N96095.AR.000927
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FINAL 2012 BASEWIDE INVESTIGATION DATA SUMMARY REPORT NWIRP CALVERTON NY

2/6/2014

RESOLUTION CONSULTANTS

2012 BASEWIDE INVESTIGATION DATA SUMMARY REPORT

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP)
Calverton, NY

FINAL

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Ave.
Norfolk, VA 23511-3095

Comprehensive Long-Term Environmental Action Navy
Contract Number N62470-11-D-8013

CTO WE07

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February 6, 2014

Table of Contents

LIST OF ACRONYMS AND ABBREVIATIONS iii
1.0 INTRODUCTION AND BACKGROUND INFORMATION 1
1.1 Scope and Objectives 1
1.2 Report Organization 2
2.0 SITE BACKGROUND 3
2.1 Site Location and Layout 3
2.2 Environmental Setting 5
2.2.1 Topography and Drainage 5
2.2.2 Geology 5
2.2.3 Surface Water and Hydrogeology 6
2.2.4 Groundwater Occurrence 7
2.2.5 Groundwater Flow Directions 7
2.3 Previous Environmental Investigations and Remediation 8
3.0 FIELD INVESTIGATION 13
3.1 Field and Sampling Activities 13
3.1.1 Monitoring Well and Piezometer Sampling 13
3.1.2 Peconic River Piezometer, Surface Water and Sediment Sampling 15
3.2 Field Observations 15
4.0 ANALYTICAL RESULTS AND FINDINGS 17
4.1 Site 2 – Fire Training Area Results 18
4.2 Site 6A – Fuel Calibration Area Results 19
4.3 Southern Area Results 20
5.0 CONCLUSIONS 24
5.1 Site 2 – Fire Training Area 24
5.2 Site 6A – Fuel Calibration Area 24
5.3 Southern Area 25
5.4 General Conclusions 25
6.0 REFERENCES 27

Tables

Table 3-1 Site 2 Well Construction Details and Measurements
Table 3-2 Site 6A Well Construction Details and Measurements
Table 3-3 Southern Area Construction Details and Measurements
Table 3-4 Staff Gauge Construction Details and Measurements
Table 4-1 Site 2 Groundwater Analytical Detections Summary
Table 4-2 Site 6A Groundwater Analytical Detections Summary
Table 4-3 Southern Area Groundwater Analytical Detections Summary
Table 4-4 Southern Area Surface Water Analytical Detections Summary
Table 4-5 Southern Area Sediment Analytical Detections Summary

Figures

Figure 1-1 General Location Map
Figure 1-2 Site Location Map
Figure 2-1 Site Layout
Figure 2-2 Southern Area Transect A-A' (Plan)
Figure 2-3 Southern Area Transect A-A' (Cross-Section)
Figure 3-1 Site 2 Monitoring Well Location Map
Figure 3-2 Site 6A Monitoring Well Location Map
Figure 3-3 Southern Area Monitoring and Piezometer Well Location Map
Figure 3-4 Staff Gauge Location Map
Figure 4-1 Groundwater Analytical Detections – Site 2
Figure 4-2 Groundwater Contours – Site 2
Figure 4-3 Groundwater Analytical Detections – Site 6A
Figure 4-4 Groundwater Contours – Site 6A and Southern Area
Figure 4-5 Groundwater Analytical Detections – Southern/Fence Line Area
Figure 4-6 Groundwater Analytical Detections – Southern/Offsite High Concentration Area
Figure 4-7 Groundwater Analytical Detections – Southern/Offsite Low Concentration Area
Figure 4-8 Groundwater Analytical Detections – Southern/Peconic River Area

Appendices

Appendix A Groundwater Sample Collection Logs
Appendix B Chain of Custody Forms
Appendix C Field Notebooks
Appendix D Analytical Data Tables
Appendix E Data Validation Summaries

List of Acronyms and Abbreviations

AS/SVE	Air Sparging/Soil Vapor Extraction
CA	Chloroethane
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
CY	Cubic Yards
DCA	1,1-dichloroethane
DCE	1,1-dichloroethene
DoD	Department of Defense
DRO	Diesel Range Organics
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
GRO	Gasoline Range Organics
IDW	Investigation Derived Waste
IR	Installation Restoration
MCL	Maximum Contaminant Level
NTU	Nephelometric Turbidity Units
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NWIRP	Naval Weapons Industrial Reserve Plant
ORC	Oxygen Release Compound
PCE	Tetrachloroethene
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Recovery and Conservation Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SCO	Soil Cleanup Objective
SOP	Standard Operating Procedure
SVOC	Semi-volatile Organic Compound
TAGM	Technical and Administrative Guidance Manual
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbons
U.S.	United States
VOC	Volatile Organic Compound

1.0 INTRODUCTION AND BACKGROUND INFORMATION

This Data Summary Report has been prepared for the Naval Facilities Command (NAVFAC), Mid-Atlantic Division under the Comprehensive Long-Term Environmental Action Navy (CLEAN) contract number N62740-11-D-8013, Contract Task Order (CTO) WE07. This report presents the results of groundwater, surface water and sediment investigations conducted from May through September 2012 at the Naval Weapons Industrial Reserve Plant (NWIRP) in Calverton, New York, as shown in Figures 1-1 and 1-2. Investigation activities were conducted as described in the Unified Federal Policy (UFP) Sampling and Analysis Plan (SAP) (Resolution Consultants 2012) or the previous Work Plan (Tetra Tech 2008a) and subsequent addenda, and in accordance with the Navy Environmental Restoration (ER) Program and New York State Department of Environmental Conservation (NYSDEC) Resource Conservation and Recovery Act (RCRA) permit NYD003995198.

1.1 Scope and Objectives

This report details the 2012 investigations conducted at the NWIRP Calverton Site 2 – Fire Training Area, Site 6A – Fuel Calibration Area, and Southern Area. Site contamination due to volatile organic compounds (VOCs) occurred as a result of aircraft parts manufacturing, assembly and testing operations undertaken by the Northrup Grumman Corporation (NGC) at NWIRP Calverton from the 1950s through 1996. A removal action at Site 2 in 2008 and 2009 and remedial actions at Sites 6A and 10B in 2009 and 2010 were undertaken to address contaminated soils and continuing sources of groundwater contamination. In addition, a groundwater treatment system under construction and anticipated to start operation in fall 2013 is intended to further address the groundwater contamination plume extending from the source areas. Objectives of the groundwater monitoring program include:

- Further delineating the extent of VOC-contaminated groundwater;
- Monitoring the groundwater quality at the Sites;
- Evaluating temporal trends of site contamination; and
- Providing data to evaluate potential impacts of site contaminants on potential receptors.

The results of the groundwater monitoring program will be used to further evaluate the need for additional corrective actions, and to refine the conceptual site model for transport of contaminants and identification of potential receptors, including off-site properties and the Peconic River.

A detailed description of sample collection activities is presented in Section 3 of this report. Field work associated with data presented in this report was conducted from May 2012 through September 2012, and includes the following items:

- Semi-annual groundwater, surface water and sediment sampling along the Peconic River in May and September 2012.
- Annual groundwater sampling at Sites 2, 6A, and the Southern Area in September 2012.
- Groundwater and surface water elevation gauging in September 2012.

1.2 Report Organization

This Data Summary Report provides general information about NWIRP Calverton and the conduct of the 2012 sampling program. The report is generally organized as follows:

- Section 1 – Introduction and general scope and objectives;
- Section 2 – Facility background, history and environmental setting;
- Section 3 – Summary of field activities;
- Section 4 – Analytical results; and
- Section 5 – Conclusions and recommendations.

2.0 SITE BACKGROUND

The NWIRP Calverton facility is located in the Town of Riverhead in Suffolk County, New York, approximately 70 miles east of New York City (Figures 1-1 and 1-2). As a government-owned, contractor-operated (GOCO) installation leased by the Navy to the Northrop Grumman Corporation (NGC) until 1996, NWIRP Calverton was formerly engaged in the manufacture of aircraft parts and assemblies. Since that time, all of the property contained within the perimeter fence, with the exception of three noncontiguous parcels of land totaling approximately 209 acres that are being retained by the Navy to continue Installation Restoration (IR) Program activities (Site 2, Site 7, and Sites 6A-10B/Southern Area), have been conveyed to the Town of Riverhead (Figure 1-2). Other than environmental investigation and remediation work, there are no continuing operations on the 209 acres remaining under Navy ownership that generate hazardous waste.

2.1 Site Location and Layout

Site 2 – Fire Training Area

Site 2, also known as the Fire Training Area, is located in the south central area of the NWIRP Calverton facility (see Figure 2-1). A 9-acre clearing occupies most of the northwestern portion of the parcel. A circular, concrete pit built in 1983, in the southeast corner of the clearing, was used to contain liquids for the fire training exercises. The pit was approximately 80 feet in diameter and was located about 500 feet north and 800 feet west of the facility's former south main gate. The pit was removed in 2008. A 1,000-gallon steel, above-ground fuel storage tank, located approximately 75 feet north of the training pit, was used to store fuels. This tank was removed in 1996. A 6,000 gallon fuel storage tank was located north of the training area prior to 1982. Little information is available on the 6,000-gallon storage tank, other than it was likely an aboveground tank located north of the concrete pit and is no longer present at this site (Tetra Tech 2005). Previously-collected data suggests that contamination may have or is migrating off-site, and the Navy has installed off-property piezometers to investigate this possibility. Therefore, references are made to Site 2 – On-Property or Site 2 – Off-Property where appropriate throughout this report.

Site 6A – Fuel Calibration Area / Site 10B – Engine Test House

Site 6A, also known as the Fuel Calibration Area, is located in Parcel B1 near the south-central portion of the former NWIRP Calverton facility, approximately 1,500 feet north of Grumman Boulevard and 2,000 feet west of the former south main gate. Site 6A and related facilities were used in the testing of aircraft fuel and engine systems, which may have resulted in frequent, small fuel spills onto the area's pavement. Minor maintenance and repairs to the fuel and engine systems were also conducted at the site, and solvents were used during these activities and were likely spilled during their use.

Site 6A consists of new and old fuel calibration pads (Figure 2-1). The old fuel calibration pad was located in what is now an open, grass-covered field in an area now partially covered by a wastewater treatment facility. No physical evidence exists of the old calibration area. Former underground storage tanks (USTs) located near the old fuel calibration pad (south of Building 231) were removed in the early 1990s by NGC. The new fuel calibration pad is located north and east of the old calibration pad on a concrete apron. The concrete apron between the two fuel calibration pads was also used for the same activities. A shed, piping and fuel-filtering devices were located in the area in the 1980s. The equipment was likely removed in the 1980s (Tetra Tech 2007).

Site 10B, or the Engine Test House, is located approximately 1,000 feet southeast of Site 6A (Figure 2-1), also within Parcel B1. The area consisted of a building and surrounding pad. The building and a portion of the pad were removed during the 2009-2010 remedial action. To the north, east and south are sparse woods, and to the west are open grassy areas. A drainage swale and culvert from Site 6A runs adjacent to and hydraulically upgradient of Site 10B. Surface water runoff from Site 6A can enter this swale and flow past Site 10B. Also, from the late 1980s to the early 1990s, groundwater from Site 6A was discharged into this drainage swale and culvert (Tetra Tech 2007).

Contamination associated with aircraft fuels was found in the area of a former UST that was removed in the mid-1990s. Approximately 80 cubic yards (CY) of fuel-contaminated soil were excavated during removal of the UST. The excavation did not continue under the concrete pad at Site 10B.

Southern Area

The Southern Area is located southeast of Site 10B and extends to the Peconic River (Figure 2-1); the Navy retains ownership of the portion of the Southern Area north of Grumman Boulevard and River Road (referred to as “onsite”), while the remainder of the plume extends under properties owned by others (referred to as “offsite”). This area was originally investigated because chlorinated solvents were detected in a Suffolk County monitoring well down gradient of the facility. There are no known or suspected contaminant sources within this area. However, the area is hydraulically downgradient of much of the NWIRP’s former industrial complex, including Site 6A and Site 10B. The groundwater flow direction through this area is southeast toward the Peconic River. The Peconic River is the likely end point for groundwater flow from this area.

The area is mostly wooded and includes two shallow ponds near the northern edge. The ponds receive runoff through a drainage swale and culvert from Site 6A. From the late 1980s to the early 1990s, groundwater from Site 6A was discharged into this drainage swale and culvert and into the western pond. As a result, the presence of chlorinated solvents in groundwater at the Southern Area may be attributable to Site 6A (Tetra Tech 2007).

The Peconic River Sportsman's Club (PRSC) is located in the offsite Southern Area. Water supply wells formerly located on the PRSC property were classified as a Non-Community Public Water Supply under Part 5, Subpart 5-1 of the New York State Sanitary Code. These wells are abandoned as of June 2012, and the PRSC now receives potable water from the municipal system.

From a management perspective Site 6A and the Southern Area constitute a single operable unit, defined in the Record of Decision (NAVFAC MIDLANT 2012) supporting the selection of a groundwater treatment system as the remedy for the contaminant plume (as described in Section 2.3, below). For discussion purposes, however, the portion of the plume in the Southern Area can be further segmented into subareas referred to as the Fence Line Area, Offsite High Concentration Area, Offsite Low Concentration Area, and Peconic River Area (Figure 2-1) based on a combination of location and groundwater chemistry data.

2.2 Environmental Setting

2.2.1 Topography and Drainage

NWIRP Calverton occupies a relatively flat, intermorainal area, underlain by permeable glacial material and characterized by limited surface water drainage features. Normal precipitation at the facility is expected to infiltrate rapidly into the soil. Wetland areas and glacially formed lakes and ponds are located south and southwest of the facility. The topographic relief at NWIRP Calverton is 54 feet, with elevations ranging from 30 to 84 feet above mean sea level (msl) (Tetra Tech 2005).

2.2.2 Geology

NWIRP Calverton lies within the Atlantic Coastal Plain Physiographic Province, which is generally characterized as an area of relatively undissected low-lying plains. The surface topography has been created or modified by Pleistocene glaciations (Isbister 1966). The facility is underlain by approximately 1,300 feet of unconsolidated sediments that consist of a sequence of four distinct geologic units. These units, in order of descending elevation, are the Upper Glacial Formation, the Magothy Formation, the Raritan Clay Member of the Raritan Formation, and the Lloyd Sand Member of the Raritan Formation (McClymonds 1972).

Previous soil boring and sampling activities reveal that the facility is predominantly underlain by fine to coarse sediments of probable glaciofluvial origin. Three distinct lithofacies were encountered during these previous investigations. The upper lithofacies represents a mixture of soil, fill, and glacial deposits and consists predominantly of silty, fine-grained sand with varying amounts of peat and clay. Fill material, where present, is always associated with the upper lithofacies. The middle lithofacies consists of predominantly fine-grained sand with varying amounts of medium- to coarse-grained sand and pebbles, and is probably representative of undisturbed glacial deposits. The lower lithofacies consists of micaceous, silty clay and may represent the Magothy Formation.

A geologic cross-section of the facility was most recently updated following borings in 2010 (Tetra Tech 2012); a plan view of cross-section A-A' is presented as Figure 2-2, and cross-section A-A' itself is shown as Figure 2-3. This cross-section starts at Site 6A (the Fuel Calibration Area) and runs to the southeast through Site 10B (the Engine Test House), onsite Southern Area, offsite Southern Area, and the PRSC, and then proceeds to the south along the Peconic River.

Based on cross section A-A' (Figure 2-3) there is a fine to medium-grained sand down to approximately 50 feet bgs, where a silty clay unit (aquitard) is encountered. This aquitard is about 25 feet thick at Site 6A and thins to the southeast, eventually pinching out near the PRSC. Beneath this silty clay unit is a thin silty fine to medium-grained sand with trace gravel, followed by another thin silty clay unit that appears to be discontinuous across the area. Another fine to medium-grained sand is then encountered at depth and extends down to a deeper silty clay unit, which is interpreted to be continuous across the study area. Boring and gamma logs from the southeastern portion of the offsite Southern Area show that there is 100 feet of fine to medium-grained sand overlying a 10-foot thick silty clay layer (Tetra Tech 2012).

The geologic units encountered within the study area appear to be generally flat, consistent with what would be expected for the glacial deposits on Long Island. The upper contact is believed to be an erosional surface and is expected to be flat to undulating, reflecting the former topography.

2.2.3 Surface Water and Hydrogeology

The majority of the facility and all of Sites 2, 6A and 10B, and the Southern Area are located within the Peconic River drainage basin. The eastward-flowing Peconic River is approximately 1,300 feet south of the facility at its closest point and discharges to Peconic Bay, located 8.5 stream miles from the facility. Major surface water features near the facility include McKay Lake and Northeast Pond. McKay Lake is a man-made groundwater recharge basin located north of Grumman Boulevard, midway along the southern site border. Northeast Pond is located at the northeast corner of the facility. Several small drainage basins exist near Sites 6A and 10B. All of these surface water features are land-locked with the exception of McKay Lake, which has an intermittent discharge to Swan Pond approximately 1,000 feet to the south. Overflow from these drainage basins to the Peconic River may also occur periodically.

A number of small wetlands exist on the Calverton facility. The U.S. Department of the Interior (USDOI), Fish and Wildlife Department classifies the western half of the 2-acre Northeast Pond as palustrine, forested/scrub/shrub/emergent wetland. The drainage basins are classified as palustrine, scrub/shrub/emergent wetland (USDOI 1980).

The unconsolidated sediments that underlie NWIRP Calverton are generally coarse-grained with high porosities and permeabilities. These factors create aquifers with high yields and

transmissivities. The Upper Glacial Formation, the Magothy Formation, and the Lloyd Sand are the major regional aquifers. The Upper Glacial and Magothy aquifers are of principal importance in Suffolk County because of their proximity to the ground surface. The Raritan Clay of the Raritan Formation has a very low permeability and acts as a regional confining layer that is believed to minimize the local risk of contamination to the underlying Lloyd Sand aquifer (McClymonds 1972). The Upper Glacial aquifer and the Magothy aquifer are widely used as a source of groundwater in Suffolk County and, along with the Lloyd Sand aquifer constitute the Nassau-Suffolk Aquifer System, which is designated as a sole source aquifer (meaning more than 50 percent of drinking water for the aquifers' service area is supplied by these aquifers) by the EPA (EPA 1975). The water table beneath the NWIRP Calverton lies within these aquifers. Both aquifers are believed to be hydraulically interconnected and to function as a single unconfined aquifer.

2.2.4 Groundwater Occurrence

Groundwater is encountered under unconfined conditions at shallow depths beneath NWIRP Calverton within the Upper Glacial aquifer, which extends to depths of approximately 14 to 150 feet bgs in the study area and is the aquifer of most concern when investigating groundwater quality issues related to the facility. This aquifer is comprised primarily of highly permeable glacial outwash deposits, with till (unsorted mixtures of sand, silt, clay, and gravel) and glaciolacustrine clayey deposits. This aquifer interacts directly with the Peconic River.

Underlying the Upper Glacial aquifer is the Magothy aquifer that starts at approximately 140 to 150 feet bgs. This aquifer, comprised primarily of clayey fine to medium sand with minor silty clay horizons directly underlying the laterally extensive silty clay unit, is projected to be about 650 feet thick in north-central Suffolk County (including the NWIRP Calverton area), and is used regionally as a major source for water supplies.

Across the study area to the Peconic River, the water table is generally encountered within about 20 feet of the ground surface. Near the Peconic River, the depth to groundwater decreases to less than 10 feet from the ground surface as groundwater appears to be discharging to the river in this area.

2.2.5 Groundwater Flow Directions

NWIRP Calverton straddles a regional groundwater divide. Based on previously published information and data interpretations (Halliburton NUS 1995a), groundwater beneath the northern half of the facility flows to the northeast, with the Long Island Sound as the probable discharge point for groundwater in the shallow aquifer zones. Groundwater beneath the southern half of the facility flows to the southeast, and the Peconic River basin is the presumed discharge point. Groundwater contour maps developed from data collected during previous rounds of sampling over

several years confirm this general flow pattern (Tetra Tech 2012). Groundwater on the divide, the location of which can fluctuate, flows to the east.

Previous investigation activities have identified that groundwater may impact a portion of the Peconic River located southeast of NWIRP Calverton where there is no aquitard present. There is a slight upward gradient in the southeast portion of the Southern Area, which causes groundwater to flow up into the Peconic River (Tetra Tech 2012).

2.3 Previous Environmental Investigations and Remediation

Site 2 – Fire Training Area

Environmental investigations have occurred at Site 2 since at least 1982. Among these investigations were a RCRA Facility investigation (RFI) conducted in 1994 and 1995 (Halliburton NUS 1995a), a Phase 2 Remedial Investigation (RI) conducted in 1997 (Tetra Tech 2001), an Engineering Evaluation/Cost Analysis (EE/CA) in 1998 (Tetra Tech 1998) and monitoring that has occurred on at least an annual basis since 2008 (Tetra Tech 2012). These investigations identified a range of contaminants that have historically exceeded screening criteria at Site 2, including soil contamination due to VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides and metals, and groundwater contamination due to VOCs, SVOCs and metals. The RFI identified the fire training pit as the likely primary source of the contamination at Site 2 (Halliburton NUS 1995a).

The earlier investigations identified several VOCs exceeding federal or New York State Department of Health (NYSDOH) maximum contaminant levels (MCLs) for groundwater; for example, the 1994-1995 RFI identified chloroethane (CA) concentrations as high as 1,100 micrograms per liter (µg/L), 1,1-dichloroethane (DCA) concentrations up to 1,200 µg/L, toluene concentrations up to 140 µg/L, and xylene concentrations as high as 230 µg/L. For comparison, the NYSDOH MCL for most VOCs is 5 µg/L. Elevated concentrations of these and other VOCs were also found in soil samples at Site 2.

Several remedial actions have been undertaken at Site 2 to address the contamination identified in the environmental investigations. The primary remedial actions include (Tetra Tech 2005):

- The removal of 327 CY of contaminated soil in 1982.
- The installation and operation of active and passive groundwater recovery systems in 1987. The active system included a groundwater pumping well and oil-water separation system that operated until 1993. The passive system consisted of hydrophobic filters in wells, which remained in place until 1996. Overall, these systems removed approximately 325 gallons of petroleum product.

- The installation and operation of a pilot-scale air sparging/soil vapor extraction (AS/SVE) system operated seasonally from 1995 through 2000. Approximately 80 pounds of target VOCs were removed, and an estimated 30,000 pounds of organics were destroyed through biodegradation. Overall, VOC concentrations in soil and groundwater were reduced by approximately 70 to 95 percent.
- The excavation of contaminated soil, and demolition of the AS/SVE system and circular concrete pad from October 2008 through June 2009. During the removal action, 10,860 tons of shallow (up to 6 feet bgs) petroleum-contaminated soil and 546 tons of surficial coal deposits (up to 2 feet bgs) were excavated and disposed of. Following excavation, 1,100 pounds of calcium oxyhydroxide (Regenesis© ORC [Oxygen Release Compound] Advanced) were applied to the excavation floor prior to backfill, grading and revegetation of the site.

Contaminant concentrations have decreased over time for a variety of reasons, including removal of source areas and groundwater treatment performed during the various remedial actions. Based on recent investigations, the contaminants of concern at Site 2 continue to be fuel- and solvent-related VOCs (particularly xylene and DCA), but at lower concentrations than those observed historically. For example, during the 2011 annual monitoring sampling, DCA, 1,2-dichloroethene, ethylbenzene, xylenes, trichloroethene (TCE) and vinyl chloride were all detected, but none at concentrations greater than 16 µg/L. At several sampling locations, contaminants were either not detected or detected at levels below the NYSDOH MCLs.

<u>Site 6A – Fuel Calibration Area / Site 10B – Engine Test House</u>

The earliest environmental investigation at Site 6A was the 1994-1995 RFI (Halliburton NUS 1995a), while the 1997 Phase 2 RFI was the first investigation at Site 10B (C.F. Braun Engineering Corp. 1998). Subsequent investigations of either or both sites include the 1998 EE/CA (Tetra Tech 1998), a Phase 2 RI (Tetra Tech 2001), two supplemental investigations, and monitoring that has occurred on at least an annual basis since 2009 (Tetra Tech 2012). These investigations identified fuel- and solvent-related VOCs in Site 6A soil and groundwater, and fuel-related VOCs in Site 10B soils and groundwater. Historically, VOC concentrations as much as four orders of magnitude higher than NYSDOH MCLs have been identified in Site 6A groundwater; e.g., in 1994, detected concentrations included 15,000 µg/L of 1,1,1-trichloroethane (TCA), 5,800 µg/L of DCA, 430 µg/L of CA, 300 µg/L of toluene, and 780 µg/L of xylenes. Fuel-related VOC concentrations at Site 10B were lower, but still as much as three orders of magnitude greater than the MCLs; e.g., in 1997, VOC concentrations in groundwater samples from temporary well installations included 1,084 µg/L of ethylbenzene, 337 µg/L of toluene, and 196 µg/L of xylenes.

Remedial actions at Sites 6A and 10B include the operation of a free product recovery system and excavation of contaminated soils. Specifically, the remedial actions include:

- The installation and operation of a product recovery unit at Site 6A in 1987 (Tetra Tech 2006a). The system included a groundwater pumping well, oil recovery well and oil-water separation system that operated until 1993, recovering 1,200 gallons of petroleum product. Passive recovery by hand bailing of wells continued until 1996, capturing an additional 700 gallons of product. Overall, the recovery operation removed approximately 1,900 gallons of petroleum product.
- A removal action at Site 10B from 2008 to 2009, when approximately 2,700 CY of soil were excavated and 1,900 lbs. of dry PermeOx Plus were applied to the excavation floor prior to backfill (Tetra Tech 2012).
- A removal action at Site 6A from 2009 to 2010, when 21,000 tons of PCB-, petroleum-, and solvent-contaminated soil were removed, and 5,200 lbs. of calcium oxyhydroxide were applied to promote biodegradation of remaining contamination (Tetra Tech 2012).

Recent contaminant concentrations at Sites 6A and 10B are notably lower than the historic data. Although several VOCs (including DCA, CA, 1,1-dichloroethene [DCE], ethylbenzene and xylenes) were detected at Site 6A in 2011, at most locations they were not detected or detected at concentrations no more than 46 µg/L. However, at one location in the middle of the plume extending from the source area (FC-PZ05I1), VOC concentrations two to three orders of magnitude greater than the MCLs were observed in 2011 (e.g., 1,000 µg/L of DCA, 530 µg/L of TCA, and 220 µg/L of CA). At Site 10B, no VOCs were detected in excess of MCLs in permanent groundwater monitoring wells installed in 2008 and sampled at least annually from 2008 through 2011.

<u>Southern Area</u>

Groundwater contamination in the Southern Area is believed to be associated with Site 6A, since the majority of other potential source areas have been eliminated, and is believed to be the result of intermittent releases at Site 6A or overland migration through a series of ditches and ponds in the area (including discharges from operation of the Site 6A free product recovery system). From 1992 to 1995, the Site 6A RFI and addendum identified chlorinated solvents in the groundwater at Site 6A, including concentrations of TCA at 15,000 µg/L, DCA at 5,800 µg/L, and CA at 430 µg/L. The investigation did not find evidence that the plume had migrated beyond the immediate vicinity of Site 6A at that time (Halliburton NUS 1995a, Halliburton NUS 1995b, Tetra Tech 2001). The Navy subsequently conducted a series of groundwater investigations in the Southern Area, including in 1997, 2000, 2004/2005, 2006, 2008, 2009, 2010, and 2011. During these investigations, groundwater samples were collected from temporary wells, monitoring wells, piezometers, and

vertical profile borings. Beginning with the 2004/2005 sampling event, surface water and sediment samples were also collected from the Peconic River.

The results of these investigations indicate that contamination consists mainly of the chlorinated solvent TCA and its associated breakdown products DCA, DCE, and CA, and is present in a plume reaching southeast from Site 6A toward the Peconic River. This includes both Navy-owned property within the former NWIRP facility, as well as offsite lands south of Grumman Boulevard and River Road. DCA is the predominant contaminant, representing approximately 80 percent of the total VOCs present. Other VOCs such as benzene, toluene, ethylbenzene, xylene, Freon, and chloroform are periodically identified in groundwater, though they do not appear to form an identifiable plume.

Historically, the highest concentrations of contaminants in groundwater have been observed within the Navy-owned portion of the Southern Area referred to as the Fence Line Area and the immediately-adjacent off-site areas. DCA concentrations in these areas have historically ranged as high as 1,500 µg/L, but have more commonly been found at concentrations one to two orders of magnitude greater than the MCL (i.e., 50 to 500 µg/L). Contaminant concentrations vary based on location and sampling depth, however, and concentrations at specific locations (e.g., SA-PZ138I1) have consistently exceeded this range. Further downgradient towards the Peconic River, DCA concentrations are typically lower (e.g., 50 µg/L or lower) – usually less than one order of magnitude greater than the MCL, although some locations have exhibited higher concentrations at times (e.g., DCA concentrations were detected as high as 85 µg/L at SA-PZ123I1 and 79 µg/L at SA-PZ124 in 2011).

Site-related contaminants have been occasionally detected in Peconic River surface water, but have not exceeded relevant standards. Surface water has been sampled on a recurring, semiannual basis at four locations since 2008. DCA has been consistently detected at concentrations of 1.8 µg/L or less in samples collected at station SA-SW124 since September 2010. There is no NYSDEC surface water quality standard for DCA in Class C waterbodies such as the Peconic River, but the detected concentrations have also been less than one-half of the most restrictive NYSDEC water quality standard for DCA of 5 µg/L (for Class A waterbodies used for water supply). Excluding VOCs typically considered to be laboratory contaminants (e.g., acetone), TCA, DCE, 1,2,4-trichlorobenzene and tetrachloroethene (PCE) are the only other VOCs to have also been detected. None of these compounds have been identified more than once, and none of the detected concentrations exceeded either the NYSDEC Class C water quality standard or the Oak Ridge National Laboratory (ORNL) toxicological screening benchmark, although a PCE concentration of 6.2 µg/L at SA-SW124 in September 2011 exceeded the Class A water quality standard of 5 µg/L (as compared to the applicable Class C standard of 40 µg/L).

Similarly, site-related contaminants have been occasionally detected in Peconic River sediments (which have also been sampled on a recurring, semiannual basis at four locations since 2008). Excluding typical laboratory contaminants, detected contaminants have included DCA, 1,2,4-trichlorobenzene, PCE and toluene. These contaminants have not been detected in successive sampling events at any location. A PCE concentration of 30 µg/Kg at SA-SD204 in September 2011 nominally exceeded the NYSDEC contaminated sediment screening criterion; however, this criterion is based on organic carbon content of the sediment, which was not available for this sample; a screening criterion of 8 µg/Kg was calculated based on assumption of 1 percent organic carbon content. The detected concentration of 30 µg/Kg was lower (by an order of magnitude) than other relevant screening criteria, including a toxicological guideline from ORNL (410 µg/Kg) and the NYSDEC Unrestricted Use Soil Cleanup Objective (SCO) (1,300 µg/Kg).

An initial remedial action in the Southern Area was a pilot-scale bioremediation test conducted in 2010 and 2011, in the area north of the intersection of Grumman Boulevard and River Road. A groundwater treatment system including extraction, treatment for VOCs by air stripping, and reinjection of treated groundwater was selected as the remedy for the Southern Area plume in 2012 (NAVFAC MIDLANT 2012). Construction of the system, located along the perimeter fence adjacent to the intersection of Grumman Boulevard and River Road, began in September 2012 and it is expected to be operational in fall 2013.

3.0 FIELD INVESTIGATION

The 2012 sampling program at NWIRP Calverton was conducted as a continuation of annual or semi-annual monitoring programs conducted in 2009, 2010, and 2011. As described in the UFP-SAP (Resolution Consultants 2012), the purpose of the monitoring program is to collect data that will address: 1) the nature and extent of contamination migrating via groundwater, 2) determine if unacceptable human health or ecological risks are present at off-site locations due to migration of contaminated groundwater, and 3) determine if additional unknown source areas could be contributing to groundwater contamination.

Field activities related to annual and semi-annual monitoring at NWIRP Calverton in 2012 included sampling and analysis of surface water, sediment and groundwater for VOCs along the Peconic River at four locations in May and September, sampling and analysis of groundwater from 65 wells and piezometers for VOCs across Site 2, Site 6A and the Southern Area in September (in addition to the Peconic River sampling), and collection of groundwater elevation data from 90 wells and piezometers located across Site 2, Site 6A, and the Southern Area in September. The following subsections provide details on sampling activities, including locations and types of samples. Backup documentation, including field notes, chain of custody forms, and data validation memoranda, are provided in the Appendices.

Details regarding targeted investigations conducted by others from November 2011 through 2012 (such as the installation and sampling of off-property piezometers to investigate potential migration of contamination from Site 2) are provided in reports specific to those investigations. However, relevant analytical data, where available, are incorporated into this Data Summary Report for context and are presented as appropriate in Sections 4 and 5 of this report, and in related tables and figures.

3.1 Field and Sampling Activities

3.1.1 Monitoring Well and Piezometer Sampling

Groundwater sampling was conducted at Site 2, Site 6A, and the Southern Area in September 2012. The sampling program included the observation of groundwater levels in 90 monitoring wells and piezometers, surface water elevation observations at seven staff gauges, and the collection of groundwater samples for laboratory analysis from 65 of these wells and piezometers. The locations of monitoring wells and piezometers (including those used for water level measurement only) included in the program are shown in Figures 3-1 through 3-3, and the locations of the staff gauges are shown in Figures 3-3 and 3-4.

