM (M) = 22.9000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .040 M\*\*4/S\*\*3; MOM. FLUX = 6.869 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.1323E-07	1	1.5	1.5	480.0	22.39	3.65	2.99	NO
100.	278.3	3	1.0	1.0	320.0	27.34	22.00	20.46	NO
200.	339.9	6	1.0	1.1	10000.0	20.81	21.31	14.25	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

201.	339.9	6	1.0	1.1	10000.0	20.81	21.51	14.37	NO
------	-------	---	-----	-----	---------	-------	-------	-------	----

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 2. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
210.	405.7	6	1.0	1.1	10000.0	18.81	22.32	14.86	NO
300.	307.9	6	1.0	1.1	10000.0	18.81	31.28	20.08	NO
400.	219.2	6	1.0	1.1	10000.0	18.81	40.93	25.42	NO

500.	162.3	6	1.0	1.1	10000.0	18.81	50.27	30.34	NO
600.	125.2	6	1.0	1.1	10000.0	18.81	59.32	34.91	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 210. M:

210.	405.7	6	1.0	1.1	10000.0	18.81	22.32	14.86	NO
------	-------	---	-----	-----	---------	-------	-------	-------	----

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
610.	133.2	6	1.0	1.1	10000.0	11.81	60.21	35.35	NO
700.	107.4	6	1.0	1.1	10000.0	11.81	68.10	39.19	NO
800.	87.22	6	1.0	1.1	10000.0	11.81	76.63	43.22	NO
900.	72.75	6	1.0	1.1	10000.0	11.81	84.93	47.03	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 610. M:

610.	133.2	6	1.0	1.1	10000.0	11.81	60.21	35.35	NO
------	-------	---	-----	-----	---------	-------	-------	-------	----

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 11. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1000.	62.47	6	1.0	1.1	10000.0	9.81	93.00	50.66	NO
1100.	54.05	6	1.0	1.1	10000.0	9.81	100.86	54.11	NO
1200.	47.42	6	1.0	1.1	10000.0	9.81	108.53	57.42	NO
1300.	42.10	6	1.0	1.1	10000.0	9.81	116.01	60.60	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1000. M:

1000.	62.47	6	1.0	1.1	10000.0	9.81	93.00	50.66	NO
-------	-------	---	-----	-----	---------	------	-------	-------	----

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
0.	10.	200.
2.	210.	600.
9.	610.	920.

11. 1000. 1300.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
PERFORMING CAVITY CALCULATIONS  
WITH ORIGINAL SCREEN CAVITY MODEL  
(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = .0000  
CRIT WS @10M (M/S) = 99.99  
CRIT WS @ HS (M/S) = 99.99  
DILUTION WS (M/S) = 99.99  
CAVITY HT (M) = 7.84  
CAVITY LENGTH (M) = 22.86  
ALONGWIND DIM (M) = 22.90

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = .0000  
CRIT WS @10M (M/S) = 99.99  
CRIT WS @ HS (M/S) = 99.99  
DILUTION WS (M/S) = 99.99  
CAVITY HT (M) = 7.84  
CAVITY LENGTH (M) = 22.86

## **APPENDIX C**

### **FIELD DATA SHEETS AND CHAIN OF CUSTODY DOCUMENTATION**

Date: 3/13/13



**Groundwater Level Measurement Sheet**

Project Site: NWIRP Bethpage – GM-38  
 Location: Bethpage, NY  
 Field Crew: RM, KG

Water Level Meter: Solinst 57826  
 Weather: clear 47°F  
 Time of Low Tide: N/A  
 Time of High Tide: N/A

Well ID	Time	Depth to Water (ft.)	Total Depth of Well / Screenshot Interval (ft.)	PID (ppm)	Comments
RW1-MW1	10:45	33.30	435 / 395-435	N/A	
RW1-MW2	10:40	34.76	435 / 395-435	" "	Gauge only
RW1-MW3	19:00	28.30	435 / 395-435	" "	
RW2-MW1	10:55	37.39	510 / 470-510	" "	
RW2-MW2	11:00	30.90	510 / 470-510	" "	Gauge only
RW2-MW3	10:50	36.51	510 / 470-510	" "	Gauge only
RW3-MW1	11:18	36.57	350 / 330-350	" "	
RW3-MW2	11:15	38.00	495 / 475-495	" "	
RW3-MW3	11:28	37.41	340 / 320-340	" "	
RW3-MW4	11:25	38.60	495 / 475-495	" "	
TP1	10:25	33.00	470 / 450-470	" "	
IW1-MW1	10:35	35.76	470 / 450-470	" "	Gauge only

Signature: *[Handwritten Signature]*

Date: 3-13-13

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 3/13/13  
 Sampler: Rmastrocola  
 PID: -----



Start Time: <sup>14</sup>~~14~~:55 End Time: 1525

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: ~~35.00~~ 33.60 ft  
 Well Depth: 435.00 ft  
 Water Column: 401.40 ft  
 Total Volume Removed (L): 12.25 L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>2</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
<sup>14</sup> 14:55	1.75	350	34.00							
15:00	1.75	350	34.12	14.96	4.70	204	1.24	220.3	1.21	clear
15:05	1.75	350	34.13	14.73	4.70	204	0.41	224.3	0.54	clear
15:10	1.75	350	34.18	14.63	4.59	203	0.43	232.8	3.65	clear
15:15	1.75	350	34.18	14.64	4.53	202	0.58	237.0	2.26	clear
15:20	1.75	350	34.17	14.68	4.53	204	0.61	239.6	1.80	clear
15:25	1.75	350	34.18	14.64	4.53	204	0.60	242.7	1.95	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
15:25	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW / -MW / - 20130313	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