Prior to sampling, the existing depth of each well and piezometer was checked for purposes of evaluating whether siltation had occurred (in which case redevelopment of the well or piezometer

would be necessary). Construction and measurement details for all monitoring wells and piezometers, including depth, diameter, screen interval, construction date, elevation, and current depth, are included in Table 3-1 for Site 2, Table 3-2 for Site 6A, and Table 3-3 for the Southern Area. Also included in these tables are groundwater depths recorded during a round of synoptic water level measurements conducted on September 14, 2012. Construction and measurement details for the seven staff gauges, also measured during the round of synoptic water level measurements conducted on September 14, 2012, are included in Table 3-4.

Groundwater samples were collected from the piezometers and wells in accordance with the standard operating procedures (SOPs) identified in the UFP-SAP, using U.S. EPA low-flow (low-stress) purging and sampling techniques. Groundwater sampling occurred from September 10-13 and September 17-20, 2012. During purging, field parameters were monitored on a regular basis (every two to five minutes) with water quality sondes and turbidity meters that were calibrated on a daily basis. Purging was considered complete when field parameters including dissolved oxygen, pH, specific conductance and temperature had stabilized to within 10 percent, and turbidity was either at or below 10 nephelometric turbidity units (NTU) or varied less than 10 percent, for three consecutive readings. Low-flow groundwater sample collection logs are included Appendix A. Purge water was contained within 5-gallon buckets at each sampling location, and later transferred to 55-gallon metal drums for longer-term storage prior to disposal as investigation-derived waste (IDW). Groundwater samples were collected directly into laboratory-preserved sample containers, sealed, stored in accordance with SOPs in the UFP-SAP (e.g., cooled to 4ºC), and shipped via common carrier to Katahdin Analytical Services of Scarborough, ME for analysis. Chain of custody forms for all samples are included in Appendix B. All groundwater samples were analyzed for VOCs by EPA Method 8260. At four locations, additional sample volume was collected for further analysis of specific VOCs (1,2-dibromoethane and 1,2-dibromo-3-chloropropane) with lower detection limits by EPA Method 504.1. At three locations, additional sample volume was collected for analysis of arsenic, iron and manganese by EPA Method 6010.

Quality assurance and quality control (QA/QC) groundwater samples were collected during sampling in accordance with the requirements of the UFP-SAP, and included matrix spike/matrix spike duplicate (MS/MSD) samples, field duplicate samples, trip blanks, and equipment rinsate blanks. QA/QC sample information for MS/MSD and field duplicate samples are included in the sampling logs in Appendix A, and logged in the field notebooks (included in Appendix C). Trip and equipment blanks were logged on chain of custody forms and in the field notebooks, included in Appendices B and C, respectively. Full analytical results tables are included in Appendix D, and summaries of the data validation process are included in Appendix E.

3.1.2 Peconic River Piezometer, Surface Water and Sediment Sampling

Sampling of piezometers, surface water and sediment in and along the Peconic River took place on May 17 and September 21, 2012. The sampling program included the collection of co-located surface water and sediment at four locations, and the collection of shallow groundwater from piezometers on the bank of the Peconic River at four locations (two of which were adjacent to surface water/sediment sampling locations). The sampling locations are along a section of the Peconic River starting at the Connecticut Avenue crossing of the river and reaching approximately 2,100 feet downstream (Figure 3-3). Sampling in May 2012 was conducted in accordance with the previous Work Plan (Tetra Tech 2008a), and sampling in September 2012 was conducted in accordance with the UFP-SAP (Resolution Consultants 2012).

Groundwater samples were collected from the Peconic River piezometers in accordance with the SOPs identified in the Work Plan or UFP-SAP using U.S. EPA low-flow (low-stress) purging and sampling techniques. Low-flow groundwater sample collection logs are included Appendix A. Surface water samples were collected from the northern edge of the sandy bottom portion of the Peconic River at each location, directly into laboratory-preserved sample containers. Samples of fine-grained river sediments were collected from the upper six inches of the riverbed at the same locations as the surface water samples, and transferred to laboratory-provided glassware. All Peconic River piezometer, surface water and sediment samples were sealed, stored in accordance with SOPs in the Work Plan or UFP-SAP (e.g., cooled to 4ºC), and shipped via common carrier to the laboratory for analysis. Samples collected in May 2012 were analyzed by Chemtech of Mountainside, New Jersey, and samples collected in September 2012 were analyzed by Katahdin Analytical Services of Scarborough, Maine. Chain of custody forms for all Peconic River samples are included in Appendix B. All samples were analyzed for VOCs by EPA Method 8260. Sediment samples were also analyzed for total organic carbon (TOC).

3.2 Field Observations

Several notable field observations were recorded during the field activities conducted in May and September 2012. These are summarized as follows:

- Soft bottoms were identified in several monitoring wells and piezometers, indicative of silt or sand accumulation. However, based on the available construction records, the depths of these accumulations were not significant and did not impact the ability to successfully collect groundwater samples at these locations.
- A 0.03-foot thick layer of free product was observed in Site 2 monitoring well FT-MW02S.
- The SCDHS collected split samples at several locations during the September 2012 sampling event. In addition to VOC analyses, SCDHS also collected samples for metals and other inorganic (e.g., nitrates) analyses.

- At Site 6A piezometer FC-PZ05I1, the tubing had shifted and obstructed the riser after sampling, and could not be readily extracted on the day of the synoptic measurements due to time constraints. The groundwater level measured during sampling at FC-PZ05I1 on September 10, 2012 was consistent with those measured nearby at FC-MW05S and FC-MW05I during sampling on the same day, and with the levels observed at these locations during the synoptic well measurements.
- In the Southern Area, the casing of SA-PZ135I was broken below the ground surface. At SA-PZ163I, the casing was bent approximately 6 inches below the ground surface. In both cases it was not possible to lower a water level meter past the obstructions. Dedicated flexible tubing was still in place and intact at both locations, permitting groundwater samples to be collected by peristaltic pumps.
- Site 2 piezometer FT-PZ452S was inadvertently omitted during the round of synoptic water level measurements performed on September 14, 2012. When measured during sampling on September 17, 2012 the groundwater elevation at this location was consistent with water elevations at nearby locations measured during the synoptic well measurements.
- In the Southern Area, the casing of monitoring well SA-MW130I was infested with wasps, precluding the measurement of water level during the round of synoptic water level measurements in the September 2012 sampling event. This well was not scheduled for groundwater sampling.
- At Southern Area piezometer SA-PZ149I1, the tubing had shifted and obstructed the riser after sampling, and could not be readily extracted on the day of the synoptic measurements due to time constraints. The groundwater level measured during sampling at SA-PZ149I on September 13, 2012 was consistent with those measured nearby during the synoptic well measurements the following day at SA-PZ138I1 and SA-PZ157I.
- The water surface elevation could not be established at staff gauge FT-11 in September 2012 as the water level did not reach the bottom of the gauge.

4.0 ANALYTICAL RESULTS AND FINDINGS

This section presents results for the groundwater, surface water and sediment sampling program conducted at NWIRP Calverton as part of annual and semi-annual monitoring performed in May and September 2012, including both analytical laboratory results for water and sediment chemistry and groundwater elevation mapping based on a round of synoptic well, piezometer and staff gauge measurements. Samples collected for laboratory analyses were shipped to Chemtech of Mountainside, New Jersey (in May 2012) or Katahdin Analytical Services of Scarborough, Maine (in September 2012). All samples (groundwater, surface water and sediment) were analyzed for VOCs by EPA Method 8260. Four groundwater samples collected in September were also analyzed for 1,2-dibromoethane and 1,2-dibromo-3-chloropropane by EPA Method 504.1 in order to achieve lower analytical detection limits because these compounds have MCLs below the detection limits typically achieved by Method 8260. In addition, three groundwater samples collected in September 2012 were also analyzed for arsenic, iron and manganese by EPA Method 6010 for monitoring purposes near the 2010 bioremediation pilot. At several locations, groundwater samples were collected by others in February 2012 as part of targeted investigations; additional background information on these results (including data validation memoranda) are presented under a separate cover, but results are presented in this report for additional context.

Groundwater, surface water and sediment chemistry results were screened against several guidance values or criteria. Multiple criteria were employed for comparison, based on sample media. Because the U.S. EPA has designated the groundwater as a sole source aquifer, groundwater chemistry data were compared to drinking water standards. Surface water and sediment data were compared to various criteria and guidance/screening values for the protection of ecological resources or remedial cleanup objectives. The relevant criteria include:

- Groundwater:
  - NYSDOH MCLs: Title 10 New York Code of Rules and Regulations (NYCRR) Part 5, Subpart 5-1, Public Water Systems
    - Table 1 – Inorganic Chemicals and Physical Characteristics MCLs.
    - Table 3 – Organic Chemicals, MCL Determination.
    - Table 9D – Principal Organic Contaminants.
  - Federal MCLs: National Primary Drinking Water Regulations, Title 40 Code of Federal Regulations (CFR) Part 141.
- Surface Water:
  - NYSDEC Surface Water Quality Standards: 6 NYCRR Part 703.5, Table 1 – Water Quality Standards, Surface Waters and Groundwater. The Peconic River is classified as a Class C

surface water, indicating that its best use is for fishing, and that it should also be suitable for fish, shellfish, and wildlife propagation and survival, as well as primary- and secondary-contact recreation.

  - Oak Ridge National Laboratory (ORNL) Surface Water Values: Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision (Suter 1996), Table 1 – Secondary Chronic Values.

- Sediment:
  - ORNL Sediment Values: Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Sediment-Associated Biota: 1997 Revision (Jones 1997), Table 3 – Secondary Chronic Values.
  - NYSDEC Technical Guidance for Screening Contaminated Sediments: 1999 Revision (NYSDEC 1999), Table 1 – Sediment Criteria for Non-Polar Organic Compounds
  - NYSDEC Soil Clean-up Objectives (SCOs): 6 NYCRR Part 375.6, Table 375-6.8(a) – Unrestricted Use.

The primary contaminants identified at NWIRP Calverton are chlorinated and fuel-related VOCs. Chlorinated VOC contaminants include CA, DCA, DCE, PCE, and TCA, while fuel-related contaminants include ethylbenzene, isopropylbenzene, toluene, and xylenes. Discussion about the types and concentrations of contaminants in specific areas throughout NWIRP Calverton follows below. In addition to data collected specifically for the semi-annual and annual monitoring programs during 2012 and to provide context as to history and trends, tables and figures accompanying the discussion generally include analytical results at each location for samples collected from 2010 through 2012.

4.1 Site 2 – Fire Training Area Results

Sampling at Site 2 for the annual groundwater monitoring program included the collection of groundwater samples from a total of 21 monitoring wells and piezometers, and a round of synoptic water level measurements at 29 monitoring wells and piezometers. Twelve monitoring wells and two piezometers are located within the boundaries of Site 2 (i.e., on-property), of which the Navy retains ownership. Groundwater samples and synoptic water level measurements were collected from all of these monitoring wells and piezometers in September 2012. Synoptic water level observations were also made at 15 piezometers located outside Site 2 (i.e., off-property) but installed for the purpose of monitoring the potential migration of contamination from Site 2; groundwater samples were collected from seven of these piezometers in September 2012. Table 4-1 summarizes concentrations of VOCs detected at the Site 2 monitoring wells and piezometers (on- and off-property) from 2008 through 2012; full analytical results for samples collected in 2012 are

included in Appendix D. Figure 4-1 presents a summary of notable VOC detections (including exceedances of any MCL, as well as detections of site-related contaminants previously identified) from 2010 through 2012. Mapping of groundwater elevation contours, based on the data collected during synoptic water depth measurements, is presented in Figure 4-2.

The on-property monitoring wells and piezometers were sampled in September 2012. A total of 13 VOCs were detected in seven of the 14 samples collected; however, none of the detected VOCs exceeded an MCL at any of the on-property monitoring wells in 2012. Except for a TCE concentration of 3.2 µg/L detected at FT-MW03S, all detections of VOCs at Site 2 were less than half of the corresponding MCL. Historically, contamination at the on-property portion of Site 2 has consisted of chlorinated solvents (primarily DCA and TCE) and fuel-related compounds (primarily xylenes and ethylbenzene). A 0.03-foot thick layer of floating free product was observed at monitoring well FT-MW02S.

Eleven of the off-property piezometers were sampled in February 2012 following installation, and seven were sampled in September 2012 (including three that had been sampled in February). A total of 11 VOCs (primarily chlorinated VOCs) were detected in the off-property piezometers, of which five exceeded an MCL. The MCL exceedances were limited to three piezometers (FT-PZ458I, FT-PZ460I, and FT-PZ461I), all of which were sampled in both February and September 2012 and are located on the southeast side of Swan Pond (opposite Site 2 proper). TCE concentrations exceeded the MCL at all three locations in both February and September 2012, with the highest concentrations at FT-PZ460I (440 µg/L in February, 380 µg/L in September) and lower concentrations (by an order of magnitude) at FT-PZ458I and FT-PZ461I. Concentrations of DCA, DCE, 1,2-dichloroethene and PCE also exceeded MCLs at FT-PZ460I in both February and September 2012.

At the four locations where samples were analyzed for 1,2-dibromoethane and 1,2-dibromo-3-chloropropane by EPA Method 504.1 (in addition to Method 8260) in order to achieve lower analytical detection limits, neither compound was detected by either analysis method. The detection limits provided by the Method 504.1 analyses were sufficient to permit evaluation of these compounds concentrations against their MCLs.

4.2 Site 6A – Fuel Calibration Area Results

Sampling at Site 6A included the collection of groundwater samples from six monitoring wells and piezometers, and a round of synoptic water level measurements at nine monitoring wells and piezometers in September 2012. Table 4-2 summarizes concentrations of VOCs detected at the Site 6A monitoring wells and piezometers from 2008 through 2012; full analytical results for samples collected in 2012 are included in Appendix D. Figure 4-3 presents a summary of notable VOC detections from 2010 through 2012. Isoconcentration lines shown in Figure 4-3 have been updated

based on the 2012 data, where warranted, from the previous delineations (Tetra Tech 2012) that include aggregated monitoring well, piezometer and temporary well data. Mapping of groundwater elevation contours, based on the data collected during synoptic water depth measurements, is presented in Figure 4-4.

Two of the locations sampled in September (FC-MW02IR1 and FC-PZ05I1) were also sampled in February 2012, in connection with a separate site-specific investigation. Detectable concentrations of 18 different VOCs were identified at four locations (FC-MW02SR1, FC-MW03SR1, FC-MW05S, and FC-PZ05I1) in 2012, and at least one VOC exceeded an MCL at three of these locations (FC-MW02SR1, FC-MW03SR1, and FC-PZ05I1). Monitoring wells FC-MW02SR1 and FC-MW03SR1 are both located in the source area previously excavated in 2009-2010. DCA was found at a concentration of 8.4 µg/L in FC-MW02SR1 in February, though this decreased to 0.94 µg/L (below the MCL) by September. MCLs were still exceeded at FC-MW02SR1 in September for 1,2-dichlorobenzene, and in both sampling events for ethylbenzene, isopropylbenzene, and xylenes. Concentrations of ethylbenzene and isopropylbenzene also exceeded MCLs at FC-MW03SR1.

Piezometer FC-PZ05I1 is located approximately 600 feet downgradient of monitoring wells FC-MW02SR1 and FC-MW02IR1, and about 400 feet from the downgradient extent of the excavation. Three VOCs (TCA, DCA, and ethylbenzene) exceeded their MCLs in February, though by September isopropylbenzene was the only VOC to exceed its MCL at FC-PZ05I1. Concentrations at FC-PZ05I1, nominally in the center of the plume extending from the source area, were observed at notably (an order of magnitude) lower levels in 2012 as compared to 2010 and 2011.

4.3 Southern Area Results

Sampling in the Southern Area consisted of two rounds of sampling in 2012. The first round of sampling in May 2012 included collection of groundwater samples from four piezometers along the Peconic River, and surface water and sediment samples at four locations along a 2,100-foot section of the river stretching downstream from the Connecticut Avenue overpass. Sampling in September 2012 included the collection of four groundwater, surface water and sediment samples from the same locations sampled in May, as well as the collection of groundwater samples from 38 other monitoring wells and piezometers and a round of synoptic water level measurements at 52 monitoring wells and piezometers. Mapping of groundwater elevation contours, based on the data collected during synoptic water depth measurements, is presented in Figure 4-4.

As previously noted, although the Southern Area is considered part of a single operable unit for management purposes, for discussion purposes the plume in the Southern Area can be further segmented into subareas referred to as the Fence Line Area, Offsite High Concentration Area, Offsite Low Concentration Area, and Peconic River Area based on a combination of location and groundwater chemistry data. For ease of reference, concentrations of VOCs and metals detected in

all Southern Area monitoring wells and piezometers from 2008 through 2012 are consolidated in Table 4-3, organized by station identification, and full analytical results for all groundwater, surface water and sediment samples collected in 2012 are included in Appendix D. However, for clarity, further discussion of results is segregated into the various subareas as shown in Figures 4-5 (Fence Line Area), 4-6 (Offsite High Concentration Area), 4-7 (Offsite Low Concentration Area) and 4-8 (Peconic River Area). Tables 4-4 and 4-5 summarize concentrations of VOCs detected in Peconic River surface water and sediment, respectively. Isoconcentration lines shown in Figures 4-5 through 4-8 have been updated based on the 2012 data, where warranted, from the previous delineations (Tetra Tech 2012) that include aggregated monitoring well, piezometer and temporary well data.

Fence Line Area Results

Groundwater samples were collected in September 2012 from 12 monitoring wells and piezometers in the Fence Line Area, downgradient of Sites 6A and 10B. One location (SA-PZ138I1) was also sampled in February 2012. Seventeen VOCs, most of them chlorinated, were found at detectable concentrations in nine of the wells sampled in the Fence Line Area. Five chlorinated VOCs exceeded an MCL in at least one sample (DCA, TCA, CA, DCE, and 1,4-dichlorobenzene), and all of the MCLs were exceeded at three locations (SA-PZ138I1, SA-PZ149I1, and SA-PZ157I1). The highest overall concentrations were also detected at these locations. SA-PZ138I1 had the highest concentration of DCA at 690 µg/L in February. In addition, DCA was also detected in SA-PZ157I at 550 µg/L and SA-PZ149I1 at 520 µg/L. CA was detected in SA-PZ138I1 at concentrations of 150 µg/L in February and 54 µg/L in September, in SA-PZ157I1 at 270 µg/L in September, and in SA-PZ149I1 at 180 µg/L in September. Detected concentrations of these and other chlorinated VOCs were about one order of magnitude lower at the Fence Line Area monitoring wells and piezometers other than SA-PZ138I1, SA-PZ149I1 and SA-PZ157I1. Notable VOC MCL exceedances and detections for the Fence Line Area are presented in Figure 4-5.

Samples from piezometers SA-PZ157I, SA-PZ157I1 and SA-PZ161I were also analyzed for arsenic, iron and manganese, for monitoring purposes following the 2010 bioremediation pilot. MCLs were exceeded at SA-PZ161I, at concentrations of 22.2 µg/L for arsenic, 9,630 µg/L for iron, and 1,410 µg/L for manganese. Manganese also exceeded its MCL at PA-PZ157I (325 µg/L) and SA-PZ157I1 (5,200 µg/L), and iron exceeded its MCL at SA-PZ157I (519 µg/L). Arsenic had a concentration of 1.6 µg/L at SA-PZ157I and was not detected at SA-PZ157I.

Offsite High Concentration Area Results

Groundwater samples were collected from five piezometers in September 2012 from the Offsite High Concentration Area, which was delineated based on prior monitoring well, piezometer and

temporary well data as the area where DCA concentrations may exceed 500 µg/L. Detectable concentrations of VOCs were found at all five piezometers, and four VOCs (all chlorinated) exceeded MCLs. The MCL for DCA was exceeded at all five locations, with concentrations ranging from 28 µg/L (SA-PZ145D) to 430 µg/L (SA-PZ143). In addition, groundwater at SA-PZ142 and SA-PZ143 also exceeded MCLs for TCA, DCE, and CA. Notable VOC MCL exceedances and detections for the Offsite High Concentration Area are presented in Figure 4-6.

Offsite Low Concentration Area Results

Groundwater samples were collected from 18 monitoring wells and piezometers in September 2012 from the Offsite Low Concentration Area, which was delineated based on prior monitoring well, piezometer and temporary well data as the area where DCA concentrations were expected to be less than 500 µg/L. Samples were also collected from two of these wells (SA-PZ171I and SA-PZ172I) in February 2012. Detectable concentrations of 15 VOCs, primarily chlorinated, were found at 13 of the piezometers (including detections in both February and September 2012 at SA-PZ171I and SA-PZ172I), and concentrations of four of these chlorinated VOCs (DCA, TCA, DCE and CA) exceeded their MCLs in at least one sample. Overall, at least one VOC MCL was exceeded at six locations in the Offsite Low Concentration Area.

At SA-MW132I, SA-PZ171I and SA-PZ172I, MCLs were exceeded for DCA, TCA, DCE and CA, with DCA concentrations ranging from 150 to 470 µg/L, TCA from 22 to 66 µg/L, DCE from 5.3 to 40 µg/L, and CA from 12 to 37 µg/L. These three locations are all located in the western side of the Offsite Low Concentration Area, closest to the High Concentration Area. In addition, DCA exceeded its MCL at SA-PZ123I, SA-PZ123I1, and SA-MW131D, DCE also exceeded its MCL at SA-PZ123I and SA-PZ123I1, and TCE also exceeded its MCL at SA-PZ-123I1. Notable VOC MCL exceedances and detections for the Offsite Low Concentration Area are presented in Figure 4-7.

Peconic River Area Results

Groundwater samples were collected from four piezometers located along the banks of the Peconic River, and surface water and sediment samples were collected from four locations along the river in an area extending 2,100 feet downstream from Connecticut Avenue in May and September 2012. In addition, three other piezometers in areas where groundwater may be influenced by the Peconic River (SA-PZ118I, SA-PZ118S, and SA-PZ166I) were also sampled in September 2012. Collectively, these sampling locations comprise the Peconic River Area. Notable exceedances and detections of groundwater MCLs, surface water standards and sediment quality guidance values for the Peconic River Area are presented in Figure 4-8.

Detectable concentrations of ten VOCs were identified across four of the seven Peconic River Area piezometers (SA-PZ118S, SA-PZ124, SA-PZ147, SA-PZ148). DCA exceeded its MCL at all four of

these locations (21 µg/L in September at SA-PZ118S, 74 µg/L in May and 130 µg/L in September at SA-PZ124, 12 µg/L in September at SA-PZ147, and 18 µg/L in May at SA-PZ148). DCE concentrations also exceeded the MCL at SA-PZ124; DCE was found at a concentration of 6.4 µg/L in May and 13 µg/L in September. TCE also exceeded its MCL at SA-PZ124 in September, with a concentration of 7.8 µg/L.

Two VOCs (DCA and acetone) were identified at detectable concentrations at three of the four surface water sampling stations in 2012 (SA-SW124, SA-SW201, and SA-SW204); however, acetone is typically considered to be a laboratory contaminant in the absence of historic analytic or other data that suggest a release has occurred. DCA was observed at two of the surface water sampling stations: SA-SW124 in May (1.1 µg/L) and September 2012 (1.8 µg/L), and SA-SW204 in September 2012 (0.57 µg/L). The Peconic River is designated by the NYSDEC as a Class C waterbody for entire length of the river included within the monitoring program; while there are no Class C ambient water quality standards for DCA or acetone, the concentrations of these VOCs observed in the Peconic River did not exceed the more restrictive Class A water supply standards or the NYSDOH drinking water MCL, both of which were established for the purposes of protection of water supplies.

Sediment samples were collected from four locations in May and September 2012, and detectable concentrations of three VOCs (DCA, CA and acetone) were identified. However, acetone is likely a laboratory contaminant (as discussed previously). DCA and CA were detected at only one location, SA-SD124, in May 2012 at concentrations of 20 and 4.3 µg/Kg, respectively. These detections did not exceed any relevant sediment quality guidance values. Non-detect analytical results for the sample collected at SA-SD125 in September 2012 were rejected because of insufficient total solids content.

5.0 CONCLUSIONS

Conclusions based on groundwater, surface water and sediment sampling conducted at NWIRP Calverton in 2012 are as follows:

5.1 Site 2 – Fire Training Area

1. No MCL exceedances were identified on-property at Site 2 at any of the 14 monitoring wells and piezometers sampled in September 2012 and, with one exception at FT-MW03S, all VOCs that were detected were found at concentrations less than half of their respective MCLs.

2. Since 2009, VOC concentrations have exceeded MCLs on-property at Site 2 only at FT-MW02S, while at the remaining locations contaminant concentrations have all been below MCLs, and in most cases not detected over this same time period. Concentrations of DCA, ethylbenzene, xylenes and TCE at FT-MW02S have exceeded MCLs as recently as 2011, and most of these contaminants continue to be found at detectable concentrations. Although somewhat variable, contaminant concentrations at FT-MW02S have been decreasing over time.

3. A 0.03-foot thick layer of free product was observed in monitoring well FT-MW02S during sampling in September 2012.

4. Elevated levels of chlorinated VOCs were identified at several off-property locations, southeast of Swan Pond. Five chlorinated VOCs were found to exceed MCLs at FT-PZ460I, with TCE concentrations as high as 440 µg/L in February and 380 µg/L in September 2012. TCE concentrations at FT-PZ458I and FT-PZ461I also exceeded the MCL. Further study of this area to investigate potential sources of what otherwise appears as an isolated pocket of chlorinated VOCs is ongoing.

5.2 Site 6A – Fuel Calibration Area

1. VOC concentrations exceeded MCLs at three locations (FC-MW02SR1, FC-MW03SR1, and FC-PZ05I1). The highest concentrations were found at FC-MW02SR1, which is located in the previously-excavated source area. Concentrations at FC-PZ05I1, downgradient of the source area and nominally in the center of the plume extending from Site 6A, were observed at notably lower concentrations in 2012 as compared to 2010 and 2011. The installation of additional monitoring wells cross-gradient to FC-PZ05I1 is planned for 2013, which will allow for evaluation of potential lateral shifting of the plume through this area.

5.3 Southern Area

1. Analytical data collected in 2012 generally confirm the overall extent of the groundwater plume in the Southern Area, which extends roughly in a southeasterly direction from the Sites 6A/10B source area.

2. Contaminant concentrations continue to fluctuate in some areas, particularly in the Fence Line Area (e.g., SA-PZ149I1, SA-PZ138I1, SA-PZ161I, SA-PZ157I1). These fluctuations are likely the result of variable groundwater flow, driven by precipitation events and local surface water bodies. This fluctuation will continue to be monitored using the existing monitoring well and piezometer network, and will be augmented by the installation of new monitoring wells (e.g., near FC-PZ05I1) to monitor changes in flow from the source area.

3. Groundwater flow models will continue to be refined based on data from piezometers recently installed on Suffolk County Department of Parks, Recreation and Conservation property around the Swan Lake and Donohue Pond areas.

4. Limited detections of VOCs in Peconic River surface water continue to be noted, but are below standards or screening values. DCA was detected at SA-SW124 at concentrations of 1.1 µg/L and 1.8 µg/L in May and September 2012, respectively, and at SA-SW204 at a concentration of 0.57 µg/L in September 2012. Over the course of at least nine rounds of surface water sampling at four locations, a VOC was detected in excess of screening values only once (a 6.2 µg/L concentration of TCE at SA-SW124 in September 2011).

5. Similarly, detections of VOCs in Peconic River surface sediments are limited. DCA and CA were detected at SA-SD124 in May 2012 at concentrations of 20 and 4.3 µg/Kg, respectively, but not in excess of screening criteria. Excluding detections of acetone (a common laboratory contaminant), the only detection of a VOC in excess of screening criteria over the course of at least eight rounds of sampling at each of the four sediment sampling locations was a concentration of 3.4 µg/Kg of carbon disulfide at SA-SD124 in July 2010.

5.4 General Conclusions

1. The primary contaminants identified across NWIRP Calverton and offsite areas are chlorinated VOCs such as DCA, TCA, DCE and CA. Other VOCs that have historically been detected above MCLs (though not necessarily in 2012) include isopropylbenzene, ethylbenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, naphthalene, xylenes, and vinyl chloride.

2. The monitoring well network will continue to be evaluated for data gaps, as well as surplus monitoring wells and piezometers. The installation of additional monitoring wells near FC-

PZ05I1 is already planned to evaluate lateral variability in the groundwater plume, and other wells and piezometers will be considered for abandonment.

3. Semi-annual surface water and in-river piezometer sampling on the Peconic River will continue, and results will be used to establish trends and support additional remedial actions as necessary, as provided for in the Southern Area Record of Decision (NAVFAC MIDLANT 2012).

6.0 REFERENCES

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Tables

Table 3-1
Site 2 - Fire Training Area
Well Construction Details and Measurements
NWIRP Calverton, New York

Depth Unit	Well	Installation Date	Total Depth (ft bgs)	Screened Interval Depth (ft bgs)	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Total Depth (ft BTOC)	Sept. 2012 Measured Depth (ft BTOC)	Well Bottom Elevation (ft MSL)	Sept 2012 Water Level (ft BTOC)	Sept 2012 Water Elevation (ft MSL)	Sept 2011 Water Elevation (ft MSL)
On-Property												
Shallow	FT-MW01S	6/30/1994	28.5	18.5 - 28.5	62.98	62.12	30.10	30.20	32.78	23.43	39.55	41.04
	FT-MW02S	7/5/1994	20.5	10.5 - 20.5	54.45	53.34	NA	22.60	NA	15.34	39.11	40.71
	FT-MW03S	6/30/1994	31.5	21.5 - 31.5	65.68	64.38	32.54	32.57	34.33	26.11	39.57	41.32
	FT-MW05S	7/7/1994	17.5	7.5 - 17.5	50.39	49.37	19.71	19.90	31.77	11.84	38.55	40.12
	FT-MW06S	7/7/1994	27	17 - 27	60.13	59.44	28.83	29.10	32.45	21.25	38.88	40.54
	FT-MW07S	7/7/1994	35	25 - 35	69.17	68.33	36.44	36.80	33.86	29.96	39.21	40.87
	FT-MW08S	6/7/1997	14	3 - 14	46.40	NA	16.08	16.30	31.84	8.30	38.10	40.10
	FT-PZ452S	12/12/2011	16	6 - 16	49.33	NA	NA	NM	NA	10.95 [1]	38.38 [1]	NM
Intermediate	FT-MW01I	7/13/1994	78	68 - 78	62.62	62.11	79.70	79.80	-15.54	23.14	39.48	41.64
	FT-MW02I	7/20/1994	80	70 - 80	54.31	53.26	70.47	70.60	-14.90	15.17	39.14	40.96
	FT-MW05I	7/19/1994	58	48 - 58	51.37	49.87	59.90	60.10	-7.98	12.26	39.11	40.15
	FT-MW06I	7/14/1994	75	65 - 75	61.18	60.38	75.71	76.00	-13.72	22.25	38.93	40.24
	FT-MW08I	6/21/1997	33	23 - 33	46.65	NA	35.61	35.80	12.40	8.37	38.28	40.10
Off-Property												
Shallow	FT-PZ451S	12/12/2011	15	5 - 15	48.84	NA	NA	17.40	NA	10.18	38.66	NA
	FT-PZ453S	*12/12/2011*	*13*	*3 - 13*	*45.53*	*NA*	*NA*	*15.70*	*NA*	*7.87*	*37.66*	*NA*
	FT-PZ454S	12/12/2011	13	3 - 13	46.01	NA	NA	15.15	NA	8.58	37.43	NA
	FT-PZ455S	12/6/2011	35	25 - 35	67.97	NA	NA	NA	NA	29.32	38.65	NA
	FT-PZ456S	12/9/2011	13	3 - 13	44.24	NA	NA	15.40	NA	8.65	35.59	NA
	FT-PZ457S	*12/2/2011*	*14*	*4 - 14*	*44.40*	*NA*	*NA*	*16.60*	*NA*	*10.31*	*34.09*	*NA*
	FT-PZ458S	*11/29/2011*	*13*	*3 - 13*	*39.52*	*NA*	*NA*	*16.50*	*NA*	*5.35*	*34.17*	*NA*
	FT-PZ459S	*11/18/2011*	*17*	*7 - 17*	*44.50*	*NA*	*NA*	*19.60*	*NA*	*11.51*	*32.99*	*NA*
	FT-PZ462S	12/7/2011	13	3 - 13	41.76	NA	NA	NM	NA	5.14	36.62	NA
Intermediate	*FT-PZ455I*	*12/6/2011*	*73*	*68 - 73*	*67.65*	*NA*	*NA*	*75.70*	*NA*	*28.88*	*38.77*	*NA*
	FT-PZ456I	*12/9/2011*	*52*	*47 - 52*	*44.32*	*NA*	*NA*	*54.60*	*NA*	*8.81*	*35.51*	*NA*
	FT-PZ458I	12/2/2011	45	40 - 45	38.56	NA	NA	47.10	NA	5.30	33.26	NA
	FT-PZ459I	*11/18/2011*	*46*	*41 - 46*	*44.92*	*NA*	*NA*	*48.60*	*NA*	*11.82*	*33.10*	*NA*
	FT-PZ460I	12/1/2011	50	45 - 50	42.35	NA	NA	52.50	NA	10.18	32.17	NA
	FT-PZ461I	11/30/2011	59	54 - 59	49.92	NA	NA	61.60	NA	19.19	30.73	NA
	FT-PZ462I	*12/7/2011*	*49*	*44 - 49*	*42.17*	*NA*	*NA*	*51.10*	*NA*	*5.57*	*36.60*	*NA*

Notes:

bgs = Feet below ground surface

BTOC = Below top of casing

MSL = Feet Mean Sea Level

NA = Not available

NM = Not measured

Italics = Identifies monitoring well/piezometer used for water level measurement only (i.e., no groundwater sample collected)

[1] - Water level as measured during sampling, not during synoptic well measurements; result not considered for purposes of groundwater contour mapping

Table 3-2
Site 6A - Fuel Calibration Area
Well Construction Details and Measurements
NWIRP Calverton, New York