ROSAMARIONA SIVIA

Signature

3/14/13

Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 3/14/13  
 Sampler: R. Mastrolola  
 PID: -----



Start Time: 14:10 End Time: 14:30

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: 28.30 ft  
 Well Depth: 435 ft  
 Water Column: 406.70 ft  
 Total Volume Removed (L): 5.00 L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>2</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
14:10	2.00	400	28.30	12.60	5.05	372	0.73	222.4	5.12	clear
14:15	0.75	150	28.32	11.86	5.05	372	0.83	221.5	4.79	clear
14:20	0.75	150	28.31	11.63	5.05	370	1.04	220.1	4.95	clear
14:25	0.75	150	28.30	11.70	5.03	368	1.07	220.0	5.20	clear
14:30	0.75	150	28.31	11.64	5.03	367	1.10	219.9	5.96	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
14:30	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 1 -MW 3- 20130314	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

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 \_\_\_\_\_  
 \_\_\_\_\_

R. Mastrolola  
 Signature

3/14/13  
 Date



# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 3/13/13  
 Sampler: Rmastrocola  
 PID: \_\_\_\_\_



Start Time: 17:50 End Time: 18:15

Well Construction: 4"

Depth to Water: 38.25

Well Depth: 510

Water Column: 471.75

Total Volume Removed (L): 3.0 L

Dedicated Pump in Well?: No

### Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>2</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
17:50	0.50	100	38.25	9.83	8.23	123	5.85	211.8	31.6	14 tan
17:55	0.50	100	38.25	9.20	8.37	122	5.31	211.5	29.9	tan
18:00	0.50	100	38.28	9.03	8.28	121	3.52	214.1	15.0	clear
18:05	0.50	100	38.27	9.07	7.94	123	3.30	219.7	12.3	clear
18:10	0.50	100	38.25	9.01	8.	121	2.72	200.9	9.49	clear
18:15	0.50	100	38.28	8.97	8.73	121	2.71	200.8	9.17	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
18:15	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 2 - MW 1 - 20130213	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Rmastrocola  
 Signature

3/14/13  
 Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log



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

Date: 3/14 /13  
 Sampler: R. Mastrocchia  
 PID: \_\_\_\_\_

Start Time: 10:00 End Time: 1040

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: 36.80  
 Well Depth: 350  
 Water Column: 313.20  
 Total Volume Removed (L): 7.0 L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPOS

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>o</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
10:00	1.00	200	36.81							
1015	1.00	200	36.84	8.47	4.11	282	3.39	266.4	14.2	clear
1020	1.00	200	36.83	10.00	4.37	273	1.10	266.3	14.8	clear
1025	1.00	200	36.85	10.04	4.44	271	0.60	247.5	29.3	clear
1030	1.00	200	36.85	10.51	4.48	269	0.61	266.9	28.2	clear
1035	1.00	200	36.87	10.31	4.52	269	0.73	264.5	29.5	clear
1040	1.00	200	36.89	10.35	4.49	268	0.71	263.9	29.1	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1040	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW 1 - 20130314	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1		TSS (SM2540D)

### Comments

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 \_\_\_\_\_  
 \_\_\_\_\_

ROSAMARIA MASTROCCIA

Signature

3/14/13

Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38  
 Location: Bethpage, NY  
 Well ID: RW3 - MW2

Date: 3/14 /13  
 Sampler: Rmastricola  
 PID: \_\_\_\_\_



Start Time: 0900 End Time: 0925

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: 38.00  
 Well Depth: 475  
 Water Column: 437.0  
 Total Volume Removed (L): 10.75 L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>o</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0900	2.0	400	38.00							
0905	1.75	350	38.01	10.10	5.00	165	1.00	237.9	2.45	clear
0910	1.75	350	38.47	10.00	4.99	165	0.84	238.6	3.69	clear
0915	1.75	350	38.40	10.11	4.96	165	0.54	239.8	7.58	clear
0920	1.75	350	38.48	10.46	4.92	164	0.39	242.3	6.88	clear
0925	1.75	350	38.48	9.99	4.96	165	0.40	241.8	5.97	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0925	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW3 -MW2 - 20130314	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Rmastricola  
 Signature

3/14/13  
 Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 3/14/13  
 Sampler: R Mastrocola  
 PID: \_\_\_\_\_



Start Time: 12:25 End Time: 12:55

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: 38.35  
 Well Depth: 340  
 Water Column: 301.65  
 Total Volume Removed (L): 7.0L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

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
1225	1.0	200	38.35							
1230	1.0	200	38.35	10.75	5.09	286	0.63	227.4	7.93	clear
1235	1.0	200	38.38	11.46	5.14	289	0.49	205.6	12.2	clear
1240	1.0	200	38.37	12.00	5.23	290	0.53	197.7	13.4	clear
1245	1.0	200	38.38	11.94	5.22	289	0.48	197.4	10.2	clear
1250	1.0	200	38.38	11.24	5.22	291	0.45	195.0	10.55	clear
1255	1.0	200	38.37	11.19	5.19	288	0.44	197.7	10.36	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1255	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW3 -MW3 -20130314	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

R Mastrocola  
 Signature

3/14/13  
 Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 3/14/13  
 Sampler: R. Mastroluca  
 PID: -----



Start Time: 11:20 End Time: 11:50

Well Construction: 4"  
 Depth to Water: 39.74  
 Well Depth: 495  
 Water Column: 455.20  
 Total Volume Removed (L): 12.25  
 Dedicated Pump in Well?: No

### Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	11911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>2</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
11:20	1.75	350	39.74							
11:25	1.75	350	39.74	13.80	4.52	257	0.55	254.3	4.05	clear
11:30	1.75	350	39.72	13.84	4.40	339	0.27	270.9	34.0	clear
11:35	1.75	350	39.73	13.23	4.47	340	0.26	273.2	32.0	clear
11:40	1.75	350	39.73	10.78	4.44	342	0.81	278.2	28.2	clear
11:45	1.75	350	39.75	9.08	4.38	339	0.39	284.0	25.3	clear
11:50	1.75	350	39.75	8.48	4.34	338	0.41	289.1	24.8	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
11:50	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 - MW 4 - 20130314	500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

R. Mastroluca  
 Signature

3/14/13  
 Date

# H&S Environmental, Inc.

## Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38  
 Location: Bethpage, NY  
 Well ID: TP1

Date: 3/13/13  
 Sampler: R MASTROCOLA  
 PID: -----



Start Time: 12:50 End Time: 13:25

### Field Testing Equipment

Well Construction: 4"  
 Depth to Water: 32.82 ft  
 Well Depth: 470.00 ft  
 Water Column: 437.18  
 Total Volume Removed (L): 14.0L  
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	ME15044
QED	MP15	H911
Marschalk Bladder Pump	24"	ID# BPO5

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm <sup>2</sup> )	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1250	2.0	400	32.32							
1255	1.5	300	32.32	13.40	6.11	202	6.13	213.0	1.89	clear
1300	1.75	350	32.31	13.29	6.09	202	6.14	214.8	4.02	clear
1305	1.75	350	32.31	13.44	6.06	207	6.02	215.1	6.10	clear
1310	1.75	350	32.32	13.46	6.05	213	5.93	212.2	4.92	clear
1315	1.75	350	32.31	13.22	6.03	214	5.93	207.4	4.28	clear
1320	1.75	350	32.32	13.55	6.00	215	5.78	204.5	4.08	clear
1325	1.75	350	32.32	13.45	6.03	214	5.83	192.3	3.97	clear

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

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

### Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
13:25	NWIRP-GM-38-GW-TP1-20130313	40 mL CG	3	HCl	TCL VOCs (624)
		500 mL PL	1	HNO <sub>3</sub>	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)
13:25	NWIRP-GM-38-GW-TP-20130313-MS	" "	" "		> NO TSS
13:25	NWIRP-GM-38-GW-TP-20130313-MS	" "	" "		
00:00	DVP-01	" "	" "		

### Comments

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

R Mastrocola  
 Signature

3-14-13  
 Date



### Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38

Date: 3/13/13

Weather: 44°F Sunny

Calibrated By: R. Mastrocola

Instrument: YSI 556

Serial Number: 10H100928

Parameters	Morning Calibration Time: <u>1150</u>	Cal. Temperature °C	Afternoon Cal. Check Time: <u>1845</u>	Comments
Conductivity <u>1413</u> 1000 (µS/cm <sup>2</sup> )	<u>1414</u> / <u>11413</u>	<u>11.01</u>	<u>1397</u>	
pH (7)	<u>7.00</u> / <u>7.00</u>	<u>9.73</u>	<u>7.16</u>	
pH (4)	<u>3.77</u> / <u>4.00</u>	<u>9.24</u>	<u>3.92</u>	
pH (10)	<u>9.96</u> / <u>10.00</u>	<u>9.78</u>	<u>9.83</u>	
ORP <u>240.0</u> (mv)	<u>241.8</u> / <u>240.0</u>	<u>11.01</u>	<u>227.2</u>	
Dissolved Oxygen (%)	<u>100.6</u> / <u>100.6</u>		<u>97.4</u>	
Zero Dissolved Oxygen (mg/L)	<u>—</u>		<u>—</u>	
Barometric Pressure (mmHg)	<u>764.7</u>		<u>765.8</u>	

**pH Check (Every 3 hrs):** Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_  
 (NJ only)

Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_

Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_

Signature: R. Mastrocola

Date: 3-13-13



Batteries Replaced



### Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38

Date: 3/14/13

Weather: 32°F partly cloudy

Calibrated By: R. Mastrocola

Instrument: YSI 556

Serial Number: 10H100928

Parameters	Morning Calibration Time: <u>0720</u>	Cal. Temperature °C	Afternoon Cal. Check Time: <u>1530</u>	Comments
Conductivity <del>1413</del> <del>4000</del> (µS/cm <sup>2</sup> )	<u>1307 / 1413</u>	<u>17.33</u>	<u>1407</u>	
pH (7)	<u>7.16 / 7.00</u>	<u>18.08</u>	<u>7.42</u>	
pH (4)	<u>3.92 / 4.00</u>	<u>18.13</u>	<u>4.01</u>	
pH (10)	<u>9.83 / 9.97</u>	<u>18.24</u>	<u>9.98</u>	
ORP (mv)	<u>227.2 / 240.0</u>	<u>16.84</u>	<u>238.6</u>	
Dissolved Oxygen (%)	<u>97.4 / 100.7</u>	<u>17.49</u>		
Zero Dissolved Oxygen (mg/L)	<u>—</u>	<u>—</u>		
Barometric Pressure (mmHg)	<u>765.8</u>	<u>—</u>		

**pH Check (Every 3 hrs):** Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_  
 (NJ only)

Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_

Time: \_\_\_\_\_  
 Standard: NA  
 Reading: \_\_\_\_\_

Signature: R. Mastrocola

Date: 3-14-13





### Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38

Calibrated By: ROSA MASTROCOLA

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
LaMotte 2020e / ME15044	0.89	0.94	N/A	N/A	1.00	1.00	N/A	N/A	11:50 Time: 3/13/13 & 1840
	0.94	0.96	N/A	N/A	1.00	1.00	N/A	N/A	07:25 Time: 3/14/13 & 1535
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: *Rosa Mastrocola*

Date: 3-14-13



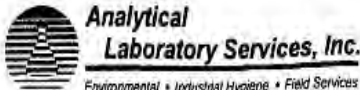
ALS Environmental

34 Dogwood Lane • Middletown, PA 17057 • Phone: 717-944-5511 • Fax: 717-944-1430 • www.alsglobal.com

NELAP Certifications: NJ PA010, NY 11759, PA 22-293, DOD ELAP: AZLA 0818 01  
State Certifications: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343



Page 1 of 2  
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CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE  
CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

**Co. Name:** H&S Environmental, Inc. **Phone:** 608.366.7442

**Contact (Report to):** Jen Good **Address:** 180 E. Main St., Suite 2F  
Westborough, MA 01581

**Bill to (if different than Report to):** Same **PO#: 2031-107**

**Project Name#:** NWIRP Bethpage GM-38 Qtrly LTM **ALSI Quote #:**

**TAT:**  Normal-Standard TAT is 10-12 business days. **Date Required:**  
 Rush-Subject to ALSI approval and surcharges. **Approved By:**

**Email?**  -Y jgood@hsenv.com **Fax?**  -Y No:

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	G or C	Matrix	Enter Number of Containers Per Analysis		
1 NWIRP-GM-38-GW-RW1-MW1-20130313		3/13/13	1525	G	GW	3	1	1
2 NWIRP-GM-38-GW-RW1-MW3-20130314		3/14/13	1430	G	GW	3	1	1
3 NWIRP-GM-38-GW-RW2-MW1-20130313		3/13/13	1815	G	GW	3	1	1
4 NWIRP-GM-38-GW-RW3-MW1-20130314		3/14/13	1040	G	GW	3	1	1
5 NWIRP-GM-38-GW-RW3-MW2-20130314		3/14/13	0925	G	GW	3	1	1
6 NWIRP-GM-38-GW-RW3-MW3-20130314		3/14/13	1255	G	GW	3	1	1
7 NWIRP-GM-38-GW-RW3-MW4-20130314		3/14/13	1150	G	GW	3	1	1
8 NWIRP-GM-38-GW-TP1-20130313 MS/MSD for VOCs, Hg		3/13/13	1315	G	GW	9		

**Container Type:** 40 mL, 500 mL, 250 mL  
**Container Size:** CG, PL, PL  
**Preservative:** HCL, HNO3

**ANALYSES/METHOD REQUESTED:**  
TCL VOCs (Method 624)  
Mercury (Method 245.1)  
TSS (SM2540D)

**Completed by Sampler:** [Signature]  
**Performed by:** [Signature]  
**Cooler Temp:** [Blank]  
**Therm ID:** [Blank]  
**No. of Coolers:** 2  
**Notes:**

**Circle appropriate Y or N:**  
Correct containers?  Y  
Correct sample volume?  Y  
Correct preservation?  Y  
Headspace/Volatiles?  Y  
COC labels complete/accurate?  Y  
Container in good condition?  Y  
Custody seals present?  Y  
Seals intact?  Y  
Received on ice?  Y  
COC labels complete/accurate?  Y

**SAMPLED BY (Please Print):** MASTROCOLA ROSA **LOGGED BY (signature):** [Signature] **DATE:** 3/14/13 **TIME:** 1000

**REVIEWED BY (signature):** [Signature] **DATE:** 3/14/13 **TIME:** 1000

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [Signature]	3/14/13	1000	2 [Signature]	3/14/13	0850
3			4		
5			6		
7			8		
9			10		

**Data Deliverables:**  Standard,  CLP-like,  NJ-Reduced,  NJ-Full  
**State Samples Collected In?:** MD , NJ , NY , PA   
**ALS FIELD SERVICES:**  Pickup,  Labor,  Composite Sampling,  Rental Equipment,  Other  
**Other:** PWSID  
**DOO Criteria Required?**

\* G=Grab; C=Composite \*\* Matrix: A=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater  
\*\*\* Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 5oz., etc. Preservative: HCl, HNO3, NaOH, etc. Rev 08-2003

Canada Burlington • Calgary • Centre of Excellence • Edmonton • Fort McMurray • Fort St. John • Grande Prairie • London • Mississauga • Richmond Hill • Saskatoon • Thunder Bay  
Vancouver Waterloo • Winnipeg • Yellowknife United States: Cincinnati • Everett • Fort Collins • Holland • Houston • Middletown • Salt Lake City • Spring City • York Mexico: Monterrey  
Report ID: 1017222 - 3/28/2013  
ALS Environmental Laboratory Locations Across North America  
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ALS Environmental



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NELAP Certifications: NJ PA010, NY 11759, PA 22-293, DOD ELAP: AZLA 0818 01  
State Certifications: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

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### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT!  
SAMPLER INSTRUCTIONS ON THE BACK

**ALS Environmental**  
Ship to: 34 Dogwood Lane ■ Middletown, PA 17057 ■ 717.944.5541 ■ Fax: 717.944.1430

Co. Name: H&S Environmental, Inc  
Contact (Report to): Jen Good Phone: 508 3667442  
Address: H&S Environmental, Inc.  
160 East Main St 2F  
Westborough, MA 01581