Depth Unit	Well	Installation Date	Total Depth (ft bgs)	Screened Interval Depth (ft bgs)	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Total Depth (ft BTOC)	Sept. 2012 Measured Depth (ft BTOC)	Well Bottom Elevation (ft MSL)	Sept 2012 Water Level (ft BTOC)	Sept 2012 Water Elevation (ft MSL)	Sept 2011 Water Elevation (ft MSL)
Shallow	FC-MW02SR1	5/24/2010	14.5	NA	46.33	NA	NA	16.80	NA	8.62	37.71	38.71
	FC-MW03SR1	5/24/2010	14.5	NA	45.83	NA	NA	16.50	NA	8.27	37.56	38.58
	FC-MW04S	*7/22/1994*	*13*	*3 - 13*	*45.40*	*44.46**	*15.10*	*15.03*	*30.30*	*7.94*	*37.46*	*38.49*
	FC-MW05S	7/15/1994	16	6 - 16	48.03	45.50*	17.74	18.00	30.29	10.97	37.06	38.06
	FC-MW06S	*7/20/1994*	*19*	*9 - 19*	*50.66*	*48.48*	*20.98*	*21.10*	*29.68*	*12.98*	*37.68*	*38.62*
Intermediate	FC-MW02IR1	5/24/2010	52.5	NA	46.40	NA	NA	54.00	NA	8.61	37.79	38.81
	FC-MW04I	*7/26/1994*	*50*	*40-50*	*45.32*	*44.37**	*51.38*	*44.71*	*-6.06*	*7.87*	*37.45*	*38.50*
	FC-MW05I	7/21/1994	58	48-58	47.35	45.43*	59.37	59.70	-12.02	10.26	37.09	38.03
	FC-PZ05I1	12/16/2010	30	20-30	47.85	NA	NA	NM	NA	10.74 [1]	37.11 [1]	NA

Notes:
bgs = Feet below ground surface
BTOC = Below top of casing
MSL = Feet Mean Sea Level
NA = Not available
NM = Not measured
Italics = Identifies monitoring well/piezometer used for water level measurement only (i.e., no groundwater sample collected)
* = Estimated
[1] - Water level as measured during sampling, not during synoptic well measurements; result not considered for purposes of groundwater contour mapping

Table 3-3
Southern Area
Well Construction Details and Measurements
NWIRP Calverton, New York

Depth Unit	Well	Installation Date	Total Depth (ft bgs)	Screened Interval Depth (ft bgs)	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Total Depth (ft BTOC)	Sept. 2012 Measured Depth (ft BTOC)	Well Bottom Elevation (ft MSL)	Sept 2012 Water Level (ft BTOC)	Sept 2012 Water Elevation (ft MSL)	Sept 2011 Water Elevation (ft MSL)
Offsite High Concentration Area												
Shallow	*SA-PZ145S*	*6/20/2010*	*15*	*5 - 15*	*40.95*	*37.95*	*17.79*	*18.00*	*23.16*	*10.66*	*30.29*	*31.27*
Intermediate	SA-PZ140I	6/14/2010	49.5	44.5 - 49.5	46.40	43.32	52.21	52.50	-5.81	14.35	32.05	32.48
	SA-PZ142I	6/16/2010	45.5	40.5 - 45.5	47.26	44.47	48.32	48.60	-1.06	15.78	31.48	32.05
	SA-PZ143I	6/17/2010	46	41 - 46	46.39	43.95	48.24	48.60	-1.85	15.21	31.18	31.65
	SA-PZ145I	6/21/2010	35	30 - 35	41.11	38.11	37.72	38.00	3.39	10.44	30.67	31.26
Deep	SA-PZ145D	6/22/2010	55	50 - 55	40.98	37.84	57.80	58.00	-16.82	10.63	30.35	30.78
Offsite Low Concentration Area												
Shallow	*SA-MW128S*	*12/14/2007*	*17*	*7 - 17*	*40.54*	*38.19*	*18.81*	*19.19*	*21.73*	*9.96*	*30.58*	*31.46*
	SA-MW129S	12/19/2007	29.5	19.5 - 29.5	51.92	49.75	31.32	31.60	20.60	23.16	28.76	29.69
	SA-MW131S	*9/2/2009*	*14*	*4 - 14*	*38.59*	*36.20*	*16.31*	*16.50*	*22.28*	*9.19*	*29.40*	*30.03*
	SA-MW132S	9/8/2009	14	4 - 14	36.75	34.09	16.90	17.10	19.85	6.24	30.51	30.88
	SA-PZ122S	*12/21/2007*	*22*	*12 - 22*	*43.75*	*41.11*	*24.68*	*24.90*	*19.07*	*15.56*	*28.19*	*28.79*
	SA-PZ123S	1/2/2008	17	7 - 17	36.96	34.47	19.07	19.40	17.89	9.66	27.30	27.74
	SA-PZ144S	*6/18/2010*	*15*	*5 - 15*	*41.50*	*38.82*	*17.42*	*17.80*	*24.08*	*9.42*	*32.08*	*32.45*
Intermediate	SA-MW128I	12/13/2007	40	30 - 40	40.96	38.62	42.20	NM	-1.24	10.42	30.54	31.42
	SA-MW129I	12/19/2007	60	50 - 60	52.16	49.92	62.42	62.60	-10.26	23.31	28.85	39.66
	SA-MW131I	9/2/2009	40	30 - 40	38.24	36.03	41.55	41.80	-3.31	8.85	29.39	30.02
	SA-MW132I	9/3/2009	37	27 - 37	36.76	34.02	40.08	40.30	-3.32	6.26	30.50	30.88
	SA-PZ122I	12/20/2007	49	39 - 49	43.57	41.20	51.22	51.50	-7.65	15.32	28.25	28.85
	SA-PZ123I1	1/2/2008	42	32 - 42	37.51	34.75	44.40	44.70	-6.89	10.17	27.34	27.77
	SA-PZ134I	3/24/2010	44	39 - 44	39.62	NA	46.75	44.80	-7.13	7.41	32.21	33.27
	SA-PZ144I	6/19/2010	50	45 - 50	41.76	38.93	52.07	52.40	-10.31	9.35	32.41	32.81
	SA-PZ171I	11/17/2011	46.5	41.5 - 46.5	46.31	NA	48.79	49.00	-2.48	15.76	30.55	NA
	SA-PZ172I	11/17/2011	48.5	43.5 - 48.5	45.92	NA	49.62	50.80	-3.70	15.81	30.11	NA
Deep	SA-MW128D	12/12/2007	68	58 - 68	40.64	38.34	70.24	70.50	-29.60	10.74	29.90	30.79
	SA-MW129D	12/18/2007	90	80 - 90	52.19	49.92	92.01	92.20	-39.82	23.27	28.92	29.74
	SA-MW131D	9/1/2009	70	60 - 70	37.82	35.84	71.85	81.30	-34.03	8.59	29.23	29.95
	SA-PZ122D	12/21/2007	132	122 - 132	43.47	41.31	134.49	134.80	-91.02	14.99	28.48	29.23
	SA-PZ123I	1/3/2008	80	70 - 80	38.02	35.16	83.66	83.90	-45.64	10.78	27.24	27.65

Notes:

bgs = Feet below ground surface
BTOC = Below top of casing
MSL = Feet Mean Sea Level
NA = Not available
NM = Not measured
Italics = Identifies monitoring well/piezometer used for water level measurement only (i.e., no groundwater sample collected)
* = Estimated
[1] - Water level as measured during sampling, not during synoptic well measurements; result not considered for purposes of groundwater contour mapping

Table 3-3
Southern Area
Well Construction Details and Measurements
NWIRP Calverton, New York

Depth Unit	Well	Installation Date	Total Depth (ft bgs)	Screened Interval Depth (ft bgs)	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Total Depth (ft BTOC)	Sept. 2012 Measured Depth (ft BTOC)	Well Bottom Elevation (ft MSL)	Sept 2012 Water Level (ft BTOC)	Sept 2012 Water Elevation (ft MSL)	Sept 2011 Water Elevation (ft MSL)
Fence Line Area												
Shallow	SA-MW126S	12/6/2007	15	5 - 15	39.79	37.36	17.57	17.50	22.22	5.67	34.12	34.72
	SA-MW127S	*12/11/2007*	*15*	*5 - 15*	*40.57*	*38.26*	*17.15*	*17.40*	*23.42*	*7.63*	*32.94*	*33.67*
	SA-MW130S	*9/10/2009*	*19*	*9-19*	*48.60*	*45.83*	*21.64*	*21.65*	*26.96*	*14.31*	*34.29*	*35.27*
Intermediate	SA-MW126I	12/6/2007	50	40 - 50	39.97	37.52	52.18	52.27	-12.21	5.71	34.26	34.78
	SA-MW127I	12/11/2007	46	36 - 46	40.79	38.43	48.20	48.40	-7.41	7.81	32.98	33.70
	SA-MW130I	*9/9/2009*	*50*	*36 - 46*	*48.33*	*45.91*	*48.16*	*NM*	*0.17*	*NM*	*NM*	*35.23*
	SA-PZ133I	*3/23/2010*	*47*	*42 - 47*	*41.55*	*39.51*	*49.25*	*49.30*	*-7.70*	*8.58*	*32.97*	*33.68*
	SA-PZ135I	3/23/2010	47	41.5 - 46.5	38.75	36.69	48.14	47.90	-9.39	NM	NM	34.01
	SA-PZ136I	*3/22/2010*	*53*	*44 - 49*	*39.55*	*37.42*	*50.59*	*50.50*	*-11.04*	*6.03*	*33.52*	*34.10*
	SA-PZ137I	*3/23/2010*	*54*	*49 - 54*	*41.67*	*39.25*	*56.22*	*56.30*	*-14.55*	*8.00*	*33.67*	*34.27*
	SA-PZ138I1	6/10/2010	42	37 - 42	39.80	37.20	44.62	44.66	-4.82	5.87	33.93	34.70
	SA-PZ139I	3/25/2010	48	42.5 - 47.5	42.28	39.95	49.42	45.53	-7.14	8.85	33.43	34.15
	SA-PZ149I1	6/9/2010	37	32 - 37	44.73	42.24	39.13	NM	5.60	10.51 [1]	34.22 [1]	34.94
	SA-PZ157I	6/7/2010	46	41 - 46	39.51	NA	NA	48.20	NA	5.69	33.82	NA
	SA-PZ157I1	6/7/2010	38	33 - 38	39.76	37.30	NA	40.65	NA	5.83	33.93	NA
	SA-PZ160I	*6/8/2010*	*46*	*41 - 46*	*39.29*	*NA*	*NA*	*48.03*	*NA*	*5.74*	*33.55*	*NA*
	SA-PZ161I	6/10/2010	46	41 - 46	40.59	38.21	47.98	45.60	-7.39	4.18	36.41	34.15
	SA-PZ163I	6/10/2010	42	32 - 42	40.17	NA	44.49	NM	-4.32	NM	NM	33.49
Deep	SA-MW126D	12/4/2007	84	74 - 84	40.04	37.37	86.87	86.98	-46.83	8.18	31.86	32.68
	SA-MW127D	*12/10/2007*	*78*	*68 - 78*	*40.57*	*38.46*	*77.14*	*77.40*	*-36.57*	*9.97*	*30.60*	*31.77*
Peconic River Area												
Shallow	SA-PZ118S	5/3/2007	16	6 - 16	31.13	29.23	18.48	18.80	12.65	8.43	22.70	25.93
	SA-PZ120S	*5/4/2007*	*18*	*8 - 18*	*32.48*	*30.34**	*21.11*	*21.06*	*11.37*	*3.85*	*28.63*	*26.01*
	SA-PZ124	10/10/2006	6	3 - 6	NA	NA	NA	NA	NA	NA	NM	NA
	SA-PZ125	10/10/2006	6	3 - 6	NA	NA	NA	NA	NA	NA	NM	NA
	SA-PZ147	7/20/2010	6	3 - 6	NA	NA	NA	NA	NA	NA	NM	NA
	SA-PZ148	7/20/2010	6	3 - 6	NA	NA	NA	NA	NA	NA	NM	NA
Intermediate	SA-PZ118I	5/3/2007	60	50 - 60	31.68	29.22	61.24	61.50	-29.56	9.10	22.58	25.87
	SA-PZ166I	6/25/2010	80	60 - 80	33.03	NA	NA	83.20	NA	6.81	26.22	26.52

Notes:

bgs = Feet below ground surface
BTOC = Below top of casing
MSL = Feet Mean Sea Level
NA = Not available
NM = Not measured
Italics = Identifies monitoring well/piezometer used for water level measurement only (i.e., no groundwater sample collected)
* = Estimated
[1] - Water level as measured during sampling, not during synoptic well measurements; result not considered for purposes of groundwater contour mapping

Table 3-4
Staff Gauge Details and Measurements
NWIRP Calverton, New York

Gauge	Location	Installation Date	Top of Gauge Elevation (ft MSL)	Sept 2012 Water Level Reading	Sept 2012 Water Elevation (ft MSL)	Sept 2011 Water Elevation (ft MSL)
Staff Gauge #1 WS PRSC	Donahue Pond, West Side	9/29/2009	32.24	1.20	30.11	30.52
Staff Gauge #2 ES PRSC	Donahue Pond, East Side	9/29/2009	32.45	1.30	30.42	30.74
BM ES Connecticut Ave. Headwall	Peconic River at Connecticut Ave.	NA	30.44	5.39	25.05	25.11
FT-10	McKay Lake	12/15/2011	40.85	0.68	38.20	NM
FT-11	Southern Area Intermittent Stream	12/15/2011	38.65	Dry	--	NM
FT-12	Swan Pond, West Side	12/15/2011	39.05	1.04	36.76	NM
FT-13	Swan Pond, West Side	12/15/2011	38.39	1.04	36.10	NM

Notes:
BM = Benchmark
ES = East side
MSL = Feet Mean Sea Level
NA = Not available
NM = Not measured
PRSC - Peconic River Sportsman's Club
WS = West side
-- = Could not be calculated; water level outside of gauge limits

Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW01I 1/10/08	FT-MW01I 9/1/09	FT-MW01I 9/14/10	FT-MW01I 3/14/11	FT-MW01I 10/18/11	FT-MW01I 9/17/12	FT-MW01S 1/10/08	FT-MW01S 9/1/09	FT-MW01S 9/14/10	FT-MW01S 3/14/11	FT-MW01S 10/18/11	FT-MW01S 9/17/12	FT-MW02I 1/10/08	FT-MW02I 9/1/09	FT-MW02I 9/14/10
Screened Interval (feet bgs)				**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**18.5 - 28.5**	**18.5 - 28.5**	**18.5 - 28.5**	**18.5 - 28.5**	**18.5 - 28.5**	**18.5 - 28.5**	**70 - 80**	**70 - 80**	**70 - 80**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	1.5 J	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	**76**	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	-	0.58 J	ND	ND	ND	ND	-	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	0.7 J	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	0.5 J	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**71**	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	-	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	4.2 J	-	-	-	-	ND	ND	-	-	-	-	ND	ND
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13**	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.4 J**	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND	ND

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW02I 3/15/11	FT-MW02I 9/29/11	FT-MW02I 9/17/12	FT-MW02S 1/10/08	FT-MW02S 9/1/09	FT-MW02S 9/1/09 (DUP)	FT-MW02S 9/14/10	FT-MW02S 9/14/10 (DUP)	FT-MW02S 3/15/11	FT-MW02S 3/15/11 (DUP)	FT-MW02S 9/29/11	FT-MW02S 9/29/11 (DUP)	FT-MW02S 9/17/12	FT-MW03S 1/9/08	FT-MW03S 9/1/09
Screened Interval (feet bgs)				**70 - 80**	**70 - 80**	**70 - 80**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**10.5 - 20.5**	**21.5 - 31.5**	**21.5 - 31.5**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	**17**	**5.7 J**	**5.9 J**	**15**	**11**	ND	0.81 J	1.2	1.3	0.90 J	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	2.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	**21**	**5.2 J**	**5.3 J**	4.3 J	4.2 J	ND	0.58 J	3.9	3.7	1.3	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	-	ND	**9 J**	ND	ND	ND	ND	-	-	-	-	2.2	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	**8**	2 J	1.6 J	1.6 J	ND	ND	ND	1.3	1.2	0.60 J	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	6	10 J	8.1 J	15	12 J	26 J	13 J	6.1 J	6 J	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	12	ND	ND	**64**	**55**	27 J	R	12 J	9.5 J	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	0.31 J	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	2.3 J	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	**9**	ND	ND	ND	ND	4.1 J	2.8 J	0.73 J	0.88 J	2.2	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	1 J	1.7 J	1.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	**24**	**14 J**	**15 J**	**6.2**	**5.3**	4.7	4.8	ND	ND	0.44 J	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	**8**	4.8 J	**5 J**	2.5 J	1.8 J	0.89 J	0.8 J	ND	ND	0.45 J	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	**120**	**18 J**	**20 J**	**8.6 J**	**6.3 J**	**7.8**	**7.6**	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	3 J	2.5 J	2.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	41 J	41 J	26	20	-	-	-	-	-	-	ND
O-XYLENE	95-47-6		5	ND	ND	ND	**47**	4.7 J	**5.2 J**	**13**	**10**	**16**	**16**	3	2.8	0.70 J	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.91 J	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	**46**	ND	ND	ND	ND	4.5	4.4	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	0.6 J	ND	ND	2.8 J	2.8 J	**11**	**12**	ND	0.74 J	0.54 J	0.6 J	2.2 J
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	**3 J**	1.4 J	1.4 J	ND	ND	ND	ND	1.8	1.4	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	-	-	ND	**170**	**23 J**	**25 J**	**22 J**	**16 J**	-	-	-	-	0.70 J	ND	ND

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW03S 9/14/10	FT-MW03S 3/14/11	FT-MW03S 10/18/11	FT-MW03S 9/17/12	FT-MW04S 1/9/08	FT-MW04S 9/2/09	FT-MW04S 9/14/10	FT-MW04S 3/14/11	FT-MW04S 9/29/11	FT-MW05I 1/8/08	FT-MW05I 8/31/09	FT-MW05I 9/14/10	FT-MW05I 3/14/11	FT-MW05I 9/29/11	FT-MW05I 9/17/12
Screened Interval (feet bgs)				**21.5 - 31.5**	**21.5 - 31.5**	**21.5 - 31.5**	**21.5 - 31.5**	**17 - 27**	**17 - 27**	**17 - 27**	**17 - 27**	**17 - 27**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND	-	-	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	-	ND	ND	ND	ND	ND	ND	0.8 J	ND	0.52 J	ND	0.79 J	0.68 J
CHLOROMETHANE	74-87-3		5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	ND	ND	-	-	-	1.8 J	ND	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	3.2	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND	-	-	ND

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW05I 9/17/12 (DUP)	FT-MW05S 1/8/08	FT-MW05S 8/31/09	FT-MW05S 9/14/10	FT-MW05S 3/14/11	FT-MW05S 9/29/11	FT-MW05S 9/17/12	FT-MW06I 1/8/08	FT-MW06I 9/1/09	FT-MW06I 9/14/10	FT-MW06I 3/14/11	FT-MW06I 9/29/11	FT-MW06I 9/18/12	FT-MW06S 1/8/08	FT-MW06S 9/1/09
Screened Interval (feet bgs)				**48 - 58**	**7.5 - 17.5**	**7.5 - 17.5**	**7.5 - 17.5**	**7.5 - 17.5**	**7.5 - 17.5**	**7.5 - 17.5**	**65 - 75**	**65 - 75**	**65 - 75**	**65 - 75**	**65 - 75**	**65 - 75**	**17 - 27**	**17 - 27**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	0.66 J	ND	ND	ND	ND	ND	ND	0.6 J	ND	0.51 J	0.63 J	0.52 J	0.44 J	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	-	-	ND	ND	-	-	-	-	ND
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
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* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW06S 9/14/10	FT-MW06S 3/14/11	FT-MW06S 9/29/11	FT-MW06S 9/18/12	FT-MW07S 1/9/08	FT-MW07S 1/9/08 (DUP)	FT-MW07S 9/1/09	FT-MW07S 9/14/10	FT-MW07S 3/15/11	FT-MW07S 9/29/11	FT-MW07S 9/17/12	FT-MW08I 1/8/08	FT-MW08I 9/1/09	FT-MW08I 9/14/10	FT-MW08I 3/14/11
Screened Interval (feet bgs)				**17 - 27**	**17 - 27**	**17 - 27**	**17 - 27**	**25 - 35**	**25 - 35**	**25 - 35**	**25 - 35**	**25 - 35**	**25 - 35**	**25 - 35**	**23 - 33**	**23 - 33**	**23 - 33**	**23 - 33**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2 J	1.2
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5 J	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	ND	ND	-	-	ND	ND	ND	ND	-
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	0.31 J	ND	ND	ND	0.16 J	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 J
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.66 J	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	-	ND	ND	-	-	-	-	ND	ND	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9 J	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	-	-	ND	ND	ND	ND	ND	-	-	ND	ND	ND	0.9 J	-

Notes:
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Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-MW08I 9/29/11	FT-MW08I 9/18/12	FT-MW08S 1/8/08	FT-MW08S 9/1/09	FT-MW08S 9/14/10	FT-MW08S 3/14/11	FT-MW08S 9/29/11	FT-MW08S 9/18/12	FT-PZ451S 9/20/12	FT-PZ452S 9/17/12	FT-PZ453 2/21/12	FT-PZ454S 9/20/12	FT-PZ455I 2/21/12	FT-PZ455S 9/13/12	FT-PZ456I 2/21/12
Screened Interval (feet bgs)				**23 - 33**	**23 - 33**	**3 - 14**	**3 - 14**	**3 - 14**	**3 - 14**	**3 - 14**	**3 - 14**	**5 - 15**	**6 - 16**	**3 - 13**	**3 - 13**	**68 - 73**	**25 - 35**	**47 - 52**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	1.2	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	0.4 J	ND	ND	-	-	ND	ND	ND	-	ND	-	ND	-
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.83 J	0.38 J	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	ND	ND	-	-	-	-	-	-	-	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	0.38 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	-	ND	ND	ND	ND	-	-	ND	ND	ND	-	ND	-	ND	-

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Table 4-1
Site 2 - Fire Training Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FT-PZ456S 9/12/12	FT-PZ457S 2/21/12	FT-PZ458I 2/22/12	FT-PZ458I 9/12/12	FT-PZ458S 2/22/12	FT-PZ459I 2/22/12	FT-PZ459I 2/22/12 (DUP)	FT-PZ459S 2/22/12	FT-PZ460I 2/23/12	FT-PZ460I 9/18/12	FT-PZ461I 2/23/12	FT-PZ461I 9/18/12	FT-PZ462I 2/23/12	FT-PZ462S 9/13/12	FT-PZ462S 9/13/12 (DUP)
Screened Interval (feet bgs)				**3 - 13**	**4 - 14**	**40 - 45**	**40 - 45**	**3 - 13**	**41 - 46**	**41 - 46**	**7 - 17**	**45 - 50**	**45 - 50**	**54 - 59**	**54 - 59**	**44 - 49**	**3 - 13**	**3 - 13**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	0.8 J	ND	ND	ND	ND	ND	**14**	**19**	3.9	3.5	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	0.77 J	0.68 J	ND	0.67 J	0.61 J	ND	**21**	**42**	2.8	2.9	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	2.0	-	-	-	-	-	**7.7**	-	3.8	-	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	108-90-7	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	1.3	ND	ND
CHLOROMETHANE	74-87-3		5	ND	0.56 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.61 J	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	4.1	2.0	ND	ND	ND	ND	**7.8**	**7.7**	4.2	3.8	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	0.68 J	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	0.89 J	0.66 J	ND	ND	ND	ND	**7.7**	**9.4**	0.88 J	0.94 J	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	0.65 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	**24**	**16**	ND	ND	ND	ND	**440**	**380**	**69**	**59**	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	2	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	0.54 J	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	-	-	ND	-	-	-	-	-	ND	-	ND	-	ND	ND

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[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FC-MW02I 1/16/08	FC-MW02I 7/29/08	FC-MW02IR1 9/15/10	FC-MW02IR1 3/14/11	FC-MW02IR1 9/28/11	FC-MW02IR1 9/10/12	FC-MW02S 1/16/08	FC-MW02S 1/16/08 (DUP)	FC-MW02S 7/29/08	FC-MW02SR1 9/15/10	FC-MW02SR1 9/15/10 (DUP)	FC-MW02SR1 3/14/11	FC-MW02SR1 9/28/11	FC-MW02SR1 2/20/12	FC-MW02SR1 9/10/12
Screened Interval (feet bgs)				**42 - 52**	**42 - 52**	**42 - 52**	**42 - 52**	**42 - 52**	**42 - 52**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	2 J	2 J	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	79-00-5	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.66 J
1,1-DICHLOROETHANE	75-34-3		5	0.7 J	ND	ND	ND	ND	ND	**6**	**6**	3	**11**	**11**	**16**	**14**	**8.4**	0.94 J
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	0.7 J	0.6 J	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5 J	1.4 J	1.5	3.8	3	**10 J**
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	ND	ND	ND	ND	ND	ND	-	-	-	1.4 J
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	1 J	18 J	33 J	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	2 J	ND	ND	ND	ND	16	13	32	ND	R	ND	17	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		5	ND	ND	ND	ND	ND	ND	4 J	4 J	3	ND	ND	**7.3**	4.4	4.6	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.85 J	1.6	1.4 J
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.97 J	2.1	1.2	4.3 J
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	0.4 J	0.5 J	ND	**6.3**	4.6 J	**6.8**	**6**	**11**	**14 J**
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.7 J	4 J	**5.6**	4.1	**7.6**	**10 J**
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	4 J	**5 J**	ND	**21 J**	**13 J**	**17**	**25**	**29**	**52 J**
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	1 J	1 J	0.4 J	ND	1.7 J	1.9	ND	3.5	5.2 J
METHYLENE CHLORIDE	75-09-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16 J**	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	-	-	-	-	-	-	18	17	-	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	**5**	**5**	0.4 J	**17 J**	**12 J**	**11**	**11**	**9**	0.90 J
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	0.55 J
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	3 J	3 J	0.5 J	ND	1.2 J	0.98 J	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 J	0.82 J	0.57 J
XYLENES, TOTAL	1330-20-7	10000	5	ND	ND	ND	-	-	ND	**9 J**	**10 J**	0.4 J	**39 J**	**25 J**	-	-	-	**53 J**

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = Rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
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Table 4-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FC-MW03S 1/15/08	FC-MW03S 7/28/08	FC-MW03SR1 9/15/10	FC-MW03SR1 3/13/11	FC-MW03SR1 9/26/11	FC-MW03SR1 9/11/12	FC-MW04I 1/15/08	FC-MW04I 7/28/08	FC-MW04I 9/10/09	FC-MW04I 9/10/09 (DUP)	FC-MW04I 9/15/10	FC-MW04I 3/13/11	FC-MW04I 9/28/11	FC-MW04S 1/15/08	FC-MW04S 7/28/08
Screened Interval (feet bgs)				**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**3 - 13**	**3 - 13**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	79-00-5	5	5	ND	ND	ND	ND	ND	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	1.3 J	1.1	**9.3 J**	3.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	3.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	1.8 J	2.9	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	0.73 J	ND	ND	ND	ND	ND	-	-	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	3 J	R	ND	ND	6.3	ND	ND	ND	ND	ND	R	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	0.77 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		5	ND	ND	ND	ND	**5 J**	4.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	0.57 J	ND	ND	ND	ND	ND	ND	ND	ND	0.63 J	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	0.73 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	3.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	**23**	**46**	**23 J**	**38 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	**13**	**21**	**10 J**	**17 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	**15**	**19**	ND	0.61 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	2.1 J	7.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	-	-	-	-	-	ND	ND	ND	-	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	0.55 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	ND	**15**	-	-	0.61 J	ND	ND	ND	ND	ND	-	-	ND	ND

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Table 4-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FC-MW04S 9/10/09	FC-MW04S 9/15/10	FC-MW04S 3/13/11	FC-MW04S 9/28/11	FC-MW05I 1/15/08	FC-MW05I 7/29/08	FC-MW05I 9/9/09	FC-MW05I 9/15/10	FC-MW05I 3/13/11	FC-MW05I 6/2/11	FC-MW05I 9/26/11	FC-MW05I 9/10/12	FC-MW05S 1/15/08	FC-MW05S 7/29/08	FC-MW05S 9/9/09
Screened Interval (feet bgs)				**3 - 13**	**3 - 13**	**3 - 13**	**3 - 13**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**48 - 58**	**6 - 16**	**6 - 16**	**6 - 16**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	1 J	ND	ND	ND	0.61 J	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	79-00-5	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	ND	ND	ND	0.8 J	ND	ND	0.5 J	ND	0.55 J	ND	ND	ND	4	ND
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	0.71 J	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	-	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	R	ND	ND	3 J	ND	ND	R	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	0.8 J	ND	ND	ND	ND	ND	0.43 J	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	ND	-	-	-	-	ND	ND	-	-	-	-	-	-	ND
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	ND	-	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND

Notes:
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Table 4-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FC-MW05S 9/9/09 (DUP)	FC-MW05S 9/15/10	FC-MW05S 3/13/11	FC-MW05S 6/3/11	FC-MW05S 9/26/11	FC-MW05S 9/10/12	FC-MW06S 1/15/08	FC-MW06S 7/29/08	FC-MW06S 9/9/09	FC-MW06S 9/15/10	FC-MW06S 3/13/11	FC-MW06S 9/28/11	FC-PZ05I1 12/16/10	FC-PZ05I1 3/13/11	FC-PZ05I1 3/13/11 (DUP)
Screened Interval (feet bgs)				**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**9 - 19**	**9 - 19**	**9 - 19**	**9 - 19**	**9 - 19**	**9 - 19**	**20 - 30**	**20 - 30**	**20 - 30**
Volatile Organic Compounds (µg/L)																		
1,1,1-TRICHLOROETHANE	71-55-6	200	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**130**	**47**	**51**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	79-00-5	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	ND	0.89 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**470**	**73**	**86**
1,1-DICHLOROETHENE	75-35-4	7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**	4.1 J	**7.7 J**
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2
1,2-DICHLOROBENZENE	95-50-1	600	5	ND	0.98 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 J
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	-	-	-	ND	ND	ND	ND	ND	-	-	ND	-	-
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	5.2 J	ND	R	ND	ND	ND	ND	3 J	5.4 J	R	ND	ND	R	R	ND
BENZENE	71-43-2	5	5	ND	0.84 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3 J	**9**	**11**
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**140**	**29**	**31**
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.52 J
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	ND	**6.8 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**52**	**63**	**73**
ISOPROPYLBENZENE	98-82-8		5	ND	**8.2 J**	ND	2.9	ND	ND	ND	ND	ND	ND	ND	ND	**21**	**30**	**36**
M- AND P-XYLENE	108-38-3/106-42-3		5	ND	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.1 J**	2.9	2.6
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9 J	ND	ND
METHYLENE CHLORIDE	75-09-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7 J	ND	ND
NAPHTHALENE	91-20-3		50	ND	37 J	-	-	-	-	-	-	ND	ND	-	-	**110**	-	-
O-XYLENE	95-47-6		5	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	0.48 J	**12**	0.9 J	ND	2.5 J	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	ND	2.4 J	-	-	-	ND	ND	ND	ND	ND	-	-	**7.1 J**	-	-

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Table 4-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	FC-PZ05I1 6/2/11	FC-PZ05I1 9/26/11	FC-PZ05I1 9/26/11 (DUP)	FC-PZ05I1 2/20/12	FC-PZ05I1 2/20/12 (DUP)	FC-PZ05I1 9/10/12
Screened Interval (feet bgs)				**20 - 30**	**20 - 30**	**20 - 30**	**20 - 30**	**20 - 30**	**20 - 30**
Volatile Organic Compounds (µg/L)									
1,1,1-TRICHLOROETHANE	71-55-6	200	5	**530**	**320 J**	**360 J**	**7.1**	**8**	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	79-00-5	5	5	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		5	**1000**	**790 J**	**830 J**	**16**	**18**	3.4
1,1-DICHLOROETHENE	75-35-4	7	5	**75**	**42 J**	**60 J**	1	1.3	ND
1,2,4-TRICHLOROBENZENE	120-82-1		5	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	5	2	4.5	3.5 J	1.4	1.2	0.99 J
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	-	-	-	-	ND
1,4-DICHLOROBENZENE	106-46-7	75	5	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	**18**	2.3	2.6 J	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		5	**220**	**230 J**	**250 J**	3	3.5	ND
CHLOROMETHANE	74-87-3		5	2.2	0.77 J	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	2.3	1	ND	ND	ND	ND
ETHYLBENZENE	100-41-4	700	5	**78**	**30**	**26 J**	**8.5**	**8.2**	0.55 J
ISOPROPYLBENZENE	98-82-8		5	**38**	**11**	**9.2 J**	3.3	3.4	**6.4**
M- AND P-XYLENE	108-38-3/106-42-3		5	**21**	**8.2 J**	4 J	ND	ND	ND
METHYL CYCLOHEXANE	108-87-2		50	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	5	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	-	-
O-XYLENE	95-47-6		5	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	0.7 J	0.56 J	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	0.92 J	0.68 J	ND	ND	ND	ND
XYLENES, TOTAL	1330-20-7	10000	5	-	-	-	-	-	ND