***Container Type	<u>40mL</u>	<u>500mL</u>	<u>250mL</u>								
***Container Size	<u>CG</u>	<u>PL</u>	<u>PL</u>								
***Preservative	<u>HCl</u>	<u>HNO3</u>	<u>-</u>								

Receipt Information (required for State Certificates)  
Received by: [Signature]  
Cooler Temp: [Signature]  
Therm. ID: [Signature]  
No. of Coolers: 2  
Notes:

#### ANALYSES/METHOD REQUESTED

	<u>T.C. VOC's (Method 624)</u>	<u>Mercury (Method 245.1)</u>	<u>TSS (Method 255)</u>								
--	--------------------------------	-------------------------------	-------------------------	--	--	--	--	--	--	--	--

Bill to (if different than Report to): \_\_\_\_\_ PO#: \_\_\_\_\_  
Project Name#: NNIRP Bempage Gm 38 Army LTM ALS Quote #: \_\_\_\_\_  
TAT:  Normal-Standard TAT is 10 business days. Date Required: \_\_\_\_\_  
 Rush-Subject to ALS approval and surcharges. Approved By: \_\_\_\_\_  
Email?  y\_jgood@hseenv.com  
Fax?  -Y No: \_\_\_\_\_

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	Enter Number of Containers Per Analysis					
<u>9 NNIRP-GM-38-GW-DUP1-20130313</u>		<u>3/13/13</u>	<u>00:00</u>	<u>CGW</u>	<u>3</u>	<u>1</u>	<u>1</u>				
<u>10 NNIRP-GM-38-GW-FB1-20130314</u>		<u>3/14/13</u>	<u>15:15</u>	<u>CGW</u>	<u>3</u>	<u>1</u>					
<u>11 NNIRP-GM-38-GW-Trip Blank</u>					<u>3</u>						

Correct containers?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Correct sample volume?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Correct preservation?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Headspace/Volatiles?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Custody Present?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Received on (if person)	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
COC labels completed/accurate?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Container in good condition?	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>

SAMPLED BY (Please Print): <u>MASTROCOLA, ROSA</u>	LOGGED BY (signature): <u>[Signature]</u>				
Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<u>[Signature]</u>	<u>3/14/13</u>	<u>16:00</u>	<u>[Signature]</u>	<u>3/14/13</u>	<u>08:00</u>

Standard  CLP-like  NJ-Reduced  NJ-Full  Other: \_\_\_\_\_  
State Sampler Collected In? MD  NJ  NY  PA   
Data Deliverables:  Standard  CLP-like  NJ-Reduced  NJ-Full  Other: \_\_\_\_\_  
EHLs Required?  If yes, (format type): \_\_\_\_\_  
DOD Criteria Required? \_\_\_\_\_

ALS FIELD SERVICES  
 Pickup  
 Labor  
 Composite Sampling  
 Rental Equipment  
 Other: \_\_\_\_\_

\* G=Grab, C=Composite \*\* Matrix: At=Air; DW=Drinking Water; GW=Groundwater; Ol=Oil; CL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater  
\*\*\* Container Type: AG=Amber Glass; CG=Clear Glass; PL=Plastic. Container Size: 250ml, 500ml, 1L, 9oz., etc. Preservative: HCl, HNO3, NaOH, etc.

### ALS Environmental Laboratory Locations Across North America

## **APPENDIX D**

### **DATA VALIDATION REPORTS AND VALIDATED DATA SUMMARY**

**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:** 2031-108  
**SDG #:** G1017222-HNW-059  
**Client:** H&S Environmental, Inc.  
**Date:** 06/20/2013  
**Laboratory:** ALS Environmental, Middletown, PA  
**Reviewer:** Sherri Pullar

**Summary:**

1. Data validation was performed on the data for nine (9) water samples, one (1) trip blank and one (1) field blank analyzed for Volatiles by EPA Method 624.
2. The samples were collected on 3/13, 14, and 16/2013. The samples were submitted to ALS Environmental, Middletown, PA on 3/16/2013 for analysis.
3. The USEPA Region II SOP HW-24, Revision No.: 2, August 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:

<b>Client Sample ID</b>	<b>Laboratory Sample ID</b>	<b>Collection Date</b>	<b>Matrix</b>	<b>Sample Status</b>
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	3/13/2013	Water	
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	3/14/2013	Water	
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	3/13/2013	Water	
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	3/14/2013	Water	
NWIRP-GM-38-GW-TP1-2013313	1017222008	3/13/2013	Water	
NWIRP-GM-38-DUP01-2013313	1017222009	3/13/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-TP1-2013313
NWIRP-GM-38-FB1-20130314	1017222010	3/13/2013	Water	Field Blank
NWIRP-GM-38-TRIPBLANK	1017222011	3/16/2013	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 3/13/2013 (ms03.i) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

**Continuing Calibration Verification (CCV):**

1. CCV analyzed on 3/18/2013 @ 11:09 PM (ms03.i) exhibited acceptable %Ds ( $\leq 15.0\%$ ) for all compounds with the following exception(s):

Compound	%D
Chloromethane	-27.5
Cis-1,3-Dichloropropene	16.2
Methylene chloride	25.4
Vinyl chloride	-25.6

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, Methylene chloride	UJ UJ J
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ
NWIRP-GM-38-GW-TP1-2013313	1017222008	Chloromethane, cis-1,3-dichloropropene, vinyl chloride, methylene chloride	UJ

2. CCV analyzed on 3/19/2013 @ 7:22 PM (ms03.i) exhibited acceptable %Ds ( $\leq 15.0\%$ ) for all compounds with the following exception(s):

Compound	%D
Acrolein	23.3
Acrylonitrile	30.2
Cis-1,3-dichloropropene	16.0
Methylene chloride	27.5
Vinyl Chloride	-25.7

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM-38-DUP01-2013313	1017222009	Acrolein, acrylonitrile, cis-1,3-dichloropropene, methylene chloride, vinyl chloride	UJ
NWIRP-GM-38-FB1-20130314	1017222010	Acrolein, acrylonitrile, cis-1,3-dichloropropene, methylene chloride, vinyl chloride	UJ
NWIRP-GM-38-TRIPBLANK	1017222011	Acrolein, acrylonitrile, cis-1,3-dichloropropene, methylene chloride, vinyl chloride	UJ

**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 (1108752) analyzed on 3/19/2013 was free of contamination with the exception of the following:

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
1108752	Methylene chloride	0.35	1.75	NWIRP-GM-38-GW-RW1-MW1-2013313 NWIRP-GM-38-GW-RW1-MW3-2013314 NWIRP-GM-38-GW-RW2-MW1-2013313 NWIRP-GM-38-GW-RW3-MW1-2013314 NWIRP-GM-38-GW-RW3-MW2-2013314 NWIRP-GM-38-GW-RW3-MW3-2013314 NWIRP-GM-38-GW-RW3-MW4-2013314 NWIRP-GM-38-GW-TP1-2013313	None None None None None None None None

\*= If sample concentration less than the Action Level (AL), then sample result qualified as non-detect (U). If sample concentration greater than the Action Level (AL) or sample result was not detected, no qualifications/action required.

2. Method Blank (1109034) analyzed on 3/19/2013 was free of contamination with the exception of the following:

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
1108752	Methylene chloride	0.61	3.05	NWIRP-GM-38-DUP01-2013313 NWIRP-GW-38-FB1-20130314 NWIRP-GW-38-TRIPBLANK	None None U

\*= If sample concentration less than the Action Level (AL), then sample result qualified as non-detect (U). If sample concentration greater than the Action Level (AL) or sample result was not detected, no qualifications/action required.

3. Field Blank (NWIRP-GM-38-FB1-20130314) (1017222010) analyzed on 3/20/2013 was free of contamination with the exception of the following:

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
101722010	Toluene	0.20	1	NWIRP-GM-38-GW-RW1-MW1-2013313 NWIRP-GM-38-GW-RW1-MW3-2013314 NWIRP-GM-38-GW-RW2-MW1-2013313 NWIRP-GM-38-GW-RW3-MW1-2013314 NWIRP-GM-38-GW-RW3-MW2-2013314 NWIRP-GM-38-GW-RW3-MW3-2013314 NWIRP-GM-38-GW-RW3-MW4-2013314 NWIRP-GM-38-GW-TP1-2013313 NWIRP-GM-38-DUP01-2013313	None None U None None None None None None

\*= If sample concentration less than the Action Level (AL), then sample result qualified as non-detect (U). If sample concentration greater than the Action Level (AL) or sample result was not detected, no qualifications/action required.

4. Trip Blank (NWIRP-GM-38-TRIPBLANK) (1017222011) analyzed on 3/19/2013 was free of contamination. No qualifications were required.

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

- Laboratory Control Sample (1108753) was analyzed on 12/11/2012. All %RECs were within the laboratory control limits. No qualifications were required.
- Laboratory Control Sample (1109035) was analyzed on 12/12/2012. All %RECs were within the laboratory control limits. No qualifications were required.

**Field Duplicate:**

- Sample NWIRP-GM-38-DUP01-2013313 (1017222009) was collected as field duplicate for sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
MWIRP-GM-38-GW-RW3-MW2-20120412	1,2-Dichloroethane	EPA 624	0.36	µg/l	MWIRP-GM-38-DUP01-20120412	0.37	µg/l	2.7	None
MWIRP-GM-38-GW-RW3-MW2-20120412	Tetrachloroethene	EPA 624	0.34	µg/l	MWIRP-GM-38-DUP01-20120412	0.32	µg/l	6.1	None
MWIRP-GM-38-GW-RW3-MW2-20120412	cis-1,2-Dichloroethene	EPA 624	5.8	µg/l	MWIRP-GM-38-DUP01-20120412	5.8	µg/l	0	None
MWIRP-GM-38-GW-RW3-MW2-20120412	Chloroform	EPA 624	1.2	µg/l	MWIRP-GM-38-DUP01-20120412	1.1	µg/l	8.7	None
MWIRP-GM-38-GW-RW3-MW2-20120412	1,1,1-Trichloroethane	EPA 624	0.35	µg/l	MWIRP-GM-38-DUP01-20120412	0.35	µg/l	0	None

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
MWIRP-GM-38-GW-RW3-MW2-20120412	1,1-Dichloroethane	EPA 624	1.5	µg/l	MWIRP-GM-38-DUP01-20120412	1.4	µg/l	6.9	None
MWIRP-GM-38-GW-RW3-MW2-20120412	1,1-Dichloroethane	EPA 624	0.44	µg/l	MWIRP-GM-38-DUP01-20120412	0.42	µg/l	4.7	None
MWIRP-GM-38-GW-RW3-MW2-20120412	Trichloroethene	EPA 624	25.9	µg/l	MWIRP-GM-38-DUP01-20120412	25.4	µg/l	1.9	None

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
2-Chloroethylvinyl ether	0/0/NA	R <sup>(1)</sup>

NA= Not Applicable

<sup>(1)</sup>= R qualifier was used due to both MS and MSD were not recovered. Qualifications were applied to both the parent sample and the field duplicate sample.