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Bold = Indicates exceedance of an MCL
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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW126D 2/5/08	SA-MW126D 7/30/08	SA-MW126D 9/3/09	SA-MW126D 9/16/10	SA-MW126D 3/10/11	SA-MW126D 9/21/11	SA-MW126D 9/19/12	SA-MW126I 2/5/08	SA-MW126I 7/30/08	SA-MW126I 9/3/09	SA-MW126I 9/16/10	SA-MW126I 3/10/11	SA-MW126I 9/21/11	SA-MW126I 9/19/12
Screened Interval (feet bgs)				**74 - 84**	**74 - 84**	**74 - 84**	**74 - 84**	**74 - 84**	**74 - 84**	**74 - 84**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**	**40 - 50**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	ND	ND	-	-	-	-	-	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND	-	-	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15**	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	-	-	-	ND	ND	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.58 J	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW126S 1/31/08	SA-MW126S 7/29/08	SA-MW126S 9/3/09	SA-MW126S 9/16/10	SA-MW126S 3/10/11	SA-MW126S 9/20/11	SA-MW126S 9/19/12	SA-MW127D 1/31/08	SA-MW127D 7/30/08	SA-MW127D 9/3/09	SA-MW127D 9/16/10	SA-MW127D 3/10/11	SA-MW127D 9/22/11	SA-MW127I 1/31/08
Screened Interval (feet bgs)				**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**68 - 78**	**36 - 46**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**94**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	1 J	ND	ND	ND	ND	1.7	ND	0.6 J	ND	ND	ND	ND	ND	**410**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30**
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	ND	ND	-	-	-	-	-	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 J
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7 J
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6 J
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND	-	-	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7 J
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3 J
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	3 J	ND	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9 J
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**51**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	**14**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	-	-	-	ND	ND	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	0.5 J	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW127I 7/30/08	SA-MW127I 9/3/09	SA-MW127I 11/19/09	SA-MW127I 9/16/10	SA-MW127I 9/16/10 (DUP)	SA-MW127I 3/10/11	SA-MW127I 9/22/11	SA-MW127I 9/13/12	SA-MW127S 1/31/08	SA-MW127S 1/31/08 (DUP)	SA-MW127S 7/30/08	SA-MW127S 9/3/09	SA-MW127S 9/16/10	SA-MW127S 3/10/11
Screened Interval (feet bgs)				**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**	**5 - 15**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	**94**	**61**	**41**	1.2 J	1.1 J	**8.1**	4.1	1.2	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**470**	**270 J**	**200**	**9.1 J**	**9.3 J**	**93**	**71**	**13**	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	**27**	**20**	**9**	ND	ND	**5.6**	3.8	0.99 J	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	-	ND	ND	-	-	-	-	-	-	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	4	2.7 J	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	0.3 J	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND	ND	-
1,3-DICHLOROBENZENE	541-73-1		**5**	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	**13**	3.8 J	2.4 J	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	**63**	**29**	**23**	ND	ND	**26**	**8.5**	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	1.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	ND	ND	ND	-	-	-	-	-	-	ND	ND	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	0.69 J	ND	ND	ND	2 J	2 J	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	ND	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	**1920**	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW127S 9/22/11	SA-MW128D 1/31/08	SA-MW128D 7/30/08	SA-MW128D 9/3/09	SA-MW128D 9/3/09	SA-MW128D 11/19/09	SA-MW128D 9/16/10	SA-MW128D 3/10/11	SA-MW128D 9/22/11	SA-MW128D 9/22/11 (DUP)	SA-MW128D 9/13/12	SA-MW128I 1/30/08	SA-MW128I 7/30/08	SA-MW128I 9/4/09
Screened Interval (feet bgs)				**5 - 15**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**58 -68**	**30 - 40**	**30 - 40**	**30 - 40**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**48**	**35**	2.4 J
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	**5**	**7**	3.1 J	2.9 J	2.5 J	1.6 J	2.1	2.6	2.7	2.0	**160**	**170**	**33**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	**18**	**12**	2.5 J
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	-	-	-	-	-	-	ND	ND	ND	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	1	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	ND	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9 J	0.7 J	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	**6**	ND
CHLOROFORM	67-66-3	80	5	ND	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	ND	ND	ND	ND	-	-	-	-	-	-	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	**3780**	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	181	-	-	-	-	-	-	-	-

Notes:
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R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
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[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW128I 9/17/10	SA-MW128I 3/10/11	SA-MW128I 9/22/11	SA-MW128I 9/13/12	SA-MW128S 1/31/08	SA-MW128S 7/30/08	SA-MW128S 9/3/09	SA-MW128S 9/16/10	SA-MW128S 3/10/11	SA-MW128S 9/22/11	SA-MW129D 1/17/08	SA-MW129D 1/30/08	SA-MW129D 7/30/08	SA-MW129D 9/8/09
Screened Interval (feet bgs)				**30 - 40**	**30 - 40**	**30 - 40**	**30 - 40**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**80 - 90**	**80 - 90**	**80 - 90**	**80 - 90**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	1.1 J	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**10 J**	**5.1**	**5**	2.1	ND	ND	ND	ND	ND	ND	2 J	0.9 J	3	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	0.68 J	0.44 J	ND	ND	ND	ND	ND	ND	ND	0.5 J	0.4 J	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	-	-	-	ND	ND	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	ND	ND	-	-	ND	ND	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8 J	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	1.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	-	ND	ND	-	-	-	-	-	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	0.65 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW129D 9/16/10	SA-MW129D 3/10/11	SA-MW129D 9/22/11	SA-MW129D 9/12/12	SA-MW129I 7/30/08	SA-MW129I 9/4/09	SA-MW129I 9/17/10	SA-MW129I 3/10/11	SA-MW129I 9/22/11	SA-MW129I 9/13/12	SA-MW129S 1/17/08	SA-MW129S 7/30/08	SA-MW129S 7/30/08 (DUP)	SA-MW129S 9/3/09
Screened Interval (feet bgs)				**80 - 90**	**80 - 90**	**80 - 90**	**80 - 90**	**50 - 60**	**50 - 60**	**50 - 60**	**50 - 60**	**50 - 60**	**50 - 60**	**19.5 - 29.5**	**19.5 - 29.5**	**19.5 - 29.5**	**19.5 - 29.5**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	2.7	3	ND	4	2.3 J	1.4 J	**7**	2.2	ND	ND	ND	ND	1.4 J
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	0.67 J	0.56 J	ND	ND	ND	0.64 J	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	-	-	ND	ND	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	6.9 J	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	5.8 J	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	ND	ND	-	-	-	-	-	-	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	0.61 J	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW129S 9/17/10	SA-MW129S 3/10/11	SA-MW129S 9/22/11	SA-MW129S 9/13/12	SA-MW130I 9/15/09	SA-MW130I 9/16/10	SA-MW130I 3/11/11	SA-MW130I 9/23/11	SA-MW130S 9/15/09	SA-MW130S 9/16/10	SA-MW130S 3/11/11	SA-MW130S 9/23/11	SA-MW131D 9/14/09	SA-MW131D 11/18/09
Screened Interval (feet bgs)				**19.5 - 29.5**	**19.5 - 29.5**	**19.5 - 29.5**	**19.5 - 29.5**	**36 - 46**	**36 - 46**	**36 - 46**	**36 - 46**	**9-19**	**9-19**	**9-19**	**9-19**	**60 - 70**	**60 - 70**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	0.62 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15**	**12**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5 J	1.2 J
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	-	ND	ND	-	-	ND	ND	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	-	-	ND	ND	-	-	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	0.56 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	3.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	ND	ND	-	-	ND	ND	-	-	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	0.69 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	**17400**
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	229

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
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ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW131D 9/21/10	SA-MW131D 3/9/11	SA-MW131D 9/27/11	SA-MW131D 9/18/12	SA-MW131D 9/18/12 (DUP)	SA-MW131I 9/14/09	SA-MW131I 9/21/10	SA-MW131I 3/9/11	SA-MW131I 9/27/11	SA-MW131I 9/18/12	SA-MW131S 9/14/09	SA-MW131S 9/21/10	SA-MW131S 3/9/11	SA-MW131S 9/27/11
Screened Interval (feet bgs)				**60 - 70**	**60 - 70**	**60 - 70**	**60 - 70**	**60 - 70**	**30 - 40**	**30 - 40**	**30 - 40**	**30 - 40**	**30 - 40**	**4 - 14**	**4 - 14**	**4 - 14**	**4 - 14**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	**18 J**	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**13 J**	**18 J**	**20**	**28**	**29**	ND	**130 J**	**16**	ND	0.88 J	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	2.3 J	2 J	2.3	3.1	3.1	ND	**13 J**	1.5	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	-	-	ND	ND	-	-	-	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	0.38 J	0.42 J	ND	ND	-	-	ND	ND	ND	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	3.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.2 J	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	0.37 J	0.37 J	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	0.38 J	0.42 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	ND	ND	-	-	-	ND	ND	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	0.35 J	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-MW132I 9/14/09	SA-MW132I 9/14/09 (DUP)	SA-MW132I 9/21/10	SA-MW132I 3/9/11	SA-MW132I 9/27/11	SA-MW132I 9/18/12	SA-MW132S 9/14/09	SA-MW132S 9/21/10	SA-MW132S 3/9/11	SA-MW132S 9/27/11	SA-MW132S 9/18/12	SA-PZ118I 1/16/08	SA-PZ118I 7/31/08	SA-PZ118I 9/2/09
Screened Interval (feet bgs)				**27 - 37**	**27 - 37**	**27 - 37**	**27 - 37**	**27 - 37**	**27 - 37**	**4 - 14**	**4 - 14**	**4 - 14**	**4 - 14**	**4 - 14**	**50 - 60**	**50 - 60**	**50 - 60**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	**31**	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**5.4**	**5.1**	3.4 J	4.6	**6.9**	**150**	ND	1.1 J	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	1.1 J	ND	0.94 J	1.5	**16**	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	ND	ND	-	-	-	ND	ND	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	0.52 J	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	ND	ND	ND	-	-	ND	ND	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	0.80 J	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	0.50 J	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	**12 J**	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	2.9 J	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59 J	ND	ND	3	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	ND	ND	-	-	-	ND	ND	-	-	-	-	-	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	0.45 J	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ118I 9/20/10	SA-PZ118I 3/11/11	SA-PZ118I 9/20/11	SA-PZ118I 9/11/12	SA-PZ118S 1/16/08	SA-PZ118S 7/31/08	SA-PZ118S 9/2/09	SA-PZ118S 9/2/09 (DUP)	SA-PZ118S 11/19/09	SA-PZ118S 9/20/10	SA-PZ118S 3/11/11	SA-PZ118S 3/11/11 (DUP)	SA-PZ118S 9/20/11	SA-PZ118S 9/11/12
Screened Interval (feet bgs)				**50 - 60**	**50 - 60**	**50 - 60**	**50 - 60**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**	**6 - 16**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	ND	ND	4 J	**17**	2.5 J	2.1 J	**5.5**	ND	**6.1**	**5.8**	3.5	**21**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	1 J	4	ND	ND	0.98 J	ND	1.1	1.1	0.91 J	4.5
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	-	-	-	-	-	ND	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.21 J
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.9 J
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21 J
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	-	ND	ND	ND	ND	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	**3510**	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	122	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ120S 1/17/08	SA-PZ120S 7/31/08	SA-PZ120S 9/9/09	SA-PZ120S 9/20/10	SA-PZ120S 3/9/11	SA-PZ120S 9/20/11	SA-PZ122D 1/17/08	SA-PZ122D 7/31/08	SA-PZ122D 9/3/09	SA-PZ122D 9/20/10	SA-PZ122D 3/12/11	SA-PZ122D 9/20/11	SA-PZ122D 9/20/11 (DUP)	SA-PZ122D 9/12/12
Screened Interval (feet bgs)				**8 - 18**	**8 - 18**	**8 - 18**	**8 - 18**	**8 - 18**	**8 - 18**	**122 - 132**	**122 - 132**	**122 - 132**	**122 - 132**	**122 - 132**	**122 - 132**	**122 - 132**	**122 - 132**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	ND	ND	ND	ND	2 J	2	1.8 J	1.3 J	1.4	1.8 J	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	ND	ND	-	-	-	-	ND	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	-	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	0.93 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	-	-	ND	ND	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	0.49 J	ND	ND	ND	ND	ND	0.39 J	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
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CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ122I 7/31/08	SA-PZ122I 9/2/09	SA-PZ122I 9/20/10	SA-PZ122I 3/12/11	SA-PZ122I 9/23/11	SA-PZ122I 9/12/12	SA-PZ122S 7/31/08	SA-PZ122S 9/2/09	SA-PZ122S 9/20/10	SA-PZ122S 3/12/11	SA-PZ122S 9/20/11	SA-PZ123I 9/2/09	SA-PZ123I 9/20/10	SA-PZ123I 3/12/11
Screened Interval (feet bgs)				**39 - 49**	**39 - 49**	**39 - 49**	**39 - 49**	**39 - 49**	**39 - 49**	**12 - 22**	**12 - 22**	**12 - 22**	**12 - 22**	**12 - 22**	**70 - 80**	**70 - 80**	**70 - 80**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59 J	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	**9.7 J**	ND	ND	ND	ND	ND	ND	ND	ND	**54**	**42 J**	**37**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	1.2 J	ND	ND	ND	ND	ND	ND	ND	ND	**6.9**	**6.9 J**	4.9
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	ND	ND	-	-	-	-	ND	ND	-	-	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.66 J	0.7 J
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	ND	ND	ND	ND	-	-	ND	ND	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	R	ND	ND	ND	ND	ND	R	ND	ND	ND	R
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.51 J
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	ND	-	-	-	-	ND	ND	-	-	ND	ND	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	0.51 J	ND	ND	ND	ND	ND	0.68 J	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ123I 9/20/11	SA-PZ123I 9/11/12	SA-PZ123I1 1/16/08	SA-PZ123I1 1/17/08	SA-PZ123I1 7/31/08	SA-PZ123I1 7/31/08	SA-PZ123I1 7/31/08 (DUP)	SA-PZ123I1 9/2/09	SA-PZ123I1 11/19/09	SA-PZ123I1 9/20/10	SA-PZ123I1 9/20/10 (DUP)	SA-PZ123I1 3/11/11	SA-PZ123I1 9/20/11	SA-PZ123I1 9/11/12
Screened Interval (feet bgs)				**70 - 80**	**70 - 80**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**	**32 - 42**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	1.1	1 J	4 J	1	2	2	ND	ND	ND	ND	ND	**9.3**	**22**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**37**	**44**	**55**	**23**	**63**	**13**	**13**	**6.3**	**11**	ND	ND	**11**	**85**	**150**
1,1-DICHLOROETHENE	75-35-4	7	**5**	4.7	**5.3**	**7**	3 J	**10**	2	2	ND	ND	ND	ND	ND	**7.8**	**14**
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	-	-	-	-	-	-	-	-	-	-	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	0.64 J	0.48 J	0.7 J	1 J	ND	1	1 J	ND	ND	ND	ND	ND	0.92 J	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26 J
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	0.6 J	0.5 J	0.6 J	0.5 J	0.5 J	ND	ND	ND	ND	ND	0.54 J	0.54 J
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.4 J
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	0.83 J	0.86 J	0.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1.1 J
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	3	3	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	-	-	-	ND	ND	ND	ND	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	**3**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	**629**	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	**476**	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ123S 1/16/08	SA-PZ123S 7/31/08	SA-PZ123S 9/2/09	SA-PZ123S 9/20/10	SA-PZ123S 3/11/11	SA-PZ123S 9/20/11	SA-PZ123S 9/11/12	SA-PZ124 8/5/08	SA-PZ124 9/17/09	SA-PZ124 7/21/10	SA-PZ124 9/22/10	SA-PZ124 3/15/11	SA-PZ124 3/15/11 (DUP)	SA-PZ124 9/28/11
Screened Interval (feet bgs)				**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**7 - 17**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	3.8 J	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	0.5 J	0.7 J	ND	ND	ND	2.6	1.0	4	**17**	**15**	**22**	**54**	**58 J**	**79**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	ND	ND	ND	1.7 J	2.1 J	**5.2**	4.7	4.8 J	**6.5**
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	ND	ND	-	-	-	-	-	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	-	-	ND	ND	ND	ND	ND	-	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	ND	R	R	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3	2.2 J	2.7 J
CHLOROFORM	67-66-3	80	5	ND	ND	ND	1.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	-	-	ND	ND	ND	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ124 9/28/11 (DUP)	SA-PZ124 5/17/12	SA-PZ124 9/21/12	SA-PZ124 9/21/12 (DUP)	SA-PZ125 8/5/08	SA-PZ125 9/17/09	SA-PZ125 7/21/10	SA-PZ125 7/21/10 (DUP)	SA-PZ125 9/22/10	SA-PZ125 3/15/11	SA-PZ125 9/28/11	SA-PZ125 5/17/12	SA-PZ125 5/17/12 (DUP)	SA-PZ125 9/21/12
Screened Interval (feet bgs)				**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	2.6 J	3.6	**7.8**	**7.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**67 J**	**74**	**130**	**130**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	**5 J**	**6.4**	**13**	**13**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	R	ND	-	-	-	-	-	-	-	ND	ND	ND	ND	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	R	ND	0.48 J	0.65 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	R	ND	0.39 J	0.39 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	-	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	R	ND	0.94 J	0.94 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	R	ND	ND	ND	3 J	ND	ND	ND	ND	R	ND	ND	ND	ND
BENZENE	71-43-2	5	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	R	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	2.2 J	1.6	2.2	2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	-	ND	ND	ND	ND	-	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	0.57 J	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	0.94 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-		-	-	-	-	-	-	-	-	-			-
IRON	7439-89-6		**300**	-		-	-	-	-	-	-	-	-	-			-
MANGANESE	7439-96-5		**300**	-		-	-	-	-	-	-	-	-	-			-

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ133I 3/31/10	SA-PZ133I 7/8/10	SA-PZ133I 10/12/10	SA-PZ133I 12/15/10	SA-PZ133I 12/15/10 (DUP)	SA-PZ133I 3/8/11	SA-PZ133I 6/9/11	SA-PZ133I 6/21/11	SA-PZ133I 9/19/11	SA-PZ134 3/31/10	SA-PZ134 9/20/12	SA-PZ135 3/31/10	SA-PZ135 12/14/10	SA-PZ135 3/8/11
Screened Interval (feet bgs)				**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**42 - 47**	**39 - 44**	**39 - 44**	**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	-	**24**	**14**	**18**	**17**	**11**	**9.5**	**10 J**	4.2	**5.3**	0.22 J	-	**12**	**7.3**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**460**	**130**	**98**	**130**	**130**	**63**	**76**	**90 J**	**31**	**31**	3.7	**260**	**54**	**34**
1,1-DICHLOROETHENE	75-35-4	7	**5**	-	**7.8**	4.9 J	**6.9**	**6.7**	3.9	4.3	4.2 J	2	2.6 J	ND	-	3.3 J	2.6
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	-	-	ND	ND	ND	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	-	0.98 J	ND	ND	ND	0.84 J	ND	ND	0.89 J	1.5 J	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	0.91 J	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND	0.91 J	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	ND	-	-	-	-	ND	ND	ND	ND	-
1,3-DICHLOROBENZENE	541-73-1		**5**	0.65 J	0.7 J	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	-	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J	ND	0.38 J	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	R	R	R	ND	ND	ND	ND	ND	ND	ND	R	ND
BENZENE	71-43-2	5	5	-	ND	ND	0.35 J	ND	ND	ND	ND	ND	ND	ND	0.35 J	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	-	**9.6**	**17**	**33**	**34**	**5.2**	**6.7**	**7.4 J**	1.9	ND	ND	-	**5.4**	1.2
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	ND	ND	ND	ND	-	-	-	-	1.5 J	-	ND	ND	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	45.1 J	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	**870**	-	-	-	-	-	-

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ135 6/7/11	SA-PZ135 6/21/11	SA-PZ135 9/13/12	SA-PZ135I 8/3/11	SA-PZ135I 8/3/11	SA-PZ135I 8/4/11	SA-PZ135I 9/19/11	SA-PZ136 3/31/10	SA-PZ136 12/14/10	SA-PZ136 3/8/11	SA-PZ136 6/7/11	SA-PZ136 6/21/11	SA-PZ136 8/3/11	SA-PZ136 8/3/11
Screened Interval (feet bgs)				**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**	**41.5 - 46.5**	**44 - 49**	**44 - 49**	**44 - 49**	**44 - 49**	**44 - 49**	**44 - 49**	**44 - 49**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	**5.6**	4.6	1.4	4.8 J	**6.3**	4	**14**	ND	ND	ND	ND	ND	**21**	**21 J**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	0.69 J	ND	ND	0.86 J	0.67 J	0.74 J	ND	ND	ND	ND	0.65 J	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**35**	**27**	**6.9**	**26 J**	**31**	**29**	**53**	1.5 J	1.5 J	1.8	ND	1.5	**140**	**150 J**
1,1-DICHLOROETHENE	75-35-4	7	**5**	2.8	1.9	0.68 J	1.9 J	2	1.8	3.5	ND	ND	ND	ND	ND	**10**	**10 J**
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	ND	-	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	-	ND	-	-	-	-	ND	ND	-	-	-	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	4.4 J	ND	ND	ND	ND	ND	ND	ND	R	ND	R	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	1.8	2.1	ND	ND	ND	1.3	2.8	ND	ND	ND	ND	ND	**14 J**	**14 J**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	-	-	-	-	ND	ND	-	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	26.7 J	-	-	-	-	-	-	-	-	-	**877**	-	-
MANGANESE	7439-96-5		**300**	-	**927**	-	-	-	-	-	-	-	-	-	**1600**	-	-

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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ136 8/4/11	SA-PZ137 3/31/10	SA-PZ137 6/8/11	SA-PZ138I1 7/6/10	SA-PZ138I1 10/12/10	SA-PZ138I1 12/15/10	SA-PZ138I1 3/8/11	SA-PZ138I1 6/21/11	SA-PZ138I1 6/21/11 (DUP)	SA-PZ138I1 2/21/12	SA-PZ138I1 9/20/12	SA-PZ139 4/1/10	SA-PZ139 7/8/10	SA-PZ139 10/12/10
Screened Interval (feet bgs)				**44 - 49**	**49 - 54**	**49 - 54**	**37 - 42**	**37 - 42**	**37 - 42**	**37 - 42**	**37 - 42**	**37 - 42**	**37 - 42**	**37 - 42**	**42.5 - 47.5**	**42.5 - 47.5**	**42.5 - 47.5**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	**23**	ND	ND	**220**	**170 J**	**260**	**340**	**320**	**300**	**150**	**43 J**	**35**	2.3 J	0.92 J
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**130**	ND	1.2	**980**	**970**	**1100**	**1200**	**1500**	**1500**	**690**	**260**	**160 J**	**17**	**7.6**
1,1-DICHLOROETHENE	75-35-4	7	**5**	**8.6**	ND	ND	**65**	**60 J**	**63**	**86**	**100**	**85**	**47**	**14 J**	**11**	0.94 J	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	-	ND	-	-	-	-	ND	ND	0.8 J	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	**5.7 J**	**14 J**	ND	**9.9**	ND	ND	2.9	0.49 J	0.84 J	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	**6.4 J**	**6.3 J**	ND	3.7	ND	ND	2.4	0.64 J	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	0.91 J	ND	1	ND	ND	0.54 J	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	-	ND	1 J	ND	-	-	-	-	ND	ND	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	3.1 J	4 J	ND	1.6	ND	ND	1.4	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	**13 J**	**16 J**	ND	**7.2**	ND	ND	**5.8**	0.89 J	0.41 J	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	R	R	ND	ND	ND	ND	ND	ND	ND	R
BENZENE	71-43-2	5	5	ND	ND	ND	3.4 J	4.4 J	ND	2.6	ND	ND	1.3	ND	0.35 J	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	**12**	ND	ND	**210**	**230**	**320**	**240**	**250**	**280**	**150**	**54 J**	**22 J**	1.8 J	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	0.84 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	1 J	ND	ND	ND	ND	0.44 J	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	**6.5 J**	**11 J**	**8.3 J**	**8.2**	ND	ND	2	0.61 J	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	-	ND	ND	ND	-	-	-	-	-	ND	ND	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	0.88 J	ND	0.97 J	ND	ND	0.49 J	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	ND	ND	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	**5220**	**5260**	-	-	-	-	-

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ139 12/15/10	SA-PZ139 3/8/11	SA-PZ139 6/10/11	SA-PZ139 6/20/11	SA-PZ139 9/20/12	SA-PZ140 6/30/10	SA-PZ140 9/21/10	SA-PZ140 9/21/10 (DUP)	SA-PZ140 3/12/11	SA-PZ140 9/21/11	SA-PZ140 9/11/12	SA-PZ142 6/29/10	SA-PZ142 3/12/11	SA-PZ142 3/12/11 (DUP)
Screened Interval (feet bgs)				**42.5 - 47.5**	**42.5 - 47.5**	**42.5 - 47.5**	**42.5 - 47.5**	**42.5 - 47.5**	**44.5 - 49.5**	**44.5 - 49.5**	**44.5 - 49.5**	**44.5 - 49.5**	**44.5 - 49.5**	**44.5 - 49.5**	**40.5 - 45.5**	**40.5 - 45.5**	**40.5 - 45.5**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	1.3 J	ND	ND	ND	0.86 J	**17**	**9**	**10 J**	4.8	**8.4**	2.4	**60**	**40 J**	**35**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**9.2**	**6.5**	**5.9 J**	4.6	**11**	**140**	**93**	**100 J**	**41**	**69**	**33**	**410**	**200**	**210**
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	0.43 J	**8.5**	**6.7**	**7.8 J**	3.1	**5.1**	2.5	**21**	**17 J**	**15**
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	ND	ND	-	-	-	-	ND	ND	-	-	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	ND	1.9 J	1.4 J	1	0.83 J	0.78 J	ND	1.7 J	1.5
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	0.64 J	0.47 J	ND	ND	ND	ND	0.88 J	0.79 J
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	1.2 J	0.62 J	0.5 J	ND	ND	ND	ND	0.63 J	0.62 J
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	4.1 J	2.2 J	2.1 J	1.3	0.89 J	0.57 J	1.5 J	3 J	2.8
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	2.1 J	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	R	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	R	R
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	**19**	**14**	**15 J**	**5.7**	**6.8**	1.7 J	**36**	**28 J**	**27**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	-	-	-	-	ND	ND	ND	-	-	-	ND	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	1.7 J	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	40.7 J	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	172	-	-	-	-	-	-	-	-	-	-

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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ142 9/21/11	SA-PZ142 9/11/12	SA-PZ143 6/29/10	SA-PZ143 9/20/10	SA-PZ143 3/12/11	SA-PZ143 9/11/12	SA-PZ144I 6/29/10	SA-PZ144I 3/11/11	SA-PZ144I 3/11/11 (DUP)	SA-PZ144I 9/22/11	SA-PZ144I 9/12/12	SA-PZ144S 6/29/10	SA-PZ144S 3/11/11	SA-PZ144S 9/22/11
Screened Interval (feet bgs)				**40.5 - 45.5**	**40.5 - 45.5**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**45 - 50**	**45 - 50**	**45 - 50**	**45 - 50**	**45 - 50**	**5 - 15**	**5 - 15**	**5 - 15**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	**17**	**66 J**	**110**	**110 J**	**62**	**66**	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**100**	**290**	**590**	**600 J**	**390**	**430**	3.7 J	4.4	4.2	4.6	2.8	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	**9.4**	**28 J**	**39**	**52 J**	**30**	**35**	ND	0.6 J	0.52 J	0.8 J	0.47 J	ND	ND	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	0.8 J	-	-	-	0.94 J	-	-	ND	ND	ND	-	-	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	2.3	0.59 J	ND	**7.1 J**	3	3.2	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	0.62 J	0.81 J	1.6 J	ND	0.66 J	1.1	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	0.83 J	ND	0.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	ND	ND	-	ND	ND	-	-	-	ND	ND	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	0.68 J	0.69 J	ND	ND	0.51 J	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	2	3.3 J	3.1 J	ND	1.3	2.4	ND	ND	ND	ND	0.30 J	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	0.36 J	0.87 J	ND	0.55 J	0.59 J	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	**7.8**	**48 J**	**44**	ND	**47**	**36**	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.48 J	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	0.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	0.56 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	-	-	ND	-	-	-	-	ND	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	2.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	**2.4 J**	ND	ND	0.51 J	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
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R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ145D 6/30/10	SA-PZ145D 6/30/10 (DUP)	SA-PZ145D 9/21/10	SA-PZ145D 3/9/11	SA-PZ145D 3/9/11 (DUP)	SA-PZ145D 9/27/11	SA-PZ145D 9/18/12	SA-PZ145I 6/30/10	SA-PZ145I 9/21/10	SA-PZ145I 9/21/10 (DUP)	SA-PZ145I 3/9/11	SA-PZ145I 9/27/11	SA-PZ145I 9/18/12	SA-PZ145S 6/30/10
Screened Interval (feet bgs)				**50 - 55**	**50 - 55**	**50 - 55**	**50 - 55**	**50 - 55**	**50 - 55**	**50 - 55**	**30 - 35**	**30 - 35**	**30 - 35**	**30 - 35**	**30 - 35**	**30 - 35**	**5 - 15**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	ND	**8.7**	**6.1**	**5.9 J**	**5.6**	0.98 J	0.38 J	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**18**	**19**	**19**	**24 J**	**24**	**28**	**28**	**91**	**66**	**69 J**	**72**	**62**	**42**	ND
1,1-DICHLOROETHENE	75-35-4	7	**5**	1.1 J	1 J	2 J	1.5 J	1.4	1.8	1.9	**8.2**	**8.4**	**8.7 J**	**7.4**	**5.8**	4.8	ND
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	ND	ND	ND	-	-	-	-	ND	ND	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	0.78 J	ND	ND	0.80 J	ND	1.1 J	1.3 J	ND	1.4	1.2	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	-	-	-	ND	ND	ND	ND	-	-	ND	ND
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	0.59 J	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	0.99 J	0.83 J	ND	0.58 J	0.57 J	ND	ND	**6.1**	4.5 J	4.1 J	2.1	3.1	ND	ND
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	0.69 J	0.51 J	ND	ND	ND	ND	ND	0.65 J	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	ND	ND	ND	-	-	-	-	ND	ND	ND	-	-	-	ND
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	0.45 J	ND	ND	ND	ND	ND	0.81 J	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ145S 9/21/10	SA-PZ145S 3/9/11	SA-PZ145S 9/27/11	SA-PZ147 7/21/10	SA-PZ147 9/22/10	SA-PZ147 3/15/11	SA-PZ147 9/28/11	SA-PZ147 5/17/12	SA-PZ147 9/21/12	SA-PZ148 7/21/10	SA-PZ148 9/22/10	SA-PZ148 9/22/10 (DUP)	SA-PZ148 3/15/11	SA-PZ148 9/28/11
Screened Interval (feet bgs)				**5 - 15**	**5 - 15**	**5 - 15**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**	**3 - 6**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
1,1-DICHLOROETHANE	75-34-3		**5**	ND	ND	ND	ND	4.4 J	**17**	0.77 J	ND	**12**	ND	ND	ND	ND	R
1,1-DICHLOROETHENE	75-35-4	7	**5**	ND	ND	ND	ND	ND	3	R	ND	0.84 J	ND	ND	ND	ND	R
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	ND	ND	-	-	ND	R	-	-	-	-	-	ND	R
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	0.87 J	R	ND	ND	ND	ND	ND	ND	R
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	-	-	ND	ND	-	-	ND	ND	ND	ND	ND	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
ACETONE	67-64-1		50	ND	ND	ND	ND	ND	R	R	ND	ND	ND	ND	ND	R	R
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CHLOROMETHANE	74-87-3		5	ND	0.62 J	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
NAPHTHALENE	91-20-3		50	ND	-	-	ND	ND	-	-	-	-	ND	ND	ND	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	ND	1 J
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND	R
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	-	-	-	-	-	-	-		-	-	-	-	-	-
IRON	7439-89-6		**300**	-	-	-	-	-	-	-		-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	-	-	-	-	-	-	-		-	-	-	-	-	-

Notes:
bgs = Below ground surface
CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
ND = Not detected above report detection limit
NC = No criteria
J = Estimated value
R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ148 5/17/12	SA-PZ148 9/21/12	SA-PZ149I1 7/8/10	SA-PZ149I1 10/12/10	SA-PZ149I1 12/15/10	SA-PZ149I1 3/8/11	SA-PZ149I1 6/20/11	SA-PZ149I1 9/13/12	SA-PZ157I 7/8/10	SA-PZ157I 10/11/10	SA-PZ157I 12/14/10	SA-PZ157I 3/7/11	SA-PZ157I 5/9/11	SA-PZ157I 6/21/11
Screened Interval (feet bgs)				**3 - 6**	**3 - 6**	**32 - 37**	**32 - 37**	**32 - 37**	**32 - 37**	**32 - 37**	**32 - 37**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	ND	ND	**6.6**	ND	ND	ND	ND	**84**	**46**	**15**	**17**	**21**	**31 J**	**9.7**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7 J
1,1-DICHLOROETHANE	75-34-3		**5**	**18**	ND	**40**	3.6 J	**6.7**	**18**	**12 J**	**520**	**180**	**65**	**75**	**71**	**280 J**	**45**
1,1-DICHLOROETHENE	75-35-4	7	**5**	1	ND	2.6 J	ND	0.82 J	1.7	1.3 J	**36**	**13**	4.2 J	4.1 J	**5.2**	**17 J**	3.4
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	-	-	-	-	-	ND	-	-	-	-	-	1.7 J	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	1.9	ND	3.7	ND	ND	ND	ND	**5 J**	0.85 J
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	1.6 J	1.2 J	3 J	**7.8**	3.2 J	3.2	ND	ND	ND	ND	1.9 J	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	ND	-	-	0.51 J	ND	ND	ND	-	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	1.1 J	1 J	2.7 J	**6**	2.5 J	2.2	ND	ND	ND	ND	1.4 J	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	**5.4**	4.7 J	**13**	**28**	**12 J**	**11**	ND	ND	ND	ND	**6.6 J**	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	ND	R	R	ND	ND	ND	ND	R	R	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	ND	1.4	0.43 J	ND	ND	ND	1.7 J	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	**9.8**	ND	**10**	**18**	**14 J**	**180**	**24**	**5.7**	**7.6**	3.3	**200 J**	3.4 J
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	0.51 J	ND	ND	ND	ND	0.62 J	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	0.38 J	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	0.42 J	ND	0.39 J	1.8	ND	4.4	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	ND	ND	ND	-	-	-	ND	ND	ND	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**		-	-	-	-	-	-	-	-	-	2.97 J	-	-	ND
IRON	7439-89-6		**300**		-	-	-	-	-	112	-	275	**460 J**	**10600**	**3090 J**	-	**978**
MANGANESE	7439-96-5		**300**		-	-	-	-	-	**1630**	-	293	**889**	**1400**	**533**	-	**1050**