**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  $\pm 0.06$  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: G1017222-HNW-059.

**MERCURY**  
USEPA Region II – Data Validation

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

**Location:** 100 Broadway, Bethpage, NY

**Project Number:** 2031-108

**SDG #:** G1017222-HNW-059

**Client:** H&S Environmental, Inc.

**Date:** 06/21/2013

**Laboratory:** ALS Environmental, Middletown, PA

**Reviewer:** Sherri Pullar

**Summary:**

1. Data validation was performed on the data for nine (9) water samples and one (1) field blank analyzed for Mercury by EPA Method 245.1.
2. The samples were collected on 3/13 and 14/2013. The samples were submitted to ALS Environmental, Middletown, PA on 3/16/2013 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:

<b>Client Sample ID</b>	<b>Laboratory Sample ID</b>	<b>Collection Date</b>	<b>Matrix</b>	<b>Sample Status</b>
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	3/13/2013	Water	
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	3/14/2013	Water	
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	3/13/2013	Water	
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	3/14/2013	Water	
NWIRP-GM-38-GW-TP1-2013313	1017222008	3/13/2013	Water	
NWIRP-GM-38-DUP01-2013313	1017222009	3/13/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-TP1-2013313
NWIRP-GM-38-FB1-20130314	1017222010	3/13/2013	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 28days 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  $\geq 0.995$ . 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 (1112672) digested on 3/28/2013 was free of contamination. No qualifications were required.

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

1. Field Blank (NWIRP-GM-38-FB1-20130314) (1017222010) analyzed on 3/28/2013 was free of contamination. No qualifications were required.

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

1. Mercury %REC in Laboratory Control Sample (1112673) analyzed on 3/28/2013 was within the laboratory control limits. No qualifications were required.

**Field Duplicate:**

1. Sample NWIRP-GM-38-DUP01-2013313 (1017222009) was collected as field duplicate for sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). Both samples were reported as non-detects. No qualifications were required.

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). 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: G1017222-HNW-059.

**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:** 2031-108  
**SDG #:** G1017222-HNW-059  
**Client:** H&S Environmental, Inc.  
**Date:** 06/21/2013  
**Laboratory:** ALS Environmental, Middletown, PA  
**Reviewer:** Sherri Pullar

**Summary:**

1. Data validation was performed on the data for nine (9) water samples analyzed for Solids, Total Suspended (TSS) by SM20<sup>th</sup> 2540D.
2. The samples were collected on 3/13 and 14/2013. The samples were submitted to ALS Environmental, Middletown, PA on 3/16/2013 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. 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:

<b>Client Sample ID</b>	<b>Laboratory Sample ID</b>	<b>Collection Date</b>	<b>Matrix</b>	<b>Sample Status</b>
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	3/13/2013	Water	
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	3/14/2013	Water	
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	3/13/2013	Water	
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	3/14/2013	Water	
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	3/14/2013	Water	
NWIRP-GM-38-GW-TP1-2013313	1017222008	3/13/2013	Water	
NWIRP-GM-38-DUP01-2013313	1017222009	3/13/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-TP1-2013313

**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 7days 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 (1109452) analyzed on 3/20/2013 was free of contamination. No qualifications were required.

**Field Duplicate:**

1. Sample NWIRP-GM-38-DUP01-2013313 (1017222009) was collected as field duplicate for sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). Both samples were reported as non-detects. No qualifications were required.

**Laboratory Duplicate:**

1. Laboratory Duplicate was performed on sample NWIRP-GM-38-GW-TP1-2013313 (1017222008). RPD was inside the laboratory control limit (<20%). 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: G1017222-HNW-059.



**NWIRP BETHPAGE GM-38**  
**MARCH 2013 EVENT**  
**DATA SUMMARY TABLE**  
**AQUEOUS**  
**SDG: 1017222, HNW-059**

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	cis-1,2-Dichloroethene	91.7	ug/L		0.26	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	trans-1,2-Dichloroethene	1.7	ug/L		0.12	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,1,1-Trichloroethane	1.1	ug/L		0.27	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,1-Dichloroethane	5.3	ug/L		0.19	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,1-Dichloroethene	2.8	ug/L		0.17	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1



**NWIRP BETHPAGE GM-38  
MARCH 2013 EVENT  
DATA SUMMARY TABLE  
AQUEOUS  
SDG: 1017222, HNW-059**

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	Trichloroethene	101	ug/L		0.21	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	624	13-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	245.1	13-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW1-MW1-2013313	1017222001	2540D	13-Mar-13	1	Total Suspended Solids	5	mg/L		5	5
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	cis-1,2-Dichloroethene	0.53	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,1,1-Trichloroethane	1.4	ug/L		0.27	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1



**NWIRP BETHPAGE GM-38**  
**MARCH 2013 EVENT**  
**DATA SUMMARY TABLE**  
**AQUEOUS**  
**SDG: 1017222, HNW-059**

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,1-Dichloroethane	8.5	ug/L		0.19	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,1-Dichloroethene	1.7	ug/L		0.17	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,1,2-Trichloroethane	0.61	ug/L	J	0.3	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	Trichloroethene	1.9	ug/L		0.21	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	624	14-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	245.1	14-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW1-MW3-2013314	1017222002	2540D	14-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	cis-1,2-Dichloroethene	0.29	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Benzene	0.54	ug/L	J	0.16	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,1-Dichloroethane	0.52	ug/L	J	0.19	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	Trichloroethene	0.67	ug/L	J	0.21	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	624	13-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	245.1	13-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW2-MW1-2013313	1017222003	2540D	13-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Tetrachloroethene	1.6	ug/L		0.26	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	cis-1,2-Dichloroethene	0.38	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1