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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ157I 9/19/12	SA-PZ157I1 7/7/10	SA-PZ157I1 10/11/10	SA-PZ157I1 12/14/10	SA-PZ157I1 12/14/10 (DUP)	SA-PZ157I1 3/7/11	SA-PZ157I1 5/9/11	SA-PZ157I1 6/21/11	SA-PZ157I1 9/21/11	SA-PZ157I1 9/19/12	SA-PZ160I 7/7/10	SA-PZ160I 10/12/10	SA-PZ160I 12/16/10	SA-PZ160I 3/8/11
Screened Interval (feet bgs)				**41 - 46**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**33 - 38**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	4.5	**73**	**48 J**	**20**	**21**	**20 J**	**16 J**	**23**	**46**	**130 J**	**53**	**37**	**41**	**30 J**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**28**	**340**	**220**	**100**	**100**	**190**	**140**	**280**	**540**	**550**	**210 J**	**150 J**	**160**	**130**
1,1-DICHLOROETHENE	75-35-4	7	**5**	1.6	**23**	**17 J**	**7.6**	**7.9**	**14 J**	**13 J**	**19**	**25**	**40 J**	**17**	**11**	**11**	**9.3 J**
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	-	-	2.7 J	ND	3.4	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	ND	**9.4 J**	**8.6 J**	**6.3 J**	**9.6**	4.4 J	1.9 J	ND	ND	0.63 J
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	2.3 J	2.1 J	2.2 J	**7.4 J**	**9.8 J**	**7.4 J**	**5.9**	4.6 J	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	0.57 J	0.55 J	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	ND	-	-	-	-	0.47 J	ND	ND	ND	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	1.3 J	1.4 J	1.4 J	**5.6 J**	**7.3 J**	**5.9 J**	4.5	4.1 J	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	0.37 J	ND	**6.1 J**	**7.3**	**7.4**	**26 J**	**37 J**	**26**	**19**	**16 J**	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	R	8.1 J	7.3 J	ND	ND	ND	ND	ND	ND	R	22 J	7 J
BENZENE	71-43-2	5	5	ND	0.81 J	0.84 J	ND	ND	1.7 J	1.9 J	ND	2.1	1.0 J	0.48 J	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	2.2 J	**57**	**57 J**	**49**	**49**	**160**	**130**	**200**	**430**	**270**	**26**	**13 J**	**21**	**11 J**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	0.59 J	0.96 J	ND	1.1	0.47 J	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	0.75 J	1.2 J	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	1.7 J	3 J	ND	ND	1.8 J	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	ND	ND	ND	-	-	-	-	-	4.5 J	ND	ND	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	0.58 J	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	0.73 J	0.34 J	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	ND	-	-	5.32 J	3.63 J	-	-	ND	-	1.6 J	-	-	7.42 J	-
IRON	7439-89-6		**300**	**519**	93.4 J	82.4 J	**2610**	**2580**	**1150 J**	-	**776**	-	207	**1520**	38.7 J	**3340**	**8060 J**
MANGANESE	7439-96-5		**300**	**325**	**4430**	**5210**	**5540**	**5510**	**5580**	-	**5200**	-	**5200**	**571**	**516**	**662**	**1070**

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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
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Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ160I 6/21/11	SA-PZ160I1 7/6/10	SA-PZ160I1 10/12/10	SA-PZ160I1 12/13/10	SA-PZ160I1 3/8/11	SA-PZ160I1 6/21/11	SA-PZ161I 7/7/10	SA-PZ161I 10/12/10	SA-PZ161I 12/14/10	SA-PZ161I 3/8/11	SA-PZ161I 3/8/11 (DUP)	SA-PZ161I 6/21/11	SA-PZ161I 9/19/11	SA-PZ161I 9/19/11 (DUP)
Screened Interval (feet bgs)				**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**	**41 - 46**
Volatile Organic Compounds (µg/L)																	
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	**14**	**43**	**40 J**	**39**	**47**	**16**	**100**	**18**	**16**	**26**	**30**	**35 J**	**6.5**	**6.6**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**85**	**250**	**200**	**180**	**210**	**190**	**530**	**110**	**97**	**140**	**140**	**290 J**	**88**	**83**
1,1-DICHLOROETHENE	75-35-4	7	**5**	4.8	**17**	**15 J**	**13**	**17**	**13**	**31**	**6.9**	**5.9**	**10**	**10**	**13 J**	**5.9**	**5.6**
1,2,3-TRICHLOROBENZENE	87-61-6		5	ND	-	-	-	-	ND	-	-	-	-	-	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	2.2	**5.2 J**	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	-	ND	ND	ND	-	-	ND	ND	ND	-	-	-	-	-
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	ND	ND	ND	**5.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	ND	ND	R	R	ND	ND	ND	R	R	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	0.5 J	0.51 J	ND	0.82 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	**6**	**34**	**42 J**	**33**	**55**	**140**	**51**	**9.5**	**8**	**9.5**	**11**	**16 J**	**8**	**8.2**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	ND	ND	ND	-	-	ND	ND	ND	-	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	ND	ND	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																	
ARSENIC	7440-38-2		**10**	**19.4**	-	-	-	-	-	-	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	**11800**	-	-	-	-	**2300**	-	-	-	-	-	**11800**	-	-
MANGANESE	7439-96-5		**300**	**660**	-	-	-	-	**3900**	-	-	-	-	-	**2770**	-	-

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µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
- (hyphen) = Indicates Not Analyzed
* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-3
Southern Area
Groundwater Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	Federal MCLs[1]	NYSDOH MCLs[2]	SA-PZ161I 9/19/12	SA-PZ161I 9/19/12 (DUP)	SA-PZ163I 9/19/12	SA-PZ166I 9/17/10	SA-PZ166I 9/12/12	SA-PZ171I 2/20/12	SA-PZ171I 9/11/12	SA-PZ172I 2/20/12	SA-PZ172I 9/11/12
Screened Interval (feet bgs)				**41 - 46**	**41 - 46**	**32 - 42**	**60 - 80**	**60 - 80**	**41.5 - 46.5**	**41.5 - 46.5**	**43.5 - 48.5**	**43.5 - 48.5**
Volatile Organic Compounds (µg/L)												
1,1,1-TRICHLOROETHANE	71-55-6	200	**5**	2.0	2.0	1.3	ND	ND	**48**	**66**	**28**	**22 J**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1		50	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3		**5**	**26**	**27**	**26**	ND	ND	**390**	**470**	**230**	**190**
1,1-DICHLOROETHENE	75-35-4	7	**5**	1.7	1.8	1.7	ND	ND	**27**	**40**	**17**	**16 J**
1,2,3-TRICHLOROBENZENE	87-61-6		5	-	-	-	-	-	1.4	-	0.78 J	-
1,2,4-TRICHLOROBENZENE	120-82-1		**5**	ND	ND	0.41 J	ND	ND	4	2.9	2.3	0.67 J
1,2-DICHLOROBENZENE	95-50-1	600	**5**	ND	ND	ND	ND	ND	1.3	0.68 J	0.72 J	0.64 J
1,2-DICHLOROETHANE	107-06-2	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE, TOTAL	540-59-0		5	ND	ND	ND	ND	ND	-	0.28 J	-	0.22 J
1,3-DICHLOROBENZENE	541-73-1		**5**	ND	ND	ND	ND	ND	0.66 J	0.32 J	0.51 J	0.71 J
1,4-DICHLOROBENZENE	106-46-7	75	**5**	ND	0.26 J	0.28 J	ND	ND	2.9	1.6	2	3.5 J
2-BUTANONE	78-93-3		50	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-HEXANONE	591-78-6		50	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	67-64-1		50	2.2 J	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	71-43-2	5	5	ND	ND	ND	ND	ND	ND	0.48 J	ND	ND
CARBON DISULFIDE	75-15-0		50	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3		**5**	ND	ND	ND	ND	ND	**25**	**37**	**24**	**29 J**
CHLOROFORM	67-66-3	80	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	74-87-3		5	ND	ND	ND	ND	ND	0.54 J	ND	0.5 J	ND
CIS-1,2-DICHLOROETHENE	156-59-2	70	5	ND	ND	ND	ND	ND	ND	0.28 J	ND	0.22 J
CYCLOHEXANE	110-82-7		50	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE	98-82-8		**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	**5**	ND	ND	ND	2.7 J	ND	ND	ND	ND	ND
NAPHTHALENE	91-20-3		50	-	-	-	ND	-	-	-	-	-
TETRACHLOROETHENE	127-18-4	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	1000	5	ND	ND	ND	0.64 J	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	100	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	75-01-4	2	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)												
ARSENIC	7440-38-2		**10**	**22.2**	**22.2**	-	-	-	-	-	-	-
IRON	7439-89-6		**300**	**9630**	**9770**	-	-	-	-	-	-	-
MANGANESE	7439-96-5		**300**	**1410**	**1420**	-	-	-	-	-	-	-

Notes:
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R = rejected value not reported
µg/L = Micrograms per liter
Bold = Indicates exceedance of an MCL
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* Acetone and methylene chloride were detected in some samples, but are generally considered laboratory contaminants.
[1] National Primary Drinking Water Regulations, 40 CFR Part 141, as summarized on the USEPA website at http://water.epa.gov/drink/contaminants/index.cfm.
[2] New York State Department of Health (NYSDOH) Drinking Water Regulations, 10 NYCRR Part 5, Subpart 5-1 as summarized on the NYSDOH website at http://www.health.ny.gov/regulations/nycrr/title_10/part_5/subpart_5-1_tables.htm.

Table 4-4
Southern Area
Surface Water Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Class A AWQS Values[1,2]	NYSDEC Class C AWQS Values[1,2]	ORNL Surface Water Values[3]	SA-SW124 8/5/08	SA-SW124 3/24/09	SA-SW124 9/17/09	SA-SW124 7/21/10	SA-SW124 9/22/10	SA-SW124 9/22/10 (DUP)	SA-SW124 3/15/11	SA-SW124 3/15/11 (DUP)	SA-SW124 9/28/11	SA-SW124 5/17/12	SA-SW124 9/21/12	SA-SW124 9/21/12 (DUP)
Volatile Organic Compounds (µg/L)																
1,1,1-TRICHLOROETHANE	71-55-6	5		11	ND	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3	5		47	ND	ND	ND	ND	0.46 J	0.56 J	0.61 J	0.76 J	1.8 J	1.1	1.8	1.7
1,1-DICHLOROETHENE	75-35-4	0.7[4]		25	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1	5	5	110	ND	4.9 J	ND	ND	ND	ND	ND	ND	R	ND	ND	ND
ACETONE*	67-64-1	50[4]		1500	4 J	ND	ND	ND	ND	3.5 J	R	R	R	ND	3.0 J	3.4 J
METHYLENE CHLORIDE	75-09-2	5	200	2200	ND	0.88 J	ND	ND	ND	ND	ND	ND	R	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	40	47	ND	ND	ND	ND	ND	ND	ND	ND	**6.2 J**	ND	ND	ND

Notes:
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ORNL = Oak Ridge National Laboratory
NYSDEC = New York State Department of Environmental Conservation
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[1] NYSDEC Technical and Operational Guidance Series 1.1.1 - Ambient Water Quality Standards and Effluent Limitations, June 1998 Issue (NYSDEC 1998, as amended January 1999).
http://www.dec.ny.gov/docs/water_pdf/togs111.pdf
http://www.dec.ny.gov/docs/water_pdf/err111.pdf
[2] The Peconic River is classified as a Class C water body in the study area (Title 6, New York Codes, Rules and Regulations Part 921); Class A water supply standards are provided for context since Class C standards do not exist for all contaminants.
[3] ORNL Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota, 1996 Revision (Suter, G.W. and C.L. Tsao 1996); Table 1, Secondary Chronic Values.
http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf
[4] Denotes NYSDEC has not promulgated a standard, but has provided a guidance value; exceedances of non-statutory guidance values are not bolded.

Table 4-4
Southern Area
Surface Water Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Class A AWQS Values[1,2]	NYSDEC Class C AWQS Values[1,2]	ORNL Surface Water Values[3]	SA-SW125 8/5/08	SA-SW125 3/24/09	SA-SW125 3/24/09 (DUP)	SA-SW125 9/17/09	SA-SW125 7/21/10	SA-SW125 9/22/10	SA-SW125 3/15/11	SA-SW125 9/28/11	SA-SW125 5/17/12	SA-SW125 9/21/12	SA-SW201 8/5/08	SA-SW201 8/5/08 (DUP)
Volatile Organic Compounds (µg/L)																
1,1,1-TRICHLOROETHANE	71-55-6	5		11	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3	5		47	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	0.7[4]		25	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1	5	5	110	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND
ACETONE*	67-64-1	50[4]		1500	4 J	ND	ND	ND	ND	ND	R	R	ND	ND	2 J	3 J
METHYLENE CHLORIDE	75-09-2	5	200	2200	ND	1 J	1.3 J	ND	ND	ND	ND	R	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	40	47	ND	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND

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R = rejected value not reported
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- (hyphen) = Indicates Not Analyzed
ORNL = Oak Ridge National Laboratory
NYSDEC = New York State Department of Environmental Conservation
* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] NYSDEC Technical and Operational Guidance Series 1.1.1 - Ambient Water Quality Standards and Effluent Limitations, June 1998 Issue (NYSDEC 1998, as amended January 1999).
http://www.dec.ny.gov/docs/water_pdf/togs111.pdf
http://www.dec.ny.gov/docs/water_pdf/err111.pdf
[2] The Peconic River is classified as a Class C water body in the study area (Title 6, New York Codes, Rules and Regulations Part 921); Class A water supply standards are provided for context since Class C standards do not exist for all contaminants.
[3] ORNL Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota, 1996 Revision (Suter, G.W. and C.L. Tsao 1996); Table 1, Secondary Chronic Values.
http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf
[4] Denotes NYSDEC has not promulgated a standard, but has provided a guidance value; exceedances of non-statutory guidance values are not bolded.

Table 4-4
Southern Area
Surface Water Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Class A AWQS Values[1,2]	NYSDEC Class C AWQS Values[1,2]	ORNL Surface Water Values[3]	SA-SW201 3/24/09	SA-SW201 9/17/09	SA-SW201 9/17/09 (DUP)	SA-SW201 7/21/10	SA-SW201 7/21/10 (DUP)	SA-SW201 9/22/10	SA-SW201 3/15/11	SA-SW201 9/28/11	SA-SW201 9/28/11 (DUP)	SA-SW201 5/17/12	SA-SW201 5/17/12 (DUP)	SA-SW201 9/21/12
Volatile Organic Compounds (µg/L)																
1,1,1-TRICHLOROETHANE	71-55-6	5		11	ND	ND	ND	ND	ND	ND	ND	R	0.84 J	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3	5		47	ND	ND	ND	ND	ND	ND	ND	R	R	ND	ND	ND
1,1-DICHLOROETHENE	75-35-4	0.7[4]		25	ND	ND	ND	ND	ND	ND	ND	R	R	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1	5	5	110	ND	ND	ND	ND	ND	ND	ND	R	R	ND	ND	ND
ACETONE*	67-64-1	50[4]		1500	ND	ND	ND	ND	ND	4.2 J	R	R	R	ND	ND	3.4 J
METHYLENE CHLORIDE	75-09-2	5	200	2200	1 J	ND	ND	ND	ND	ND	ND	R	R	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	40	47	ND	ND	ND	ND	ND	ND	ND	R	R	ND	ND	ND

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ORNL = Oak Ridge National Laboratory
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* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] NYSDEC Technical and Operational Guidance Series 1.1.1 - Ambient Water Quality Standards and Effluent Limitations, June 1998 Issue (NYSDEC 1998, as amended January 1999).
http://www.dec.ny.gov/docs/water_pdf/togs111.pdf
http://www.dec.ny.gov/docs/water_pdf/err111.pdf
[2] The Peconic River is classified as a Class C water body in the study area (Title 6, New York Codes, Rules and Regulations Part 921); Class A water supply standards are provided for context since Class C standards do not exist for all contaminants.
[3] ORNL Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota, 1996 Revision (Suter, G.W. and C.L. Tsao 1996); Table 1, Secondary Chronic Values.
http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf
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Table 4-4
Southern Area
Surface Water Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Class A AWQS Values[1,2]	NYSDEC Class C AWQS Values[1,2]	ORNL Surface Water Values[3]	SA-SW204 8/5/08	SA-SW204 8/5/08 (DUP)	SA-SW204 3/24/09	SA-SW204 9/17/09	SA-SW204 7/21/10	SA-SW204 9/22/10	SA-SW204 9/28/11	SA-SW204 5/17/12	SA-SW204 9/21/12
Volatile Organic Compounds (µg/L)													
1,1,1-TRICHLOROETHANE	71-55-6	5		11	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	75-34-3	5		47	ND	ND	ND	ND	ND	ND	ND	ND	0.57 J
1,1-DICHLOROETHENE	75-35-4	0.7[4]		25	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1	5	5	110	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1	50[4]		1500	4 J	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	5	200	2200	ND	ND	1.9 J	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	79-01-6	5	40	47	ND	ND	ND	ND	ND	ND	ND	ND	ND

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CAS = Chemical Abstracts Service
MCL = Maximum contaminant level
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NC = No criteria
J = Estimated value
R = rejected value not reported
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ORNL = Oak Ridge National Laboratory
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* Acetone was detected in some samples, but is generally considered a laboratory contaminant.
[1] NYSDEC Technical and Operational Guidance Series 1.1.1 - Ambient Water Quality Standards and Effluent Limitations, June 1998 Issue (NYSDEC 1998, as amended January 1999).
http://www.dec.ny.gov/docs/water_pdf/togs111.pdf
http://www.dec.ny.gov/docs/water_pdf/err111.pdf
[2] The Peconic River is classified as a Class C water body in the study area (Title 6, New York Codes, Rules and Regulations Part 921); Class A water supply standards are provided for context since Class C standards do not exist for all contaminants.
[3] ORNL Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota, 1996 Revision (Suter, G.W. and C.L. Tsao 1996); Table 1, Secondary Chronic Values.
http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf
[4] Denotes NYSDEC has not promulgated a standard, but has provided a guidance value; exceedances of non-statutory guidance values are not bolded.

Table 4-5
Southern Area
Sediment Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Unrestricted SCOs[1]	NYSDEC Technical Guidance[2]	ORNL[3]	SA-SD124 8/5/08	SA-SD124 3/24/09	SA-SD124 9/17/09	SA-SD124 9/22/10	SA-SD124 9/22/10 (DUP)	SA-SD124 3/15/11	SA-SD124 3/15/11 (DUP)	SA-SD124 9/28/11	SA-SD124 5/17/12	SA-SD124 9/21/12	SA-SD124 9/21/12 (DUP)	SA-SD125 8/5/08	SA-SD125 3/24/09
Volatile Organic Compounds (µg/Kg)																	
1,1-DICHLOROETHANE	75-34-3	270		27	ND	7.5	ND	7.6 J	ND	ND	ND	ND	20	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		910	9600	ND	ND	ND	9.7 J	ND	ND	ND	3.3 J	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3	120		270	ND	-	ND	23 J	6.1 J	ND	ND	ND	ND	ND	ND	ND	-
ACETONE*	67-64-1	50		8.7	**35**	ND	**310 J**	**130 J**	**46**	ND	ND	7.8 J	**150**	**11 J**	**11 J**	**65**	**360 J**
CHLOROETHANE	75-00-3				ND	-	ND	ND	ND	ND	ND	ND	4.3 J	ND	ND	ND	-
METHYLENE CHLORIDE	75-09-2	50		370	ND	ND	ND	ND	ND	3.5 J	3.5 J	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	1300	8	410	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	700	490	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Physical Parameters (%)																	
TOTAL SOLIDS					70	-	-	-	-	-	-	-	-	78	77	55	-
CARBON, TOTAL ORGANIC	7440-44-0				-	-	-	-	-	-	-	-	-	0.16	0.16	-	-

Notes:

CAS = Chemical Abstracts Service

MCL = Maximum contaminant level

ND = Not detected above report detection limit

NC = No criteria

J = Estimated value

R = rejected value not reported

µg/Kg = Micrograms per kilogram

Bold = Indicates exceedance of an MCL

- (hyphen) = Indicates Not Analyzed

ORNL = Oak Ridge National Laboratory

NYSDEC = New York State Department of Environmental Conservation

* Acetone was detected in some samples, but is generally considered a laboratory contaminant.

[1] NYSDEC Remedial Program Soil Cleanup Objectives, Table 375-6.8(a) (Title 6 New York Codes, Rules and Regulations, Part 375-6).
http://www.dec.ny.gov/regs/15507.html

[2] NYSDEC Technical Guidance for Screening Contaminated Sediment (NYSDEC 1999), Table 1, assuming 1 percent total organic carbon.
http://www.dec.ny.gov/docs/wildlife_pdf/seddoc.pdf

[3] ORNL Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Sediment-Associated Biota, 1997 Revision (Jones, D.S., G.W. Suter and R.N. Hull 1997); Table 3, Secondary Chronic Values.
http://www.esd.ornl.gov/programs/ecorisk/documents/tm95r4.pdf

Table 4-5
Southern Area
Sediment Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Unrestricted SCOs[1]	NYSDEC Technical Guidance[2]	ORNL[3]	SA-SD125 3/24/09 (DUP)	SA-SD125 9/17/09	SA-SD125 9/22/10	SA-SD125 3/15/11	SA-SD125 9/28/11	SA-SD125 5/17/12	SA-SD125 9/21/12	SA-SD201 8/5/08	SA-SD201 3/24/09	SA-SD201 9/17/09	SA-SD201 9/17/09 (DUP)	SA-SD201 9/22/10	SA-SD201 3/15/11
Volatile Organic Compounds (µg/Kg)																	
1,1-DICHLOROETHANE	75-34-3	270		27	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		910	9600	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3	120		270	-	ND	ND	ND	ND	ND	R	ND	-	ND	ND	ND	ND
ACETONE*	67-64-1	50		8.7	**400 J**	ND	ND	ND	ND	**110**	**160 J**	ND	ND	ND	ND	ND	ND
CHLOROETHANE	75-00-3				-	ND	ND	ND	ND	ND	R	ND	-	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	50		370	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	2 J
TETRACHLOROETHENE	127-18-4	1300	8	410	ND	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND
TOLUENE	108-88-3	700	490	50	39 J	ND	ND	ND	ND	ND	R	ND	ND	ND	ND	ND	ND
Physical Parameters (%)																	
TOTAL SOLIDS					-	-	-	-	-	-	8.9	77	-	-	-	-	-
CARBON, TOTAL ORGANIC	7440-44-0				-	-	-	-	-	-	27 J	-	-	-	-	-	-

Notes:

CAS = Chemical Abstracts Service

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ND = Not detected above report detection limit

NC = No criteria

J = Estimated value

R = rejected value not reported

µg/Kg = Micrograms per kilogram

Bold = Indicates exceedance of an MCL

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Table 4-5
Southern Area
Sediment Analytical Detections Summary
NWIRP Calverton, New York

Chemical	CAS No.	NYSDEC Unrestricted SCOs[1]	NYSDEC Technical Guidance[2]	ORNL[3]	SA-SD201 9/28/11	SA-SD201 9/28/11 (DUP)	SA-SD201 5/17/12	SA-SD201 5/17/12 (DUP)	SA-SD201 9/21/12	SA-SD204 8/5/08	SA-SD204 3/24/09	SA-SD204 9/17/09	SA-SD204 9/22/10	SA-SD204 3/15/11	SA-SD204 9/28/11	SA-SD204 5/17/12	SA-SD204 9/21/12
Volatile Organic Compounds (µg/Kg)																	
1,1-DICHLOROETHANE	75-34-3	270		27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	120-82-1		910	9600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-BUTANONE	78-93-3	120		270	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
ACETONE*	67-64-1	50		8.7	ND	ND	**100 J**	ND	ND	ND	ND	ND	ND	**22 J**	ND	**120 J**	**25 J**
CHLOROETHANE	75-00-3				ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	75-09-2	50		370	2.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	127-18-4	1300	8	410	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30 J**	ND	ND
TOLUENE	108-88-3	700	490	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Physical Parameters (%)																	
TOTAL SOLIDS					-	-	-	-	82	73	-	-	-	-	-	-	81
CARBON, TOTAL ORGANIC	7440-44-0				-	-	-	-	ND	-	-	-	-	-	-	-	0.20

Notes:

CAS = Chemical Abstracts Service

MCL = Maximum contaminant level

ND = Not detected above report detection limit

NC = No criteria

J = Estimated value

R = rejected value not reported

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Bold = Indicates exceedance of an MCL

- (hyphen) = Indicates Not Analyzed

ORNL = Oak Ridge National Laboratory

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[2] NYSDEC Technical Guidance for Screening Contaminated Sediment (NYSDEC 1999), Table 1, assuming 1 percent total organic carbon.
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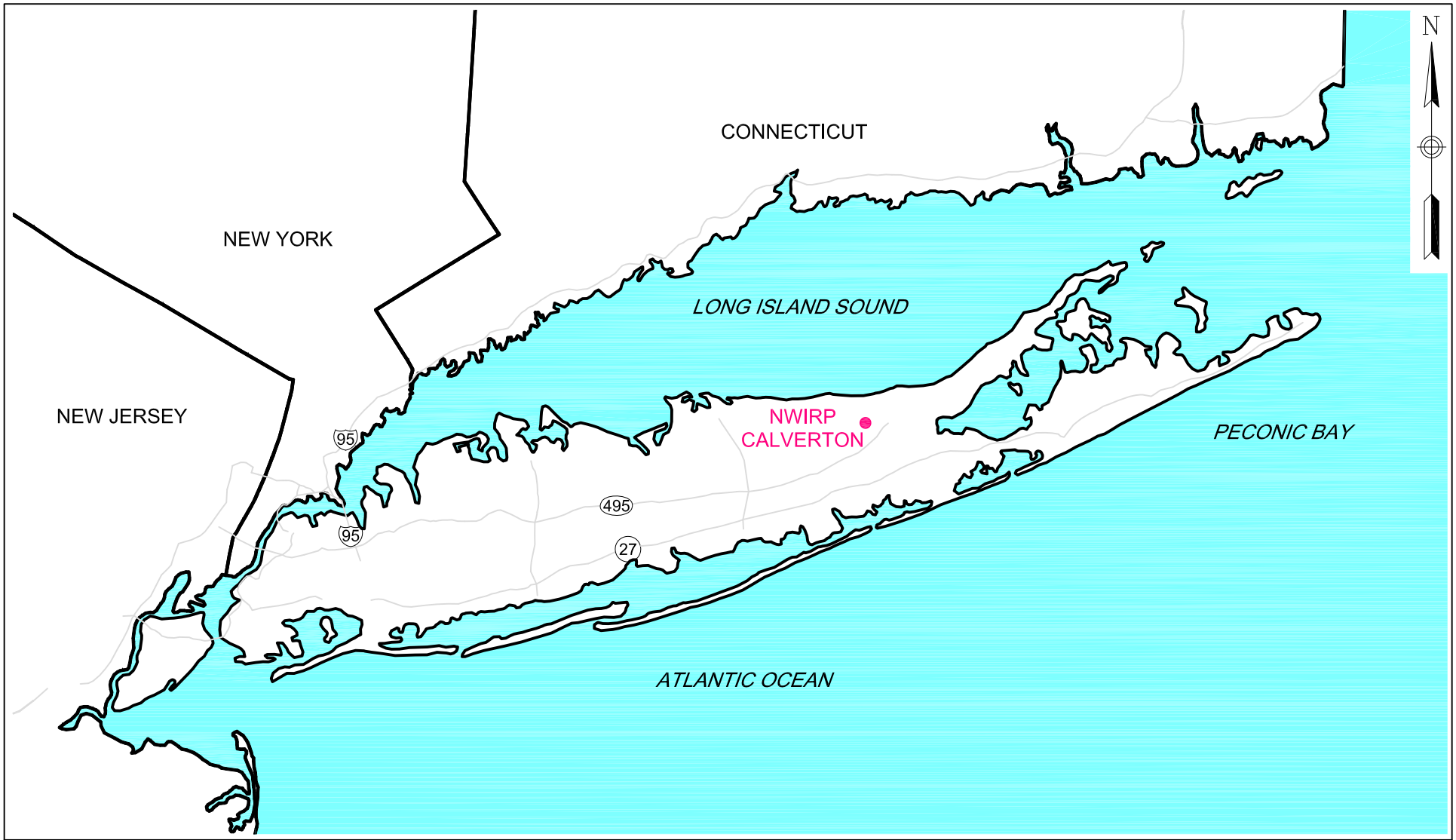
http://www.esd.ornl.gov/programs/ecorisk/documents/tm95r4.pdf

Figures



NAVFAC

0 15 30
SCALE IN MILES

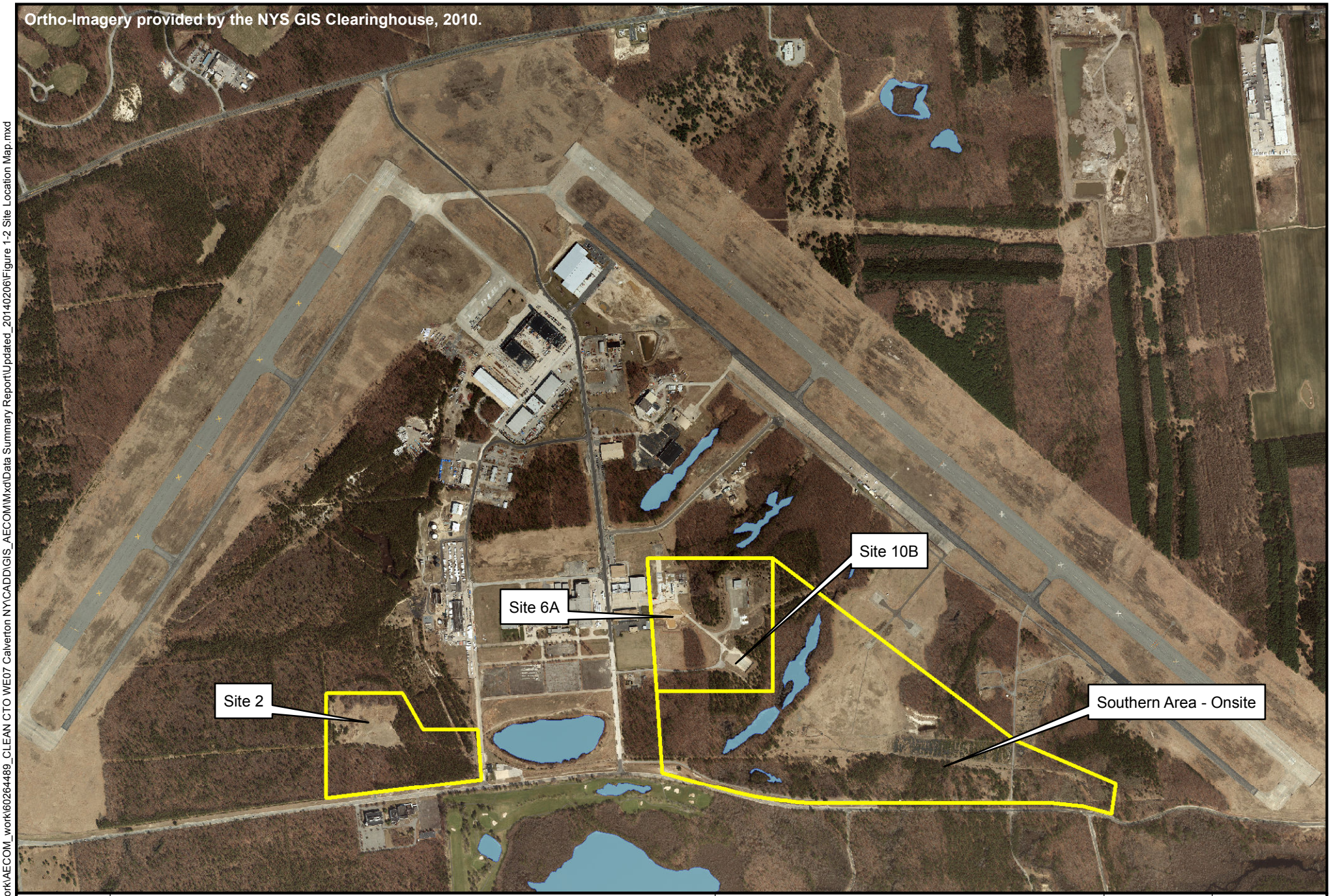
General Location Map
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Figure 1 – 1

Date: 2/6/2014

Project #:
60264489



Legend

- Pond
- Property Line

N W E S

1,300 650 0 Feet

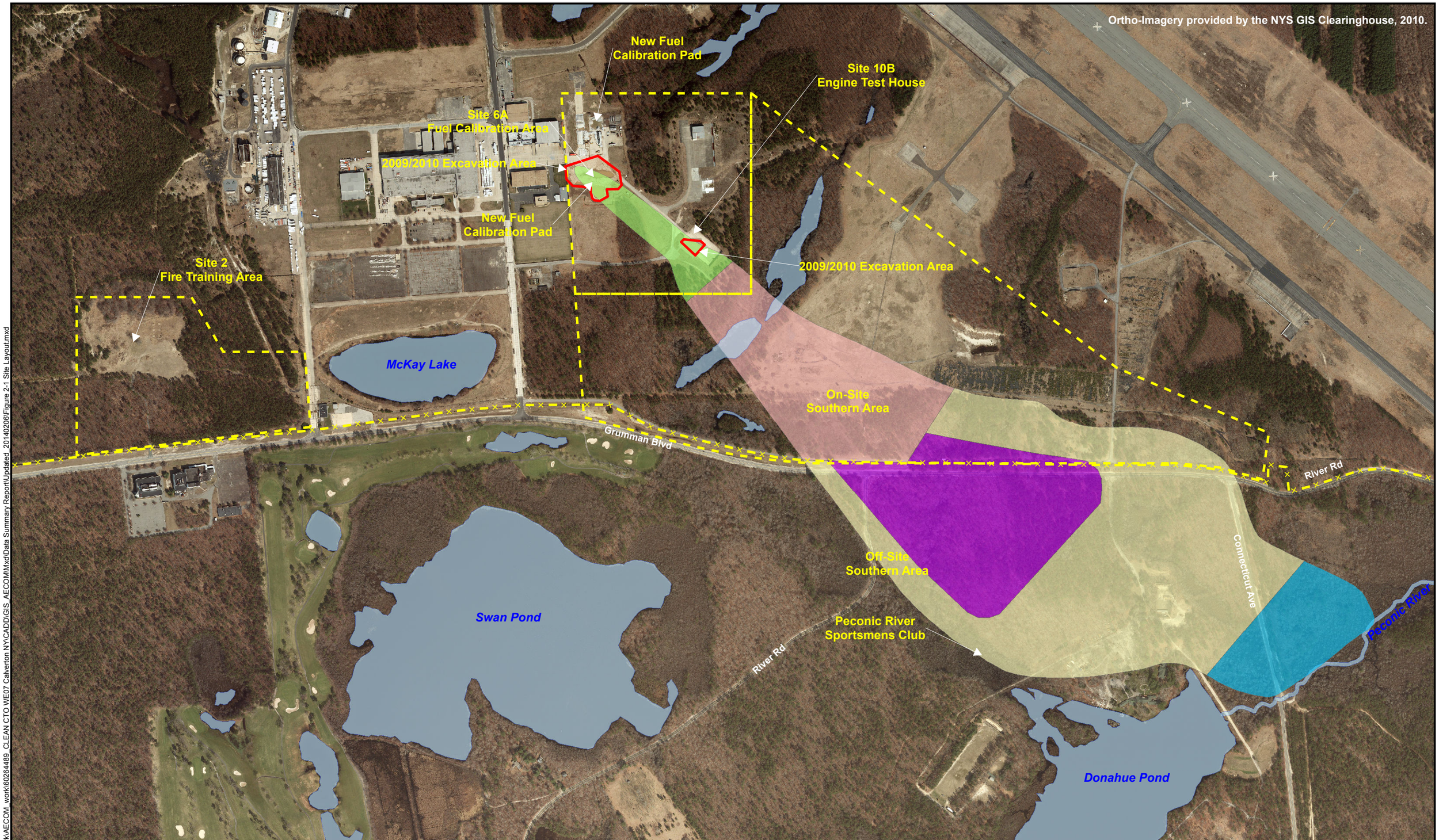
Site Location Map
NWIRP Calverton
Calverton, New York

Figure 1 - 2

Date: 2/6/2014

Project #: 60264489

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 1-2 Site Location Map.mxd



File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 2-1 Site Layout.mxd

NAVFAC

Legend

- Property Line
- Fence Line
- 2009/2010 Excavation Area
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Source Area
- Water

Data Source: TetraTech, 2011

600 300 0 Feet

Site Layout
Site 2, Site 6A, Site 10B and Southern Area
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Figure 2-1

Date: 2/6/2014

Project #: 60264489

Aerial photographs provided by the NYS GIS Clearinghouse, March -May 2007.