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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,1,1-Trichloroethane	0.49	ug/L	J	0.27	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,1-Dichloroethane	1.2	ug/L		0.19	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,1-Dichloroethene	0.68	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	Trichloroethene	46.6	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	624	14-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	245.1	14-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW1-2013314	1017222004	2540D	14-Mar-13	1	Total Suspended Solids	16	mg/L		5	5
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	cis-1,2-Dichloroethene	1.6	ug/L		0.26	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,1,1-Trichloroethane	0.41	ug/L	J	0.27	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,1-Dichloroethane	0.68	ug/L	J	0.19	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,1-Dichloroethene	0.53	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	Trichloroethene	155	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	624	14-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	245.1	14-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW2-2013314	1017222005	2540D	14-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Ethylbenzene	5	ug/L	U	0.8	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	cis-1,3-Dichloropropene	5	ug/L	UJ	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	trans-1,3-Dichloropropene	5	ug/L	U	0.7	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,4-Dichlorobenzene	5	ug/L	U	0.75	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Acrolein	150	ug/L	U	12	150
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,2-Dichloroethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Acrylonitrile	25	ug/L	U	4.5	25





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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Toluene	5	ug/L	U	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Chlorobenzene	5	ug/L	U	0.55	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	2-Chloroethylvinyl ether	10	ug/L	U	1.4	10
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Chlorodibromomethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Tetrachloroethene	5	ug/L	U	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	cis-1,2-Dichloroethene	5	ug/L	U	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	trans-1,2-Dichloroethene	5	ug/L	U	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,3-Dichlorobenzene	5	ug/L	U	0.7	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,3-Dichloropropene, Total	5	ug/L	U	0.95	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Carbon Tetrachloride	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Chloroform	5	ug/L	U	0.75	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Benzene	5	ug/L	U	0.8	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,1,1-Trichloroethane	5	ug/L	U	1.4	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Bromomethane	10	ug/L	U	1.4	10
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Chloromethane	5	ug/L	UJ	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Chloroethane	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Vinyl Chloride	10	ug/L	UJ	1.2	10
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Methylene Chloride	3.2	ug/L	J	1.6	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Bromoform	10	ug/L	U	1.1	10
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Bromodichloromethane	5	ug/L	U	0.65	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,1-Dichloroethane	4.5	ug/L	J	0.95	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,1-Dichloroethene	2.1	ug/L	J	0.85	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Trichlorofluoromethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,2-Dichloropropane	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,1,2-Trichloroethane	5	ug/L	U	1.5	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	Trichloroethene	347	ug/L		1.1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,1,2,2-Tetrachloroethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	624	14-Mar-13	5	1,2-Dichlorobenzene	5	ug/L	U	1	5
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	245.1	14-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW3-2013314	1017222006	2540D	14-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,1-Dichloroethane	3.8	ug/L		0.19	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,1-Dichloroethene	0.38	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	Trichloroethene	2.3	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	624	14-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	245.1	14-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW4-2013314	1017222007	2540D	14-Mar-13	1	Total Suspended Solids	22	mg/L		5	5
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,2-Dichloroethane	0.36	ug/L	J	0.22	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	R	0.28	2
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Tetrachloroethene	0.34	ug/L	J	0.26	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	cis-1,2-Dichloroethene	5.8	ug/L		0.26	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Chloroform	1.2	ug/L		0.15	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,1,1-Trichloroethane	0.35	ug/L	J	0.27	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,1-Dichloroethane	1.5	ug/L		0.19	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,1-Dichloroethene	0.44	ug/L	J	0.17	1



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	Trichloroethene	25.9	ug/L		0.21	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	624	13-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-TP1-20130313	1017222008	245.1	13-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-TP1-20130313	1017222008	2540D	13-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,2-Dichloroethane	0.37	ug/L	J	0.22	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Acrylonitrile	5	ug/L	UJ	0.89	5
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	R	0.28	2
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Tetrachloroethene	0.32	ug/L	J	0.26	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	cis-1,2-Dichloroethene	5.8	ug/L		0.26	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Chloroform	1.1	ug/L		0.15	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,1,1-Trichloroethane	0.35	ug/L	J	0.27	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2



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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,1-Dichloroethane	1.4	ug/L		0.19	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,1-Dichloroethene	0.42	ug/L	J	0.17	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	Trichloroethene	25.4	ug/L		0.21	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	624	13-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-DUP1-20130313	1017222009	245.1	13-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-DUP1-20130313	1017222009	2540D	13-Mar-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Acrylonitrile	5	ug/L	UJ	0.89	5
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Toluene	0.2	ug/L	J	0.12	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Benzene	1	ug/L	U	0.16	1





**NWIRP BETHPAGE GM-38**  
**MARCH 2013 EVENT**  
**DATA SUMMARY TABLE**  
**AQUEOUS**  
**SDG: 1017222, HNW-059**

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	624	13-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-FB1-20130314	1017222010	245.1	13-Mar-13	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	cis-1,3-Dichloropropene	1	ug/L	UJ	0.12	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Acrylonitrile	5	ug/L	UJ	0.89	5
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1



**NWIRP BETHPAGE GM-38**  
**MARCH 2013 EVENT**  
**DATA SUMMARY TABLE**  
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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Methylene Chloride	0.49	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TRIPBLANK	1017222011	624	16-Mar-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1