N

A

A'

FCMW01S,I
FCMW03SR1
FCMW08S
FCMW04S,I
SATW351
SATW324
SATW350
FCMW07S,I
SATW323
SATW330
SATW347
SATW346
SATW348
FCMW06S
SATW403
SATW303
FCMW05S,I
SATW344
ETMW03S
SATW343
SATW402
FCPZ05I1
SATW342
ETMW01S
SATW302
SATW309
SATW341
ETMW02S
SATW404
SATW340
SATW405
SATW333
SATW306
SATW332
SATW406
SATW331
SATW336
SAMW130S
SAMW130I
SATW407
SATW301
SATW339
SATW308
SATW334
SATW305
SATW321
SATW337
SATW307
SATW320
SATW304
SATW313
SAPZ138I
SATW311
SATW408
SAPZ408
SAPZ139I
SATW409
SATW317
SATW310
SATW319
SATW353
SATW355
SATW356
SATW318
SATW322
SATW410
SATW411
SATW352
SATW354
SATW357
SAMW127S,I,D
SAPZ137I
SAMW126S,I,D
SAPZ134I
SATW314
SAMW129S
SAMW129I
SATW420
SATW315
SAMW128S,I,D
SATW316
SAMW129D
SATW419
SATW417
SATW418
SAPZ136I
SATW416
SATW415
SAPZ140I
SATW365
SAPZ120S
SATW327
SATW345
SAPZ135I
SAPZ133I,I1
SAPZ141I
SAPZ145S,I,D
SATW414
SATW325
SAPZ122S
SAPZ122I
SATW328
SATW413
SATW312
SATW366
SAPZ122D
SAPZ142I
SAPZ125
SATW326
SAPZ172I
SAPZ144S,I
SAPZ146
SAMW131S,I,D
SAPZ143I
SAPZ123S
SAPZ148
SAPZ123I
SAPZ123I1
SAPZ124
SATW329
SATW367
SAPZ171I
SAPZ166I
CAPRSC03
CAPRSC04
CAPRSC02
SAPZ118S
SAPZ147
SAMW132S
SAMW132I
SAPZ118I
SAPZ118D
SA-GA02
SA-GA01
CAPRSC01
SASD201
SASW201

Legend

- Existing Temporary Well
- New Temporary Well
- Existing Piezometer
- New Piezometer
- Monitoring Well
- Staff Gauge
- Supply Well

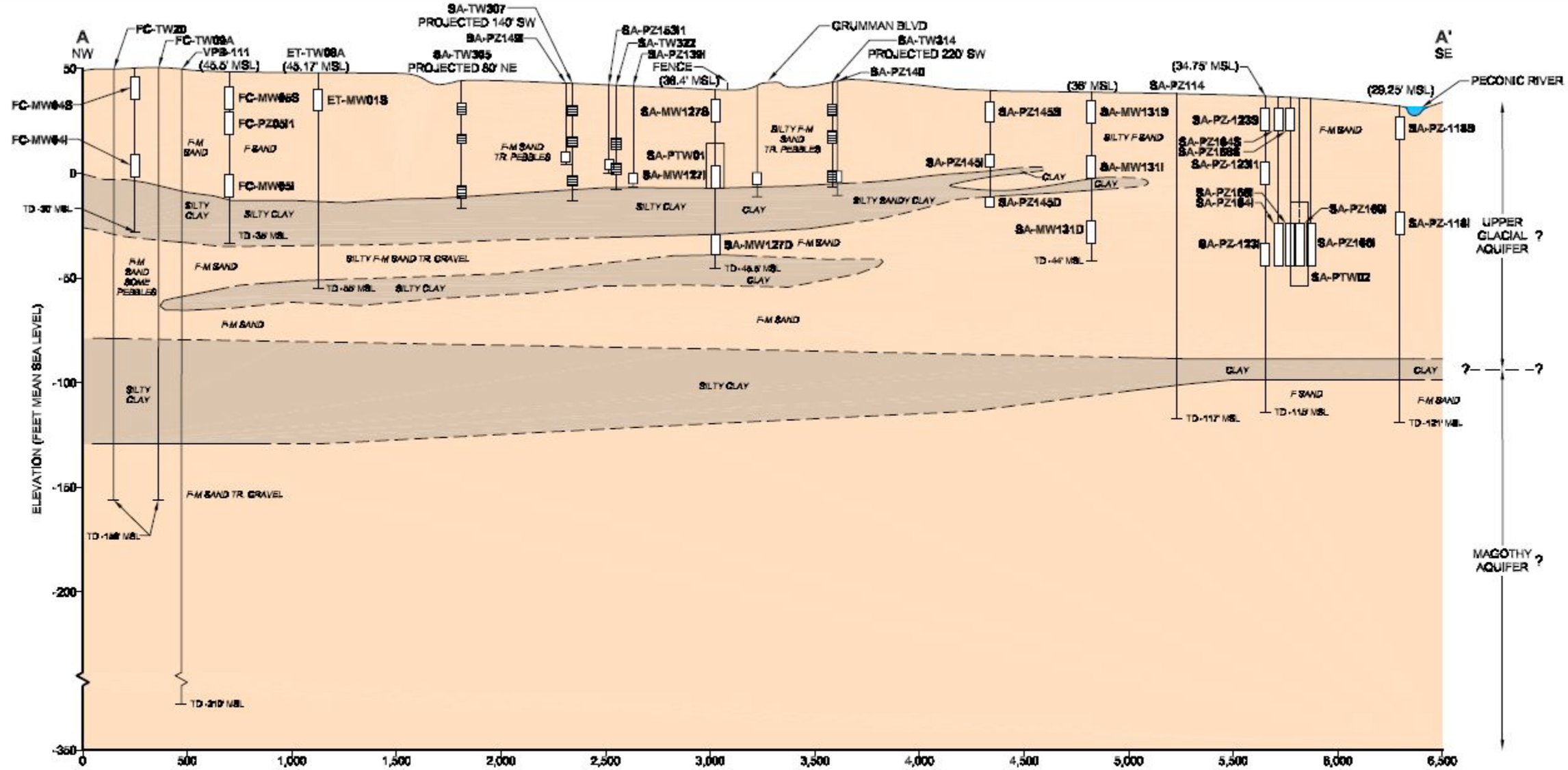
0 250 500 1,000 Feet

Source: TetraTech (2011)

Southern Area Transect A-A'
(Plan)
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Project #: 60264489	Date: 2/6/2014	Figure 2-2



LEGEND

(45.5' MSL) GROUND SURFACE ELEVATION (FEET MEAN SEA LEVEL)

GROUND SURFACE

F SAND LITHOLOGY

SA-MW131S MONITORING WELL SCREEN

TEMPORARY WELL SCREEN

CONFINING UNIT

TD -30' MSL TOTAL DEPTH (FEET MEAN SEA LEVEL)

Source: TetraTech (2011)

0 500 1,000

SCALE IN FEET
10x VERTICAL EXAGGERATION

Southern Area Transect A-A'
(Cross Section)
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Project #: 60264489	Date: 2/6/2014	Figure 2-3

Legend

- Monitoring Well
- Fence Line
- Site Boundary
- Former Fire Training Ring
- Property Line

N W E S

200 100 0 Feet

Site 2 - Fire Training Area Monitoring Well Location Map NWIRP Calverton Calverton, New York

NAVFAC

RESOLUTION CONSULTANTS

Figure 3-1

Date: 2/6/2014

Project #: 60264489

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 3-1 Monitoring Well Location Map Site 2.mxd

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 3-2 Sites 6A 10B Monitoring Well Location Map.mxd

NAVFAC

Legend

Monitoring Well
Piezometer
Site Boundary
Property Line

N W E S

300 150 0 Feet

Site 6A - Fuel Calibration Area Monitoring Well Location Map NWIRP Calverton Calverton, New York

RESOLUTION CONSULTANTS

Figure 3-2

Date: 2/6/2014

Project #: 60264489

Legend

- Monitoring Well
- Piezometer
- Supply Well
- Sediment Sample
- Surface Water
- Plume Boundary
- Fence Line
- Water

Data Source:
Plume Boundary - TetraTech, 2011

400 200 0 Feet

Southern Area Monitoring and Piezometer Well Location Map
NWIRP Calverton
Calverton, New York

Figure 3-3
Date: 2/6/2014
Project #: 60264489

NAVFAC
RESOLUTION CONSULTANTS

File: \\usnycs01\data\work\AECOM work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated 20140206\Figure 3-3 Monitoring Well Location Map Southern Area.mxd

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 3-4 Staff Gauge Location Map.mxd

NAVFAC

Legend

Staff Gauge

Water

Fence Line

N W E S

400 200 0 Feet

Staff Gauge Location Map
NWIRP Calverton
Calverton, New York

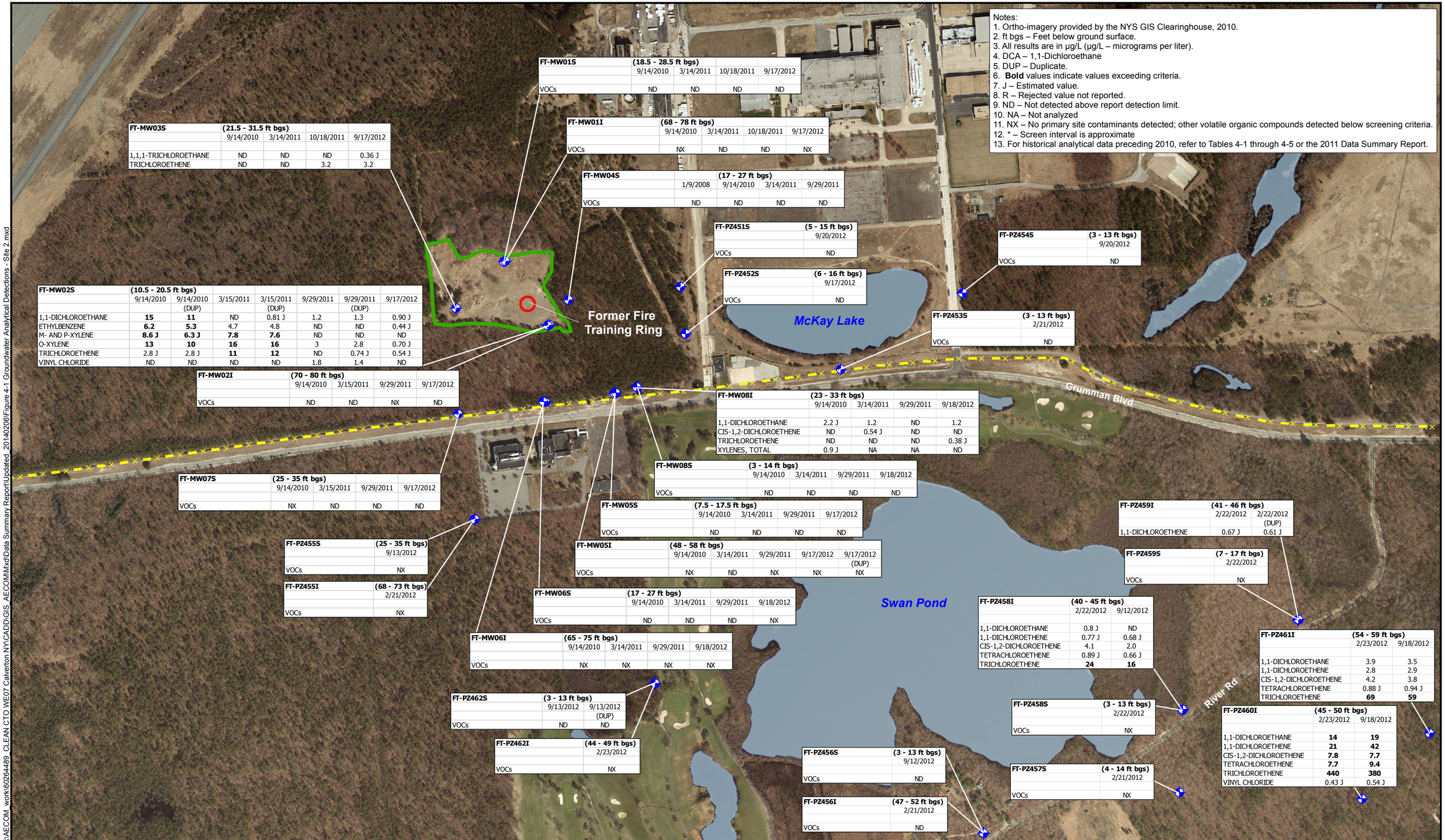
RESOLUTION CONSULTANTS

Figure 3-4

Date: 2/6/2014

Project #: 60264489

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.



FT-MW01S	(18.5 - 28.5 ft bgs)			
	9/14/2010	3/14/2011	10/18/2011	9/17/2012
VOCs	ND	ND	ND	ND

FT-MW03S	(21.5 - 31.5 ft bgs)			
	9/14/2010	3/14/2011	10/18/2011	9/17/2012
1,1,1-TRICHLOROETHANE	ND	ND	ND	0.36 J
TRICHLOROETHENE	ND	ND	3.2	3.2

FT-MW01I	(68 - 78 ft bgs)			
	9/14/2010	3/14/2011	10/18/2011	9/17/2012
VOCs	NX	ND	ND	NX

FT-MW04S	(17 - 27 ft bgs)			
	1/9/2008	9/14/2010	3/14/2011	9/29/2011
VOCs	ND	ND	ND	ND

FT-PZ451S	(5 - 15 ft bgs)
	9/20/2012
VOCs	ND

FT-PZ452S	(6 - 16 ft bgs)
	9/17/2012
VOCs	ND

FT-PZ454S	(3 - 13 ft bgs)
	9/20/2012
VOCs	ND

FT-PZ453S	(3 - 13 ft bgs)
	2/21/2012
VOCs	ND

FT-MW02S	(10.5 - 20.5 ft bgs)						
	9/14/2010	9/14/2010 (DUP)	3/15/2011	3/15/2011 (DUP)	9/29/2011	9/29/2011 (DUP)	9/17/2012
1,1-DICHLOROETHANE	**15**	**11**	ND	0.81 J	1.2	1.3	0.90 J
ETHYLBENZENE	**6.2**	**5.3**	4.7	4.8	ND	ND	0.44 J
M- AND P-XYLENE	**8.6 J**	**6.3 J**	**7.8**	**7.6**	ND	ND	ND
O-XYLENE	**13**	**10**	**16**	**16**	3	2.8	0.70 J
TRICHLOROETHENE	2.8 J	2.8 J	**11**	**12**	ND	0.74 J	0.54 J
VINYL CHLORIDE	ND	ND	ND	ND	1.8	1.4	ND

FT-MW02I	(70 - 80 ft bgs)			
	9/14/2010	3/15/2011	9/29/2011	9/17/2012
VOCs	ND	ND	NX	ND

FT-MW08I	(23 - 33 ft bgs)			
	9/14/2010	3/14/2011	9/29/2011	9/18/2012
1,1-DICHLOROETHANE	2.2 J	1.2	ND	1.2
CIS-1,2-DICHLOROETHENE	ND	0.54 J	ND	ND
TRICHLOROETHENE	ND	ND	ND	0.38 J
XYLENES, TOTAL	0.9 J	NA	NA	ND

FT-MW08S	(3 - 14 ft bgs)			
	9/14/2010	3/14/2011	9/29/2011	9/18/2012
VOCs	ND	ND	ND	ND

FT-MW07S	(25 - 35 ft bgs)			
	9/14/2010	3/15/2011	9/29/2011	9/17/2012
VOCs	NX	ND	ND	ND

FT-MW05S	(7.5 - 17.5 ft bgs)			
	9/14/2010	3/14/2011	9/29/2011	9/17/2012
VOCs	ND	ND	ND	ND

FT-PZ459I	(41 - 46 ft bgs)	
	2/22/2012	2/22/2012 (DUP)
1,1-DICHLOROETHENE	0.67 J	0.61 J

FT-PZ455S	(25 - 35 ft bgs)
	9/13/2012
VOCs	NX

FT-MW05I	(48 - 58 ft bgs)				
	9/14/2010	3/14/2011	9/29/2011	9/17/2012	9/17/2012 (DUP)
VOCs	NX	ND	NX	NX	NX

FT-PZ459S	(7 - 17 ft bgs)
	2/22/2012
VOCs	NX

FT-PZ455I	(68 - 73 ft bgs)
	2/21/2012
VOCs	NX

FT-MW06S	(17 - 27 ft bgs)			
	9/14/2010	3/14/2011	9/29/2011	9/18/2012
VOCs	ND	ND	ND	NX

FT-PZ458I	(40 - 45 ft bgs)	
	2/22/2012	9/12/2012
1,1-DICHLOROETHANE	0.8 J	ND
1,1-DICHLOROETHENE	0.77 J	0.68 J
CIS-1,2-DICHLOROETHENE	4.1	2.0
TETRACHLOROETHENE	0.89 J	0.66 J
TRICHLOROETHENE	**24**	**16**

FT-PZ461I	(54 - 59 ft bgs)	
	2/23/2012	9/18/2012
1,1-DICHLOROETHANE	3.9	3.5
1,1-DICHLOROETHENE	2.8	2.9
CIS-1,2-DICHLOROETHENE	4.2	3.8
TETRACHLOROETHENE	0.88 J	0.94 J
TRICHLOROETHENE	**69**	**59**

FT-MW06I	(65 - 75 ft bgs)			
	9/14/2010	3/14/2011	9/29/2011	9/18/2012
VOCs	NX	NX	NX	NX

FT-PZ462S	(3 - 13 ft bgs)	
	9/13/2012	9/13/2012 (DUP)
VOCs	ND	ND

FT-PZ458S	(3 - 13 ft bgs)
	2/22/2012
VOCs	NX

FT-PZ460I	(45 - 50 ft bgs)	
	2/23/2012	9/18/2012
1,1-DICHLOROETHANE	**14**	**19**
1,1-DICHLOROETHENE	**21**	**42**
CIS-1,2-DICHLOROETHENE	**7.8**	**7.7**
TETRACHLOROETHENE	**7.7**	**9.4**
TRICHLOROETHENE	**440**	**380**
VINYL CHLORIDE	0.43 J	0.54 J

FT-PZ462I	(44 - 49 ft bgs)
	2/23/2012
VOCs	NX

FT-PZ456S	(3 - 13 ft bgs)
	9/12/2012
VOCs	ND

FT-PZ457S	(4 - 14 ft bgs)
	2/21/2012
VOCs	NX

FT-PZ456I	(47 - 52 ft bgs)
	2/21/2012
VOCs	ND

Legend

- Monitoring Well/Piezometer
- Fence Line
- Site Boundary
- Water
- Former Fire Training Ring

N W E S

400 200 0 Feet

Groundwater Analytical Detections
Site 2 - Fire Training Area
NWIRP Calverton
Calverton, New York

Figure 4-1

Date: 2/6/2014

Project #: 60264489

RESOLUTION CONSULTANTS

NAVFAC

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NYCADD\GIS_AECOM\mxd\Data Summary Report\Updated_20140206\Figure 4-1 Groundwater Analytical Detections - Site 2.mxd

Ortho-Imagery provided by the NYS GIS Clearinghouse, 2010.

Former Fire Training Ring

FT-MW01S 39.55
FT-MW01I 39.48
FT-MW03S 39.57
FT-MW02S 39.11
FT-MW02I 39.14
FT-MW06S 38.88
FT-MW08I 38.28
FT-MW08S 38.10
FT-MW06I 38.93
FT-MW07S 39.21
FT-MW05I 39.11
FT-MW05S 38.55
FT-PZ455I 38.77
FT-PZ455S 38.65
FT-PZ451S 38.66
FT-PZ452S NA
FT-10 38.20
FT-PZ453S 37.66
FT-PZ454S 37.43
ET-MW01S
FT-11 Dry
SA-MW130S
SA-MW130I
SA-PZ149I1
SA-PZ-151I1
SA-PZ-408
SA-PZ-153I1
SA-PZ-156I
SA-PZ138I1
SA-PZ157I
SA-PZ-159I
SA-PZ139I
SA-PZ136I
SA-PZ160I
SA-PZ-162I
SA-PZ137I
SA-MW126S
SA-MW126I
SA-PZ135I
SA-TW413
SA-PZ-133I1
SA-MW127I
SA-MW127S
SA-PZ-170I
SA-PZ163I
SA-PZ134I
SA-MW127D
SA-PZ-133I
SA-PZ144I
SA-PZ144S
SA-PZ-146
FT-PZ459I 33.1
FT-PZ459S 32.99
FT-PZ462I 36.6
FT-PZ462S 36.62
FT-PZ458I 33.26
FT-PZ458S 34.17
FT-PZ461I 30.73
FT-13 36.10
FT-12 36.76
FT-PZ457S 34.09
FT-PZ460I 32.17
FT-PZ456S 35.59
FT-PZ456I 35.51

McKay Lake
Swan Pond
Grumman Blvd
River Rd

39 38 37 36 35 34 33 32 31

Legend

- Monitoring Well/Piezometer
- Staff Gauge
- Site Boundary
- Former Fire Training Ring
- Fence Line
- Water
- Groundwater Contour (Feet MSL)
- 36.62 Groundwater Elevation (Feet MSL)
- Flow Direction

400 200 0 Feet

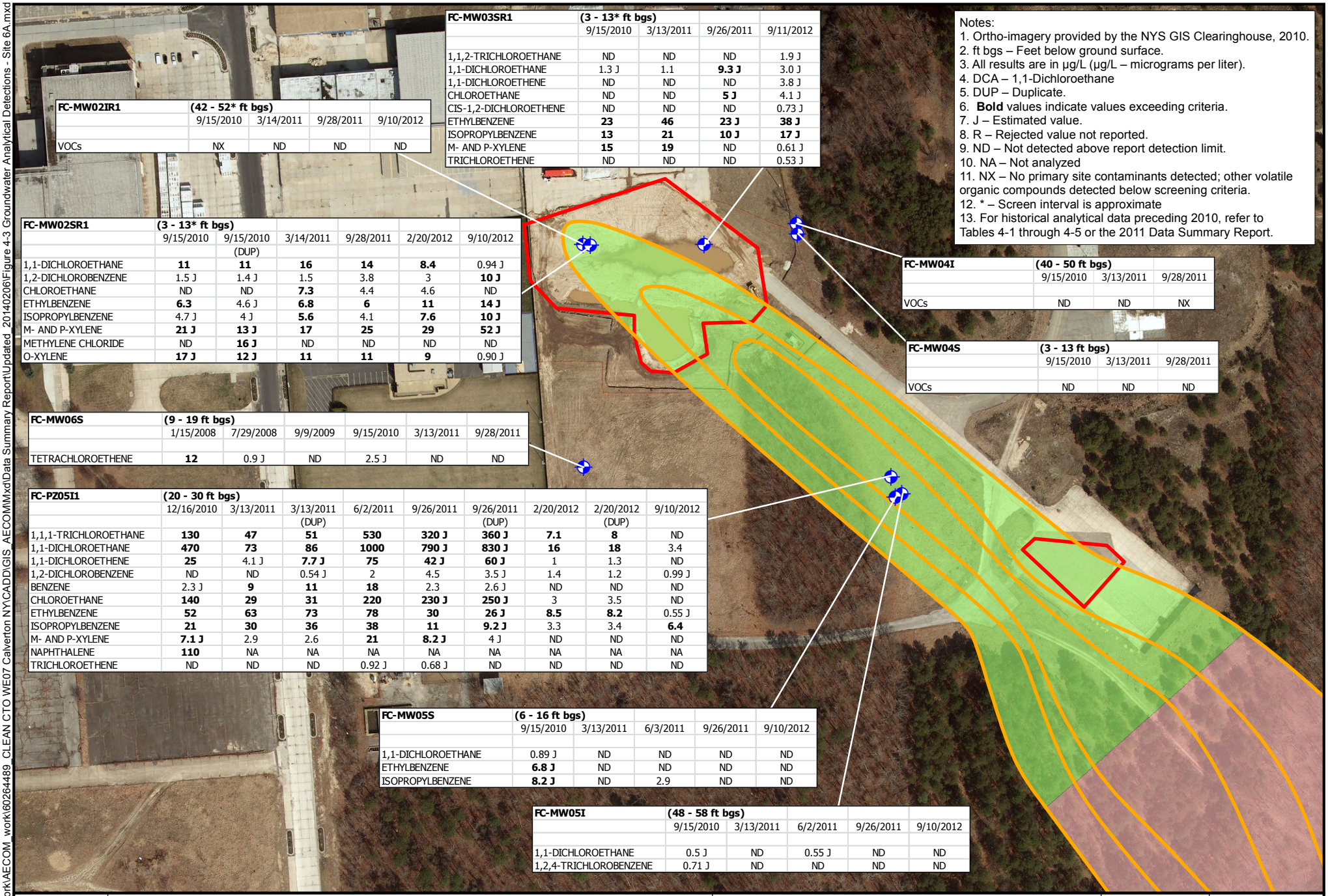
Groundwater Contours
September 14, 2012
Site 2 - Fire Training Area
NWIRP Calverton
Calverton, New York

Figure 4-2
Date: 2/6/2014
Project #: 60264489

RESOLUTION CONSULTANTS

NAVFAC

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\mxd\Data Summary Report\Updated_20140206\Figure 4-2 Groundwater Contours Map September 14 2012 Site 2.mxd



FC-MW02IR1	(42 - 52* ft bgs)			
	9/15/2010	3/14/2011	9/28/2011	9/10/2012
VOCs	NX	ND	ND	ND

FC-MW03SR1	(3 - 13* ft bgs)			
	9/15/2010	3/13/2011	9/26/2011	9/11/2012
1,1,2-TRICHLOROETHANE	ND	ND	ND	1.9 J
1,1-DICHLOROETHANE	1.3 J	1.1	**9.3 J**	3.0 J
1,1-DICHLOROETHENE	ND	ND	ND	3.8 J
CHLOROETHANE	ND	ND	**5 J**	4.1 J
CIS-1,2-DICHLOROETHENE	ND	ND	ND	0.73 J
ETHYLBENZENE	**23**	**46**	**23 J**	**38 J**
ISOPROPYLBENZENE	**13**	**21**	**10 J**	**17 J**
M- AND P-XYLENE	**15**	**19**	ND	0.61 J
TRICHLOROETHENE	ND	ND	ND	0.53 J

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.

FC-MW02SR1	(3 - 13* ft bgs)					
	9/15/2010	9/15/2010 (DUP)	3/14/2011	9/28/2011	2/20/2012	9/10/2012
1,1-DICHLOROETHANE	**11**	**11**	**16**	**14**	**8.4**	0.94 J
1,2-DICHLOROBENZENE	1.5 J	1.4 J	1.5	3.8	3	**10 J**
CHLOROETHANE	ND	ND	**7.3**	4.4	4.6	ND
ETHYLBENZENE	**6.3**	4.6 J	**6.8**	**6**	**11**	**14 J**
ISOPROPYLBENZENE	4.7 J	4 J	**5.6**	4.1	**7.6**	**10 J**
M- AND P-XYLENE	**21 J**	**13 J**	**17**	**25**	**29**	**52 J**
METHYLENE CHLORIDE	ND	**16 J**	ND	ND	ND	ND
O-XYLENE	**17 J**	**12 J**	**11**	**11**	**9**	0.90 J

FC-MW04I	(40 - 50 ft bgs)		
	9/15/2010	3/13/2011	9/28/2011
VOCs	ND	ND	NX

FC-MW04S	(3 - 13 ft bgs)		
	9/15/2010	3/13/2011	9/28/2011
VOCs	ND	ND	ND

FC-MW06S	(9 - 19 ft bgs)					
	1/15/2008	7/29/2008	9/9/2009	9/15/2010	3/13/2011	9/28/2011
TETRACHLOROETHENE	**12**	0.9 J	ND	2.5 J	ND	ND

FC-PZ05I1	(20 - 30 ft bgs)								
	12/16/2010	3/13/2011	3/13/2011 (DUP)	6/2/2011	9/26/2011	9/26/2011 (DUP)	2/20/2012	2/20/2012 (DUP)	9/10/2012
1,1,1-TRICHLOROETHANE	**130**	**47**	**51**	**530**	**320 J**	**360 J**	**7.1**	**8**	ND
1,1-DICHLOROETHANE	**470**	**73**	**86**	**1000**	**790 J**	**830 J**	**16**	**18**	3.4
1,1-DICHLOROETHENE	**25**	4.1 J	**7.7 J**	**75**	**42 J**	**60 J**	1	1.3	ND
1,2-DICHLOROBENZENE	ND	ND	0.54 J	2	4.5	3.5 J	1.4	1.2	0.99 J
BENZENE	2.3 J	**9**	**11**	**18**	2.3	2.6 J	ND	ND	ND
CHLOROETHANE	**140**	**29**	**31**	**220**	**230 J**	**250 J**	3	3.5	ND
ETHYLBENZENE	**52**	**63**	**73**	**78**	**30**	**26 J**	**8.5**	**8.2**	0.55 J
ISOPROPYLBENZENE	**21**	**30**	**36**	**38**	**11**	**9.2 J**	3.3	3.4	**6.4**
M- AND P-XYLENE	**7.1 J**	2.9	2.6	**21**	**8.2 J**	4 J	ND	ND	ND
NAPHTHALENE	**110**	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	ND	ND	ND	0.92 J	0.68 J	ND	ND	ND	ND

FC-MW05S	(6 - 16 ft bgs)				
	9/15/2010	3/13/2011	6/3/2011	9/26/2011	9/10/2012
1,1-DICHLOROETHANE	0.89 J	ND	ND	ND	ND
ETHYLBENZENE	**6.8 J**	ND	ND	ND	ND
ISOPROPYLBENZENE	**8.2 J**	ND	2.9	ND	ND

FC-MW05I	(48 - 58 ft bgs)				
	9/15/2010	3/13/2011	6/2/2011	9/26/2011	9/10/2012
1,1-DICHLOROETHANE	0.5 J	ND	0.55 J	ND	ND
1,2,4-TRICHLOROBENZENE	0.71 J	ND	ND	ND	ND

Legend

- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Excavation Area 2009/2010
- Fence Line Area
- Source Area

Contour Lines Source: Tetra Tech (2011), amended by 2012 data

N S E W

200 100 0 Feet

Groundwater Analytical Detections
Site 6A - Fuel Calibration Area
NWIRP Calverton
Calverton, New York

NAVFAC

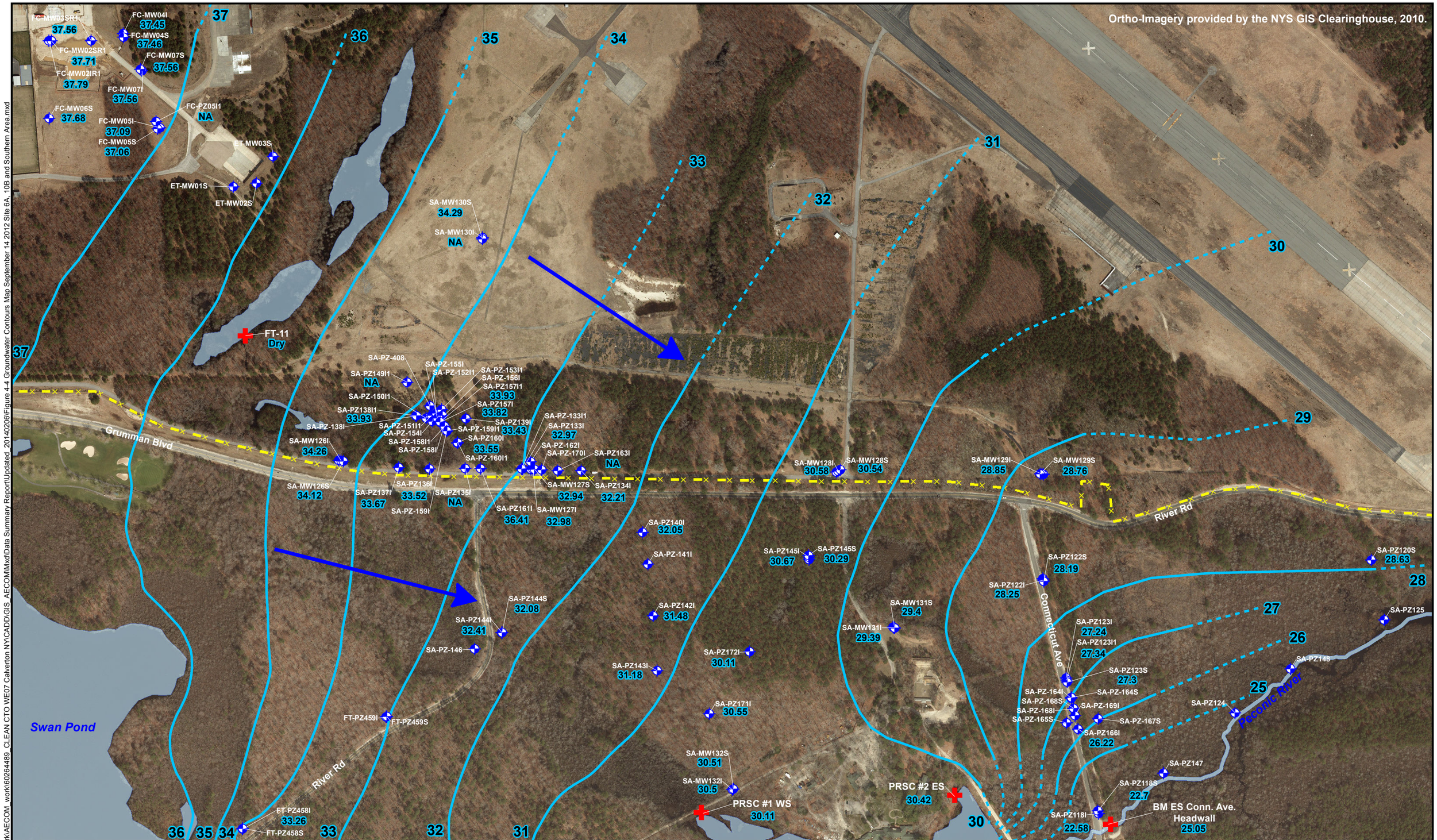
RESOLUTION CONSULTANTS

Figure 4-3

Date: 2/6/2014

Project #: 60264489

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 4-3 Groundwater Analytical Detections - Site 6A.mxd



File: \\usnyvs01\data\work\AECOM work\60264489 CLEAN CTO WE07 Calverton NY\CADD\GIS AECOM\Mxd\Data Summary Report\Updated 20140206\Figure 4-4 Groundwater Contours Map September 14 2012 Site 6A, 10B and Southern Area.mxd

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Legend

- Monitoring Well/Piezometer
- Staff Gauge
- Site Boundary
- Former Fire Training Ring
- Fence Line
- Water
- Groundwater Contour (Feet MSL)
- 32.41 Groundwater Elevation (Feet MSL)
- Flow Direction

N W E S

400 200 0 Feet

Groundwater Contours
September 14, 2012
Site 6A and Southern Area
NWIRP Calverton
Calverton, New York

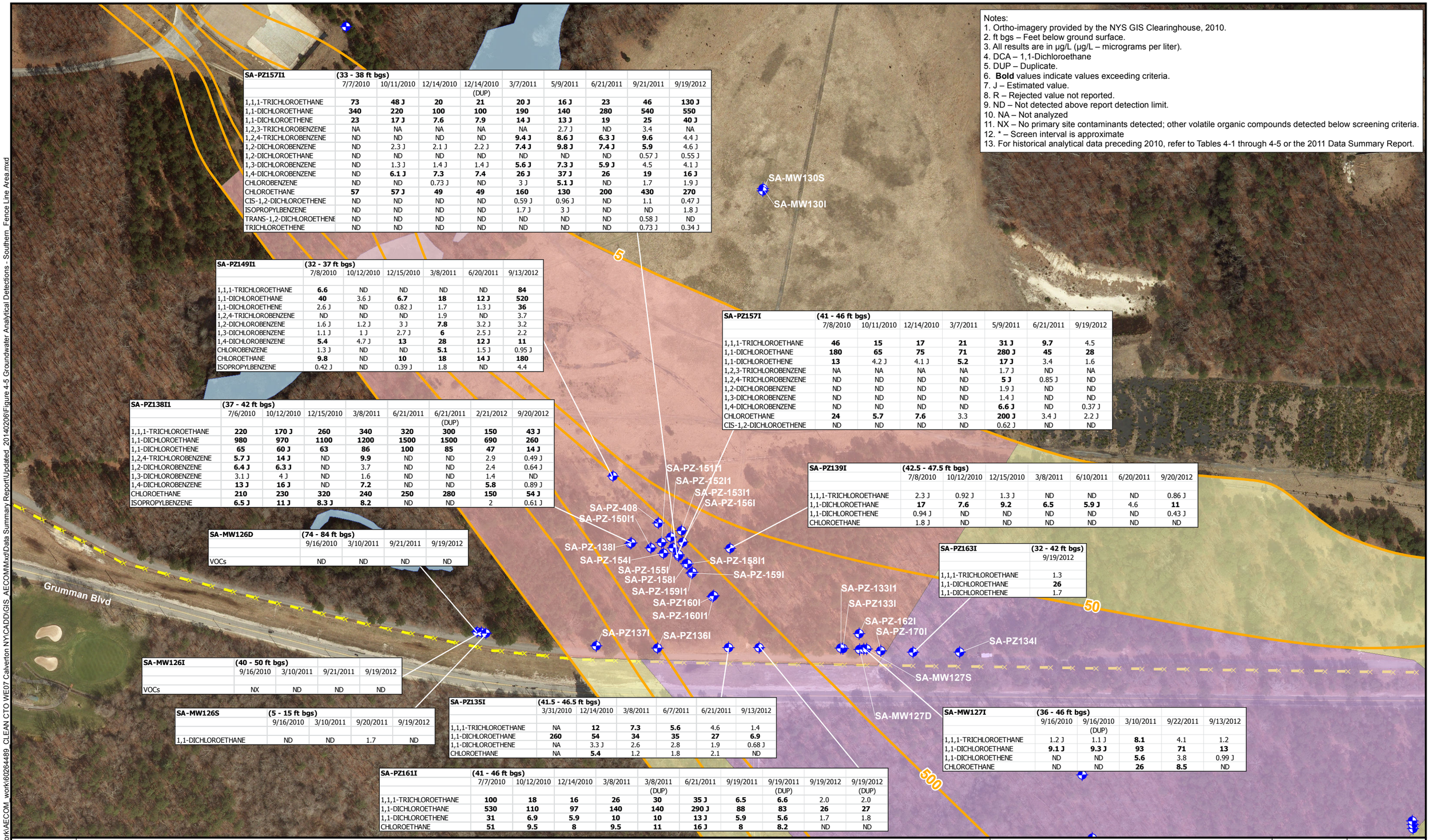
RESOLUTION CONSULTANTS

Figure 4-4

Date: 2/6/2014

Project #: 60264489

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.



SA-PZ157I1	(33 - 38 ft bgs)								
	7/7/2010	10/11/2010	12/14/2010	12/14/2010 (DUP)	3/7/2011	5/9/2011	6/21/2011	9/21/2011	9/19/2012
1,1,1-TRICHLOROETHANE	**73**	**48 J**	**20**	**21**	**20 J**	**16 J**	**23**	**46**	**130 J**
1,1-DICHLOROETHANE	**340**	**220**	**100**	**100**	**190**	**140**	**280**	**540**	**550**
1,1-DICHLOROETHENE	**23**	**17 J**	**7.6**	**7.9**	**14 J**	**13 J**	**19**	**25**	**40 J**
1,2,3-TRICHLOROBENZENE	NA	NA	NA	NA	NA	2.7 J	ND	3.4	NA
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	**9.4 J**	**8.6 J**	**6.3 J**	**9.6**	4.4 J
1,2-DICHLOROBENZENE	ND	2.3 J	2.1 J	2.2 J	**7.4 J**	**9.8 J**	**7.4 J**	**5.9**	4.6 J
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	0.57 J	0.55 J
1,3-DICHLOROBENZENE	ND	1.3 J	1.4 J	1.4 J	**5.6 J**	**7.3 J**	**5.9 J**	4.5	4.1 J
1,4-DICHLOROBENZENE	ND	**6.1 J**	**7.3**	**7.4**	**26 J**	**37 J**	**26**	**19**	**16 J**
CHLOROBENZENE	ND	ND	0.73 J	ND	3 J	**5.1 J**	ND	1.7	1.9 J
CHLOROETHANE	**57**	**57 J**	**49**	**49**	**160**	**130**	**200**	**430**	**270**
CIS-1,2-DICHLOROETHENE	ND	ND	ND	ND	0.59 J	0.96 J	ND	1.1	0.47 J
ISOPROPYLBENZENE	ND	ND	ND	ND	1.7 J	3 J	ND	ND	1.8 J
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	0.58 J	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	0.73 J	0.34 J

SA-PZ149I1	(32 - 37 ft bgs)					
	7/8/2010	10/12/2010	12/15/2010	3/8/2011	6/20/2011	9/13/2012
1,1,1-TRICHLOROETHANE	**6.6**	ND	ND	ND	ND	**84**
1,1-DICHLOROETHANE	**40**	3.6 J	**6.7**	**18**	**12 J**	**520**
1,1-DICHLOROETHENE	2.6 J	ND	0.82 J	1.7	1.3 J	**36**
1,2,4-TRICHLOROBENZENE	ND	ND	ND	1.9	ND	3.7
1,2-DICHLOROBENZENE	1.6 J	1.2 J	3 J	**7.8**	3.2 J	3.2
1,3-DICHLOROBENZENE	1.1 J	1 J	2.7 J	**6**	2.5 J	2.2
1,4-DICHLOROBENZENE	**5.4**	4.7 J	**13**	**28**	**12 J**	**11**
CHLOROBENZENE	1.3 J	ND	ND	**5.1**	1.5 J	0.95 J
CHLOROETHANE	**9.8**	ND	**10**	**18**	**14 J**	**180**
ISOPROPYLBENZENE	0.42 J	ND	0.39 J	1.8	ND	4.4

SA-PZ157I	(41 - 46 ft bgs)						
	7/8/2010	10/11/2010	12/14/2010	3/7/2011	5/9/2011	6/21/2011	9/19/2012
1,1,1-TRICHLOROETHANE	**46**	**15**	**17**	**21**	**31 J**	**9.7**	4.5
1,1-DICHLOROETHANE	**180**	**65**	**75**	**71**	**280 J**	**45**	**28**
1,1-DICHLOROETHENE	**13**	4.2 J	4.1 J	**5.2**	**17 J**	3.4	1.6
1,2,3-TRICHLOROBENZENE	NA	NA	NA	NA	1.7 J	ND	NA
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	**5 J**	0.85 J	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	1.9 J	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	1.4 J	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	**6.6 J**	ND	0.37 J
CHLOROETHANE	**24**	**5.7**	**7.6**	3.3	**200 J**	3.4 J	2.2 J
CIS-1,2-DICHLOROETHENE	ND	ND	ND	ND	0.62 J	ND	ND

SA-PZ138I1	(37 - 42 ft bgs)							
	7/6/2010	10/12/2010	12/15/2010	3/8/2011	6/21/2011	6/21/2011 (DUP)	2/21/2012	9/20/2012
1,1,1-TRICHLOROETHANE	**220**	**170 J**	**260**	**340**	**320**	**300**	**150**	**43 J**
1,1-DICHLOROETHANE	**980**	**970**	**1100**	**1200**	**1500**	**1500**	**690**	**260**
1,1-DICHLOROETHENE	**65**	**60 J**	**63**	**86**	**100**	**85**	**47**	**14 J**
1,2,4-TRICHLOROBENZENE	**5.7 J**	**14 J**	ND	**9.9**	ND	ND	2.9	0.49 J
1,2-DICHLOROBENZENE	**6.4 J**	**6.3 J**	ND	3.7	ND	ND	2.4	0.64 J
1,3-DICHLOROBENZENE	3.1 J	4 J	ND	1.6	ND	ND	1.4	ND
1,4-DICHLOROBENZENE	**13 J**	**16 J**	ND	**7.2**	ND	ND	**5.8**	0.89 J
CHLOROETHANE	**210**	**230**	**320**	**240**	**250**	**280**	**150**	**54 J**
ISOPROPYLBENZENE	**6.5 J**	**11 J**	**8.3 J**	**8.2**	ND	ND	2	0.61 J

SA-PZ139I	(42.5 - 47.5 ft bgs)						
	7/8/2010	10/12/2010	12/15/2010	3/8/2011	6/10/2011	6/20/2011	9/20/2012
1,1,1-TRICHLOROETHANE	2.3 J	0.92 J	1.3 J	ND	ND	ND	0.86 J
1,1-DICHLOROETHANE	**17**	**7.6**	**9.2**	**6.5**	**5.9 J**	4.6	**11**
1,1-DICHLOROETHENE	0.94 J	ND	ND	ND	ND	ND	0.43 J
CHLOROETHANE	1.8 J	ND	ND	ND	ND	ND	ND

SA-MW126D	(74 - 84 ft bgs)			
	9/16/2010	3/10/2011	9/21/2011	9/19/2012
VOCs	ND	ND	ND	ND

SA-PZ163I	(32 - 42 ft bgs)
	9/19/2012
1,1,1-TRICHLOROETHANE	1.3
1,1-DICHLOROETHANE	**26**
1,1-DICHLOROETHENE	1.7

SA-MW126I	(40 - 50 ft bgs)			
	9/16/2010	3/10/2011	9/21/2011	9/19/2012
VOCs	NX	ND	ND	ND

SA-MW126S	(5 - 15 ft bgs)			
	9/16/2010	3/10/2011	9/20/2011	9/19/2012
1,1-DICHLOROETHANE	ND	ND	1.7	ND

SA-PZ135I	(41.5 - 46.5 ft bgs)					
	3/31/2010	12/14/2010	3/8/2011	6/7/2011	6/21/2011	9/13/2012
1,1,1-TRICHLOROETHANE	NA	**12**	**7.3**	**5.6**	4.6	1.4
1,1-DICHLOROETHANE	**260**	**54**	**34**	**35**	**27**	**6.9**
1,1-DICHLOROETHENE	NA	3.3 J	2.6	2.8	1.9	0.68 J
CHLOROETHANE	NA	**5.4**	1.2	1.8	2.1	ND

SA-MW127I	(36 - 46 ft bgs)				
	9/16/2010	9/16/2010 (DUP)	3/10/2011	9/22/2011	9/13/2012
1,1,1-TRICHLOROETHANE	1.2 J	1.1 J	**8.1**	4.1	1.2
1,1-DICHLOROETHANE	**9.1 J**	**9.3 J**	**93**	**71**	**13**
1,1-DICHLOROETHENE	ND	ND	**5.6**	3.8	0.99 J
CHLOROETHANE	ND	ND	**26**	**8.5**	ND

SA-PZ161I	(41 - 46 ft bgs)									
	7/7/2010	10/12/2010	12/14/2010	3/8/2011	3/8/2011 (DUP)	6/21/2011	9/19/2011	9/19/2011 (DUP)	9/19/2012	9/19/2012 (DUP)
1,1,1-TRICHLOROETHANE	**100**	**18**	**16**	**26**	**30**	**35 J**	**6.5**	**6.6**	2.0	2.0
1,1-DICHLOROETHANE	**530**	**110**	**97**	**140**	**140**	**290 J**	**88**	**83**	**26**	**27**
1,1-DICHLOROETHENE	**31**	**6.9**	**5.9**	**10**	**10**	**13 J**	**5.9**	**5.6**	1.7	1.8
CHLOROETHANE	**51**	**9.5**	**8**	**9.5**	**11**	**16 J**	**8**	**8.2**	ND	ND

Legend

- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

Contour Lines Source: Tetra Tech (2011), amended by 2012 data

N W E S

200 100 0 Feet

Groundwater Analytical Detections Southern/Fence Line Area NWIRP Calverton Calverton, New York

NAVFAC

RESOLUTION CONSULTANTS

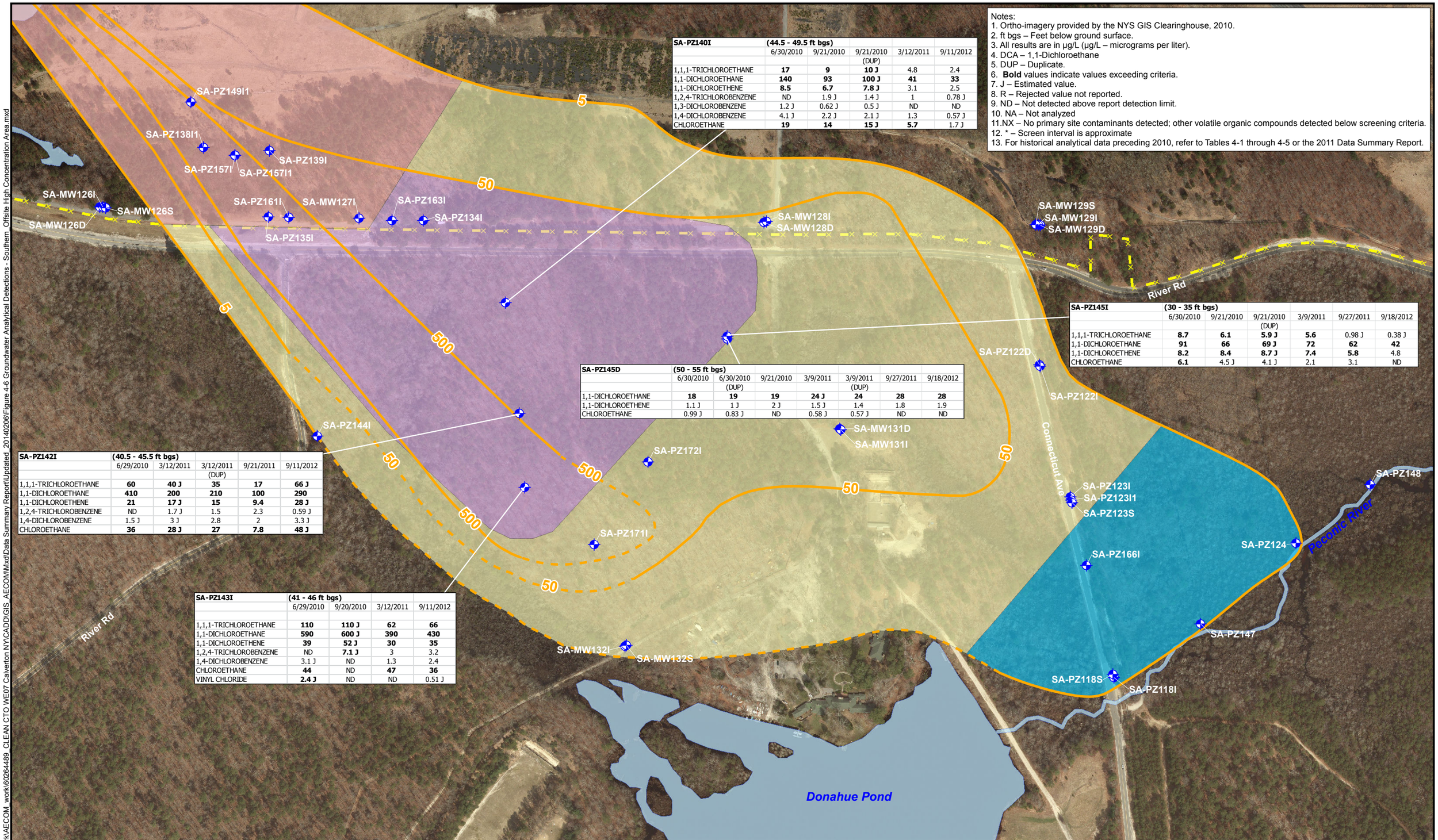
Figure 4-5

Date: 2/6/2014

Project #: 60264489

File: \\usnycs01\data\work\AECOM work\60264489 CLEAN CTO WE07 Calverton NY\CADD\GIS AECOM\mxd\Data Summary Report\Updated 20140206\Figure 4-5 Groundwater Analytical Detections - Southern Fence Line Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.



SA-PZ140I	(44.5 - 49.5 ft bgs)				
	6/30/2010	9/21/2010	9/21/2010 (DUP)	3/12/2011	9/11/2012
1,1,1-TRICHLOROETHANE	**17**	**9**	**10 J**	4.8	2.4
1,1-DICHLOROETHANE	**140**	**93**	**100 J**	**41**	**33**
1,1-DICHLOROETHENE	**8.5**	**6.7**	**7.8 J**	3.1	2.5
1,2,4-TRICHLOROBENZENE	ND	1.9 J	1.4 J	1	0.78 J
1,3-DICHLOROBENZENE	1.2 J	0.62 J	0.5 J	ND	ND
1,4-DICHLOROBENZENE	4.1 J	2.2 J	2.1 J	1.3	0.57 J
CHLOROETHANE	**19**	**14**	**15 J**	**5.7**	1.7 J

SA-PZ145I	(30 - 35 ft bgs)					
	6/30/2010	9/21/2010	9/21/2010 (DUP)	3/9/2011	9/27/2011	9/18/2012
1,1,1-TRICHLOROETHANE	**8.7**	**6.1**	**5.9 J**	**5.6**	0.98 J	0.38 J
1,1-DICHLOROETHANE	**91**	**66**	**69 J**	**72**	**62**	**42**
1,1-DICHLOROETHENE	**8.2**	**8.4**	**8.7 J**	**7.4**	**5.8**	4.8
CHLOROETHANE	**6.1**	4.5 J	4.1 J	2.1	3.1	ND

SA-PZ145D	(50 - 55 ft bgs)						
	6/30/2010	6/30/2010 (DUP)	9/21/2010	3/9/2011	3/9/2011 (DUP)	9/27/2011	9/18/2012
1,1-DICHLOROETHANE	**18**	**19**	**19**	**24 J**	**24**	**28**	**28**
1,1-DICHLOROETHENE	1.1 J	1 J	2 J	1.5 J	1.4	1.8	1.9
CHLOROETHANE	0.99 J	0.83 J	ND	0.58 J	0.57 J	ND	ND

SA-PZ142I	(40.5 - 45.5 ft bgs)				
	6/29/2010	3/12/2011	3/12/2011 (DUP)	9/21/2011	9/11/2012
1,1,1-TRICHLOROETHANE	**60**	**40 J**	**35**	**17**	**66 J**
1,1-DICHLOROETHANE	**410**	**200**	**210**	**100**	**290**
1,1-DICHLOROETHENE	**21**	**17 J**	**15**	**9.4**	**28 J**
1,2,4-TRICHLOROBENZENE	ND	1.7 J	1.5	2.3	0.59 J
1,4-DICHLOROBENZENE	1.5 J	3 J	2.8	2	3.3 J
CHLOROETHANE	**36**	**28 J**	**27**	**7.8**	**48 J**

SA-PZ143I	(41 - 46 ft bgs)			
	6/29/2010	9/20/2010	3/12/2011	9/11/2012
1,1,1-TRICHLOROETHANE	**110**	**110 J**	**62**	**66**
1,1-DICHLOROETHANE	**590**	**600 J**	**390**	**430**
1,1-DICHLOROETHENE	**39**	**52 J**	**30**	**35**
1,2,4-TRICHLOROBENZENE	ND	**7.1 J**	3	3.2
1,4-DICHLOROBENZENE	3.1 J	ND	1.3	2.4
CHLOROETHANE	**44**	ND	**47**	**36**
VINYL CHLORIDE	**2.4 J**	ND	ND	0.51 J

Legend

- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

Contour Lines Source: Tetra Tech (2011), amended by 2012 data

300 150 0 Feet

Groundwater Analytical Detections Southern/ Offsite High Concentration Area NWIRP Calverton Calverton, New York

Figure 4-6

Date: 2/6/2014

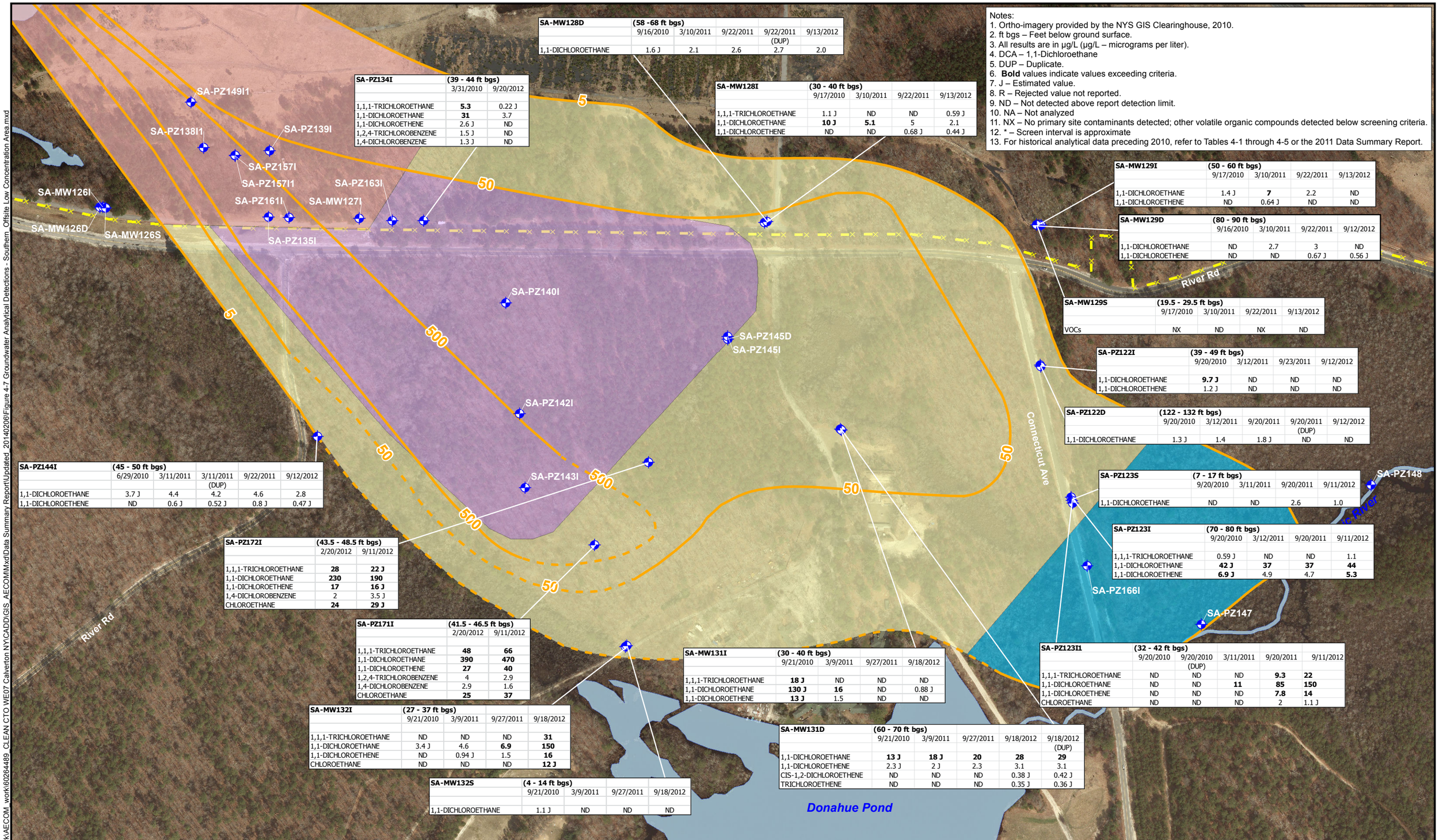
Project #: 60264489

RESOLUTION CONSULTANTS

NAVFAC

File: \\usnyxs01\data\work\AECOM work\60264489 CLEAN CTO WE07 Calverton NY\CADD\GIS AECOM\Mxd\Data Summary Report\Updated 20140206\Figure 4-6 Groundwater Analytical Detections - Southern Offsite High Concentration Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.



SA-MW128D	(58 -68 ft bgs)				
	9/16/2010	3/10/2011	9/22/2011	9/22/2011 (DUP)	9/13/2012
1,1-DICHLOROETHANE	1.6 J	2.1	2.6	2.7	2.0

SA-PZ134I	(39 - 44 ft bgs)	
	3/31/2010	9/20/2012
1,1,1-TRICHLOROETHANE	**5.3**	0.22 J
1,1-DICHLOROETHANE	**31**	3.7
1,1-DICHLOROETHENE	2.6 J	ND
1,2,4-TRICHLOROBENZENE	1.5 J	ND
1,4-DICHLOROBENZENE	1.3 J	ND

SA-MW128I	(30 - 40 ft bgs)			
	9/17/2010	3/10/2011	9/22/2011	9/13/2012
1,1,1-TRICHLOROETHANE	1.1 J	ND	ND	0.59 J
1,1-DICHLOROETHANE	**10 J**	**5.1**	5	2.1
1,1-DICHLOROETHENE	ND	ND	0.68 J	0.44 J

SA-MW129I	(50 - 60 ft bgs)			
	9/17/2010	3/10/2011	9/22/2011	9/13/2012
1,1-DICHLOROETHANE	1.4 J	**7**	2.2	ND
1,1-DICHLOROETHENE	ND	0.64 J	ND	ND

SA-MW129D	(80 - 90 ft bgs)			
	9/16/2010	3/10/2011	9/22/2011	9/12/2012
1,1-DICHLOROETHANE	ND	2.7	3	ND
1,1-DICHLOROETHENE	ND	ND	0.67 J	0.56 J

SA-MW129S	(19.5 - 29.5 ft bgs)			
	9/17/2010	3/10/2011	9/22/2011	9/13/2012
VOCs	NX	ND	NX	ND

SA-PZ122I	(39 - 49 ft bgs)			
	9/20/2010	3/12/2011	9/23/2011	9/12/2012
1,1-DICHLOROETHANE	**9.7 J**	ND	ND	ND
1,1-DICHLOROETHENE	1.2 J	ND	ND	ND

SA-PZ122D	(122 - 132 ft bgs)				
	9/20/2010	3/12/2011	9/20/2011	9/20/2011 (DUP)	9/12/2012
1,1-DICHLOROETHANE	1.3 J	1.4	1.8 J	ND	ND

SA-PZ123S	(7 - 17 ft bgs)			
	9/20/2010	3/11/2011	9/20/2011	9/11/2012
1,1-DICHLOROETHANE	ND	ND	2.6	1.0

SA-PZ123I	(70 - 80 ft bgs)			
	9/20/2010	3/12/2011	9/20/2011	9/11/2012
1,1,1-TRICHLOROETHANE	0.59 J	ND	ND	1.1
1,1-DICHLOROETHANE	**42 J**	**37**	**37**	**44**
1,1-DICHLOROETHENE	**6.9 J**	4.9	4.7	**5.3**

SA-PZ144I	(45 - 50 ft bgs)				
	6/29/2010	3/11/2011	3/11/2011 (DUP)	9/22/2011	9/12/2012
1,1-DICHLOROETHANE	3.7 J	4.4	4.2	4.6	2.8
1,1-DICHLOROETHENE	ND	0.6 J	0.52 J	0.8 J	0.47 J

SA-PZ172I	(43.5 - 48.5 ft bgs)	
	2/20/2012	9/11/2012
1,1,1-TRICHLOROETHANE	**28**	**22 J**
1,1-DICHLOROETHANE	**230**	**190**
1,1-DICHLOROETHENE	**17**	**16 J**
1,4-DICHLOROBENZENE	2	3.5 J
CHLOROETHANE	**24**	**29 J**

SA-PZ171I	(41.5 - 46.5 ft bgs)	
	2/20/2012	9/11/2012
1,1,1-TRICHLOROETHANE	**48**	**66**
1,1-DICHLOROETHANE	**390**	**470**
1,1-DICHLOROETHENE	**27**	**40**
1,2,4-TRICHLOROBENZENE	4	2.9
1,4-DICHLOROBENZENE	2.9	1.6
CHLOROETHANE	**25**	**37**

SA-MW131I	(30 - 40 ft bgs)			
	9/21/2010	3/9/2011	9/27/2011	9/18/2012
1,1,1-TRICHLOROETHANE	**18 J**	ND	ND	ND
1,1-DICHLOROETHANE	**130 J**	**16**	ND	0.88 J
1,1-DICHLOROETHENE	**13 J**	1.5	ND	ND

SA-PZ123I1	(32 - 42 ft bgs)				
	9/20/2010	9/20/2010 (DUP)	3/11/2011	9/20/2011	9/11/2012
1,1,1-TRICHLOROETHANE	ND	ND	ND	**9.3**	**22**
1,1-DICHLOROETHANE	ND	ND	**11**	**85**	**150**
1,1-DICHLOROETHENE	ND	ND	ND	**7.8**	**14**
CHLOROETHANE	ND	ND	ND	2	1.1 J

SA-MW132I	(27 - 37 ft bgs)			
	9/21/2010	3/9/2011	9/27/2011	9/18/2012
1,1,1-TRICHLOROETHANE	ND	ND	ND	**31**
1,1-DICHLOROETHANE	3.4 J	4.6	**6.9**	**150**
1,1-DICHLOROETHENE	ND	0.94 J	1.5	**16**
CHLOROETHANE	ND	ND	ND	**12 J**

SA-MW132S	(4 - 14 ft bgs)			
	9/21/2010	3/9/2011	9/27/2011	9/18/2012
1,1-DICHLOROETHANE	1.1 J	ND	ND	ND

SA-MW131D	(60 - 70 ft bgs)				
	9/21/2010	3/9/2011	9/27/2011	9/18/2012	9/18/2012 (DUP)
1,1-DICHLOROETHANE	**13 J**	**18 J**	**20**	**28**	**29**
1,1-DICHLOROETHENE	2.3 J	2 J	2.3	3.1	3.1
CIS-1,2-DICHLOROETHENE	ND	ND	ND	0.38 J	0.42 J
TRICHLOROETHENE	ND	ND	ND	0.35 J	0.36 J

Legend

- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

Contour Lines Source: Tetra Tech (2011), amended by 2012 data

N E S W

300 150 0 Feet

Groundwater Analytical Detections Southern/ Offsite Low Concentration Area NWIRP Calverton Calverton, New York

NAVFAC

RESOLUTION CONSULTANTS

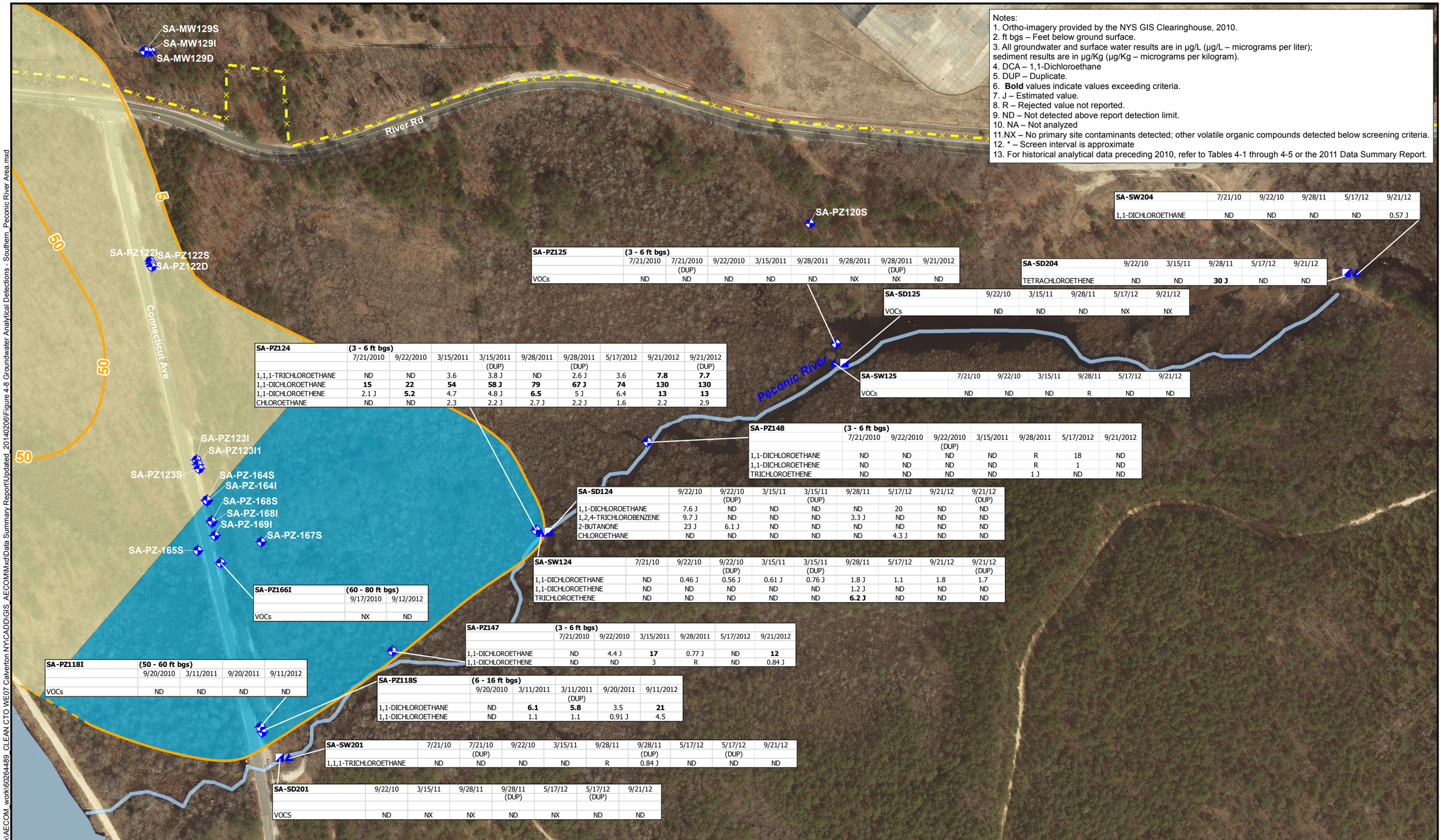
Figure 4-7

Date: 2/6/2014

Project #: 60264489

File: \\usnyxs01\data\work\AECOM work\60264489 CLEAN CTO WE07 Calverton NY\CADD\GIS AECOM\mxd\Data Summary Report\Updated 20140206\Figure 4-7 Groundwater Analytical Detections - Southern Offsite Low Concentration Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All groundwater and surface water results are in µg/L (µg/L – micrograms per liter); sediment results are in µg/Kg (µg/Kg – micrograms per kilogram).
4. DCA – 1,1-Dichloroethane
5. DUP – Duplicate.
6. **Bold** values indicate values exceeding criteria.
7. J – Estimated value.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2010, refer to Tables 4-1 through 4-5 or the 2011 Data Summary Report.



SA-PZ125	(3 - 6 ft bgs)							
	7/21/2010	7/21/2010 (DUP)	9/22/2010	3/15/2011	9/28/2011	9/28/2011	9/28/2011 (DUP)	9/21/2012
VOCs	ND	ND	ND	ND	ND	NX	NX	ND

SA-SW204	7/21/10	9/22/10	9/28/11	5/17/12	9/21/12
1,1-DICHLOROETHANE	ND	ND	ND	ND	0.57 J

SA-SD204	9/22/10	3/15/11	9/28/11	5/17/12	9/21/12
TETRACHLOROETHENE	ND	ND	**30 J**	ND	ND

SA-SD125	9/22/10	3/15/11	9/28/11	5/17/12	9/21/12
VOCs	ND	ND	ND	NX	NX

SA-SW125	7/21/10	9/22/10	3/15/11	9/28/11	5/17/12	9/21/12
VOCs	ND	ND	ND	R	ND	ND

SA-PZ124	(3 - 6 ft bgs)								
	7/21/2010	9/22/2010	3/15/2011	3/15/2011 (DUP)	9/28/2011	9/28/2011 (DUP)	5/17/2012	9/21/2012	9/21/2012 (DUP)
1,1,1-TRICHLOROETHANE	ND	ND	3.6	3.8 J	ND	2.6 J	3.6	**7.8**	**7.7**
1,1-DICHLOROETHANE	**15**	**22**	**54**	**58 J**	**79**	**67 J**	**74**	**130**	**130**
1,1-DICHLOROETHENE	2.1 J	**5.2**	4.7	4.8 J	**6.5**	5 J	6.4	**13**	**13**
CHLOROETHANE	ND	ND	2.3	2.2 J	2.7 J	2.2 J	1.6	2.2	2.9

SA-PZ148	(3 - 6 ft bgs)						
	7/21/2010	9/22/2010	9/22/2010 (DUP)	3/15/2011	9/28/2011	5/17/2012	9/21/2012
1,1-DICHLOROETHANE	ND	ND	ND	ND	R	18	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	R	1	ND
TRICHLOROETHENE	ND	ND	ND	ND	1 J	ND	ND

SA-SD124	9/22/10	9/22/10 (DUP)	3/15/11	3/15/11 (DUP)	9/28/11	5/17/12	9/21/12	9/21/12 (DUP)
1,1-DICHLOROETHANE	7.6 J	ND	ND	ND	ND	20	ND	ND
1,2,4-TRICHLOROBENZENE	9.7 J	ND	ND	ND	3.3 J	ND	ND	ND
2-BUTANONE	23 J	6.1 J	ND	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND	4.3 J	ND	ND

SA-SW124	7/21/10	9/22/10	9/22/10 (DUP)	3/15/11	3/15/11 (DUP)	9/28/11	5/17/12	9/21/12	9/21/12 (DUP)
1,1-DICHLOROETHANE	ND	0.46 J	0.56 J	0.61 J	0.76 J	1.8 J	1.1	1.8	1.7
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	1.2 J	ND	ND	ND
TRICHLOROETHENE	ND	ND	ND	ND	ND	**6.2 J**	ND	ND	ND

SA-PZ166I	(60 - 80 ft bgs)	
	9/17/2010	9/12/2012
VOCs	NX	ND

SA-PZ147	(3 - 6 ft bgs)					
	7/21/2010	9/22/2010	3/15/2011	9/28/2011	5/17/2012	9/21/2012
1,1-DICHLOROETHANE	ND	4.4 J	**17**	0.77 J	ND	**12**
1,1-DICHLOROETHENE	ND	ND	3	R	ND	0.84 J

SA-PZ118I	(50 - 60 ft bgs)			
	9/20/2010	3/11/2011	9/20/2011	9/11/2012
VOCs	ND	ND	ND	ND

SA-PZ118S	(6 - 16 ft bgs)				
	9/20/2010	3/11/2011	3/11/2011 (DUP)	9/20/2011	9/11/2012
1,1-DICHLOROETHANE	ND	**6.1**	**5.8**	3.5	**21**
1,1-DICHLOROETHENE	ND	1.1	1.1	0.91 J	4.5

SA-SW201	7/21/10	7/21/10 (DUP)	9/22/10	3/15/11	9/28/11	9/28/11 (DUP)	5/17/12	5/17/12 (DUP)	9/21/12
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	R	0.84 J	ND	ND	ND

SA-SD201	9/22/10	3/15/11	9/28/11	9/28/11 (DUP)	5/17/12	5/17/12 (DUP)	9/21/12
VOCS	ND	NX	NX	ND	NX	ND	ND

Legend

- Monitoring Well/Piezometer
- Sediment Sample
- Surface Water
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

Contour Lines Source: Tetra Tech (2011), amended by 2012 data

200 100 0 Feet

Groundwater Analytical Detections Southern/Peconic River Area NWIRP Calverton Calverton, New York

Figure 4-8

Date: 2/6/2014

Project #: 60264489

NAVFAC

RESOLUTION CONSULTANTS

File: \\usnycs01\data\work\AECOM_work\60264489_CLEAN CTO WE07 Calverton NY\CADD\GIS_AECOM\Mxd\Data Summary Report\Updated_20140206\Figure 4-8 Groundwater Analytical Detections - Southern_Peconic River Area.mxd

Appendix A

Groundwater Sample Collection Logs

RESOLUTION CONSULTANTS

Well ID FT-MW01-S

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/17/12 Time: Start 11:02 am/pm
Project No: 60264489 Finish 11:42 am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, light breeze Collector(s): K. Barbaw

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 30.2 c. Water Column (a-b) _____ Casing Diameter/Material

b. Water Table Depth 23.15 d. Calculated Water Column Volume _____ 4" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

00030797

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1110	2.0	15.42	4.05	141	21.10	220.2	1.51	~250	23.42	clear, no odor
1115	3.5	15.20	4.08	140	21.67	244.5	1.99	~250	23.41	" "
1120	5.0	15.08	4.04	140	21.94	259.4	2.06	~250	23.42	" "
1125	6.0	14.91	4.05	140	22.05	269.0	3.09	~280	23.42	" "
1130	7.0	14.82	4.04	140	22.07	274.1	2.[illegible]	~250	23.42	" "
1135	9.0	14.83	4.05	140	22.04	278.4	2.11	~250	" "	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FT-MW01S-20120917	40mL VOA	3	HCl	VOCs	1138

Comments _____

Signature _____ Date 9/17/12

RESOLUTION CONSULTANTS

Well ID: FTMW01I

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/17/12 Time: Start 11:12 am/pm
Project No: 60264489 Finish 11:53 am/pm
Site Location: Calverton
Weather Conds: ~70°F, Sunny, light wind Collector(s): Jessica Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 79.8 c. Water Column (a-b) _____ Casing Diameter/Material 4" PVC

b. Water Table Depth 23.17 d. Calculated Water Column Volume _____

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	0241124
	Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:15	<1	17.78	5.50	56	12.51	-48.7	2.57	~300	23.40	clear/no odor
11:20	2	15.72	5.32	36	12.59	-40.9	8.17	~300	23.47	" "
11:25	3.5	14.88	5.14	34	13.79	-36.8	11.6	~300	23.52	" "
11:30	5	14.88	5.10	33	14.06	-30.1	12.8	300	23.52	" "
11:35	7	15.15	5.04	33	14.26	-27.5	12.2	300	23.56	" "
11:40	8	15.19	5.02	33	14.25	-26.1	10.20	300	23.57	" "
11:45	10	15.10	4.98	33	14.31	-25.4	6.24	300	23.58	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FT-MW01I-20120917	40 mL VOA	3	HCl	VOCs	1150

Comments _____

Signature J Ehlen Date 9/17/12

RESOLUTION CONSULTANTS

Well ID: PTMW-025

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/17/12 | Time: Start 1030 am/pm | Finish 1120 am/pm

Project No:

Site Location:

Weather Conds: Sunny 75° | Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 22.6 | c. Water Column (a-b) 7.29 | Casing Diameter/Material

b. Water Table Depth 15.31 | d. Calculated Water Column Volume _____ | 4" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic 5/8" tubing (in well / CH2M Hill)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	05417 18
	LaMotte	2020	258 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1050								1200		Clr

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic 1/4" teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
PTMW025 20120917	40mL glass	3	HCl	VOCs	1115
PTMW025 20120917	40mL glass	2	HCl	1,4-Dioxane	1115

Comments: 2.03" floating product - NO flowcell, sheen on water, otherwise relatively clear, black dots of emulsified oil in purge water. Used CH2M Hill tubing. removed 9 gallons

Signature: Paul Karetly | Date: 9/18/12

RESOLUTION CONSULTANTS

Well ID: FTMW02I

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/17/12 Time: Start 13:15 am/pm
Project No: 60264489 Finish 13:48 am/pm
Site Location: Calverton
Weather Conds: ~75°F, clear, light breeze Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 70.6 c. Water Column (a-b) _____ Casing Diameter/Material 4" PVC

b. Water Table Depth 15.20 d. Calculated Water Column Volume _____

2. WELL PURGE DATA

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02F0329
	LaMotte	2020 we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1322	1	18.48	5.86	39	21.24	213.8	2.70	~250	15.23	clear/no odor
1327	2	14.63	5.83	30	22.81	220.6	1.20	"	15.20	"
1333	3	14.27	5.85	29	23.18	222.3	1.37	"	15.20	"
1338	4	14.25	5.88	29	23.17	223.9	1.78	"	"	"
1343	6	14.15	5.89	29	23.11	222.9	2.13	"	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW02I-20120917	40 mL VOA	3	HCl	VOCs	~~1345~~ 1345
FTMW02I-20120917	40 mL VOA	2	HCl	VOCs 504.1	✓

Comments

Signature J. Ehlen Date 9/17/12

RESOLUTION CONSULTANTS

Well ID: FT MW 03S

Low Flow Ground Water Sample Collection Record

Client: Mary Calverkins Date: 9/17/12 Time: Start 1220 am/pm
Project No: Finish 1330 am/pm
Site Location:
Weather Conds: sunny 75 Collector(s): BK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 32.6 c. Water Column (a-b) _____ Casing Diameter/Material
b. Water Table Depth 26.10 d. Calculated Water Column Volume _____ 4" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic 1/4" tubing

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H 1718
LaMotte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1245		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]		[illegible]
1250		14.96	6.02	0.056	6.09	137.2	1.97	500	26.1	
1255		14.41	6.12	0.055	5.08	147.2	2.05	500		
1300		14.35	6.06	0.054	4.15	164.0	1.66			
1305		14.16	6.05	0.056	3.76	174.2	1.48	500	26.10	
1310		14.16	5.99	0.055	3.89	184.4	1.94	400		
1315		14.14	6.01	0.054	3.64	189.2	1.79	420	26.10	
1320		14.36	6.00	0.053	3.66	194.1	1.52	410	26.10	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW03S20120917	40mL glass	3	HCl	VOCs	1325

Comments

Signature Paul Kavetto Date 9/17/12

RESOLUTION CONSULTANTS

Well ID: FTMW05S

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/17/12 Time: Start 1445 am/pm
Project No: Finish 1605 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 20.0 c. Water Column (a-b) 8.08 Casing Diameter/Material
b. Water Table Depth 11.92 d. Calculated Water Column Volume _____ 4" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 15 ft 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	05H1718
	LaMotte	2020	2584110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1515								450	11.91	
1520		16.36	4.64	0.048	0.12	217.4	6.06	450		
1525		15.89	4.62	0.048	0.08	228.1	4.06			
1530		15.66	4.65	0.050	0.07	229.0				
1535		15.71	4.71	0.055	0.07	229.4	3.46	450	11.93	
1545		15.63	4.73	0.062	0.06	237.9	1.94			
1550		15.61	4.76	0.065	0.06	243.0	1.34	450	11.92	
1555		15.61	4.78	0.068	0.06	242	1.13	450	11.92	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW05S20120917	40mL glass	3	HCl	VOCs	1600
FTMW05S20120917	40mL glass	2	HCl	VOCs 504.1	1600

Comments: reused CH2M Hill ~~Teflon~~ pump 1/4" ~~down 1" to 11~~ long poly pump 1/4" new Teflon inside ~~flex~~ 1/4" poly

Signature: Paul Kurth Date: 9/17/12

RESOLUTION CONSULTANTS

Well ID: FTMW05I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/17/12 Time: Start 1605 am/pm
Project No: Finish ____ am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 60.0 c. Water Column (a-b) 47.69 Casing Diameter/Material
b. Water Table Depth 12.31 d. Calculated Water Column Volume ____ 4" PVC

(55ft)

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1610	—									On
1615		12.86	5.77	0.029	1.08	222.7	1.95	500	12.35	
1620		12.74	5.73	0.029	1.04	226.6	1.63	500	12.35	
1625		12.62	5.76	0.029	1.01	224.9	1.62	500		
1630		12.58	5.79	0.029	0.97	223.0				
1635		12.57	5.81	0.029	0.96	223.7	1.32	450	12.36	
1645		12.96	5.84	0.029	0.96	216.2				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW05I20120917	40mL glass	3	HCL	VOCs	
FTMW05I20120917	40mL glass	2	HCl	504.1	
FTMWDUP01 20120917	40mL glass	3	HCl	VOCs	1730
FTMWDUP01 20120917	40mL glass	2	HCl	504.1	1730

Comments ran 1/4" Teflon (64ft) inside 1/2 poly (62ft) set at 55ft

Signature Paul Kraeth Date 9/17/12

62ft poly
64ft Teflon

RESOLUTION CONSULTANTS

Well ID: FTMW065

Low Flow Ground Water Sample Collection Record

Client: Navy Culverton Date: 9/18/12 Time: Start 8:15 am/pm
Project No: Finish 1:05 am/pm
Site Location:
Weather Conds: cloudy 70 light rain Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 29.1 c. Water Column (a-b) 7.72 Casing Diameter/Material 4" PVC
b. Water Table Depth 21.08 d. Calculated Water Column Volume _____

24 ft

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	0541718
La Motte	2020	2384118

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
925								600		ON
930		13.39	4.25	0.042	1.05	228.8	31.8		21.28	
935		13.48	4.27	0.049	0.27	234.1	13.4			
940		13.44	4.32	0.042	0.24	237.1	7.25	500	21.29	
945		13.50	4.36	0.041	0.25	233.8	4.66			
950		13.37	4.37	0.041	0.24	232.7	3.89	500	21.18	
955		13.57	4.39	0.040	0.26	231.3				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic 1/2" Teflon lined poly

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW065201209 18	40ml glass	3	HCl	VOCs	1000

Comments

Signature Paul Kaseth Date 9/18/12

29 ft of 1/2 Teflon lined poly

RESOLUTION CONSULTANTS

Well ID: FTMW06I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/18/12 Time: Start 0810 am/pm
Project No: / Finish 915 am/pm
Site Location:
Weather Conds: Cloudy 20° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 76.8 c. Water Column (a-b) 54.55 Casing Diameter/Material
b. Water Table Depth 22.25 d. Calculated Water Column Volume _____ 4" PVC

7h

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H1718
LaMotte	2020	23841/D

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
745								450		
750		12.42	5.84	0.029	4.74	143.9	5.72		22.29	
855		11.90	6.03	0.029	2.05	146.0		450	22.29	
900		11.85	6.05	0.029	1.69	146.7	4.36			
905		11.84	6.13	0.029	1.00	148.2	2.99	450	22.29	
910		11.85	6.17	0.029	0.94	150.0				
915		11.86	6.18	0.030	0.91	151.8				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic pump

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW06I20120918	40 mL glass	3	HCl	VOCs	0920

Comments about 5 gallons removed

Signature Paul Kaseth Date 9/18/12

76 ft ½" poly
78 ft Teflon ¼"

Well ID: FTMW07S

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/17/12 Time: Start 1435 am/pm
Project No: 60264489 Finish _____ am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, light breeze Collector(s): J. Ehlen / K. Barkaus

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 36.8 c. Water Column (a-b) _____ Casing Diameter/Material
b. Water Table Depth 29.91 d. Calculated Water Column Volume _____ 4" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02F0329
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1440	1	14.08	4.65	31	20.59	226.4	1.94	~250	29.91	clear, no odor
1445	2.5	13.01	4.57	30	19.16	244.3	1.67	~250	29.92	" "
1450	4	12.63	4.57	30	18.32	253.2	2.01	~250	29.92	" "
1455	6	12.57	4.57	30	17.98	259.1	2.87	250	29.92	" "
1500	8	12.54	4.58	30	17.79	263.7	1.93	250	29.93	" "
1505	9	12.50	4.58	30	17.57	265.9	0.81	250	29.93	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW07S-20120917	40mL VOA	3	HCl	VOCs	15:08
FTMW07S-20120917ms	↓	↓	↓	↓	↓
FTMW07S-20120917msD	↓	↓	↓	↓	↓

Comments _____

Signature J. Ehlen Date 9/17/12

RESOLUTION CONSULTANTS

Well ID: FT-MW08I

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/18/12 Time: Start 8:48 am/pm
Project No: 60264489 Finish 922 am/pm
Site Location: Calverton
Weather Conds: ~70°F, light drizzle, breezy Collector(s): K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 35.8 c. Water Column (a-b) 27.33 Casing Diameter/Material
b. Water Table Depth 8.47 d. Calculated Water Column Volume 17.84 gal 4" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Bladder Pump		
YSI	00B0797	
la Motte	210-4010	

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
850	<1	14.40	4.87	217	14.97	168.7	6.31	~250	8.47	clear, no odor
855	2	13.50	4.98	214	7.04	177.9	6.27	"	8.47	" "
900	3	13.49	4.96	216	5.11	183.8	6.21	"	"	" "
905	4	14.08	4.97	219	4.81	188.9	5.32	"	"	" "
910	5	14.54	4.97	222	4.92	191.1	1.87	"	"	" "
915	6	14.93	4.98	225	4.99	194.9	2.11	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FT-MW08I-20120918	VOAs	3	HCl	VOCs	920

Comments

Signature [signature] Date 9/18/12

Well ID: FT-PZ45S

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/20/12 Time: Start 955 am/pm
Project No: 60264489 Finish 1025 am/pm
Site Location: Calverton
Weather Conds: ~65°F, partly cloudy, breezy Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 17.4 c. Water Column (a-b) 7.24 Casing Diameter/Material
b. Water Table Depth 10.16 d. Calculated Water Column Volume 0.30 gal 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1000	2	18.28	5.16	41	1.34	-129.8	16.1	~350	10.20	clear/no odor
1005	6	18.31	5.17	41	0.95	-134.4	17.0	~350	10.20	" "
1010	10	18.28	5.24	41	0.83	-136.1	3.31	"	"	" "
1015	15	18.29	5.30	41	0.81	-137.4	1.82	"	"	" "
1020	20	18.35	5.33	41	0.85	-131.5	1.07	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FT-PZ45S-20120920	40mL VOA	3	HCl	VOCs	1027

Comments

Signature J. Ehlen Date 9/20/12

RESOLUTION CONSULTANTS

Well ID: FTPZ-452S

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/17/12 Time: Start 1340 am/pm
Project No: Finish 1440 am/pm
Site Location:
Weather Conds: sunny, 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 18.42 c. Water Column (a-b) 8.47 Casing Diameter/Material
b. Water Table Depth 12.95 d. Calculated Water Column Volume 13 ft 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	05H1718
	La Motte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1355								500		OK
1400		16.02	5.92	0.089	0.26	128.0	5.62		10.98	
1405		15.95	5.70	0.082	0.15	143.3	1.81		10.98	
1410		15.80	5.72	0.083	0.11	144.4	1.92		10.99	
1415		15.86	5.76	0.081	0.07	141.2	1.77	450	10.99	
1420		15.75	5.79	0.080	0.07	140.8	1.37			
1425		15.80	5.80	0.081	0.06	140.1	1.03			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

(continued on back)

If no or N/A - Explain below.
DO < 0.10

3. SAMPLE COLLECTION: Method: Peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTPZ452S20120917	40 mL glass	3	HCl	VOCs	1430

Comments

Signature: Paul Kaull Date: 9/17/12

RESOLUTION CONSULTANTS

Well ID: FTPZ454S

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/20/12 Time: Start 11:05 am/pm
Project No: 60264489 Finish 11:38 am/pm
Site Location: Calverton
Weather Conds: ~65°F, mostly cloudy, breezy Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 15.15 c. Water Column (a-b) 6.61 Casing Diameter/Material 1" PVC
b. Water Table Depth 8.54 d. Calculated Water Column Volume 0.27 gal

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.2

c. Field Testing Equipment used: Make YSI, Lamotte Number 124, 0

Site 2 off property

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)					Color/Odor
11:10	3	19.63	5.54	89	0.95				8.56	clear/no odor
11:15	7	19.61	5.56	89	0.81			"	8.56	" "
11:20	10	19.62	5.57	88	0.76	[illegible]	5.57	"	8.56	" "
11:25	14	19.59	5.56	88	0.71	-135.9	5.68	"	8.57	" "
11:30	18	19.61	5.58	88	0.70	-136.7	3.87	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FT-PZ454S-20120920	40mL VOA	3	HCl	VOCs	1135

Comments

Signature J Ehlen Date 9/20/12

RESOLUTION CONSULTANTS

Well ID: FTP24565

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/12/12 Time: Start 0845 am/pm
Project No: Finish 1100 am/pm
Site Location:
Weather Conds: Sunny 80° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 15.4 c. Water Column (a-b) Casing Diameter/Material
b. Water Table Depth 8.49 d. Calculated Water Column Volume

2. WELL PURGE DATA

a. Purge Method: small bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600 XL	0250329
La Motte	2020	258

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0955		17.14	4.81	37	22.32	210	3.41	55	8.60	
1000		16.90	4.82	33	19.05	214.1	2.23	55	8.49	
1005		16.75	4.81	31	17.40	217.6	1.90	55	8.49	
1010		16.74	4.80	30	15.95	221.6	1.03	55	8.49	
1015		16.89	4.80	29	14.64	224.3	0.66	55	8.49	
1020		16.96	4.80	29	13.25	226.7	1.95	55	8.49	
1025		16.99	4.80	29	12.66	228.0	0.68	55	8.49	
1030		17.03	4.79	29	11.91	229.7	0.93	55	8.49	
1035		17.18	4.79	29	11.47	231.4		55	8.49	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: bladder pump

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTP24565 20120912	40mL glass	3	HCl	VOCs	1040

Comments: Run pump at 6 GPM (8 fill, 2 purge) cycles
DOH Duplicate

Signature Date

RESOLUTION CONSULTANTS

Well ID: FTPZ4558

Low Flow Ground Water Sample Collection Record

Client: Nancy Culverton Date: 9/13/12 Time: Start 830 am/pm
Project No: Finish 11200 am/pm
Site Location:
Weather Conds: Collector(s): PKSC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 37.8 c. Water Column (a-b) 8.57 Casing Diameter/Material
b. Water Table Depth 29.23 d. Calculated Water Column Volume _____ _____

33 ft

2. WELL PURGE DATA

a. Purge Method: 1" bladder

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600 SL	02F0324
LaMotte	2020	2394110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
915				problems						on/off
1005										restart
1010		17.25	4.56	79	20.47	204.8	11.7	80	29.23	
1015		16.39	4.50	50	20.87	219	12.1	80	29.23	
1020		16.19	4.50	45	20.82	223.7				
1025		16.08	4.53	42	20.86	227.2	10.52	80	29.24	
1030		16.05	4.58	41	21.01	230	10.32	80	29.24	
1035		16.12	4.61	41	20.72	233	10.86	80	29.24	
1040		16.38	4.64	41	20.55	234	10.75	80	29.24	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: bladder pump

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTPZ455520120913	40 mL glass	3	HCl	VOCs	1045

Comments: significant problems with pump 45 min to get it to work
split sample with DOH

Signature: Paul Kraeth Date: 9/13/12

RESOLUTION CONSULTANTS

Well ID: FTP2-460-I

Low Flow Ground Water Sample Collection Record

Client: Navy Culverton Date: 9/18/12 Time: Start 1215 am/pm
Project No: Finish 1230 am/pm
Site Location:
Weather Conds: Cloudy 75° Collector(s): PK

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 52.5 c. Water Column (a-b) 41.25 Casing Diameter/Material
b. Water Table Depth 10.25 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic pump 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H1718
La Motte	2020	23X4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1135								600		On
1140		12.59	5.56	0.451	-0.36	3.8	8.62	500		
1145		12.93	5.58	0.450	-0.40	-9.4	5.96	500		
1150		12.65	5.57	0.448	-0.37	-12.0		400		
1155		12.86	5.55	0.477	-0.35	-14.3	3.2		10.38	
1200		12.84	5.55	0.446	-0.35	-15.6				
1205		12.74	5.55	0.444	-0.34	-17.0	2.43	400		
1210										

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTP2460I20120918	40ml glass	3	HCl	VOCs	1210

Comments Martin DOH collected a split

Signature Paul Karott Date 9/18/12

RESOLUTION CONSULTANTS

Well ID: FTP2461I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/18/12 Time: Start 1500 am/pm
Project No: Finish 1400 am/pm
Site Location:
Weather Conds: Cloudy 75° light rain Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 61.6 c. Water Column (a-b) 13.5 Casing Diameter/Material
b. Water Table Depth 19.25 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 24" tubing

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H1718
LaMotte	2020	2584110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1250								600		3N
1255		14.03	5.63	0.243	2.40	-43.1	32.3	400		
1300		13.36	5.45	0.349	2.73	-38.6	2.55	400	19.29	
1305		13.25	5.44	0.349	2.43	-42.9	2.08			
1310		13.10	5.43	0.346	2.12	-43.3	1.99	400	19.29	
1315		13.12	5.42	0.347	1.95	-43.9				
1320		13.14	5.43	0.346	1.94	-44.6	2.05	400	19.29	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic pump

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTP2461I20120918	40ml glass	3	HCl	VOCs	1325

Comments

Signature Paul Knoth Date 9/18/12

RESOLUTION CONSULTANTS

Well ID: FTP2 4625

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/13/12 Time: Start 1130 am/pm
Project No: Finish 1330 am/pm
Site Location:
Weather Conds: Collector(s):

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 15.0 c. Water Column (a-b) 9.89 Casing Diameter/Material
b. Water Table Depth 5.11 d. Calculated Water Column Volume 10 ft

2. WELL PURGE DATA

a. Purge Method: 3/4" bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	02F0329
LaMotte	2020	2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1220										start
1230		17.38	4.79	46	8.10	61.8	5.5	100	5.14	
1235		17.01	7.25	46	8.05	61.8	-	-	-	
1240		16.65	4.71	45	8.01	61.8	3.54		5.13	
1245		16.27	4.69	44	7.37	61.2	2.91	90		
1250		16.27	4.70	44	7.82	60.7				
1255		16.16	4.70	44	8.59	60.2	1.91		5.13	
1300		16.22	4.72	44	8.14/65	59.8				
1305		16.66	4.72	44	8.00	59.7	1.71		5.13	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: mini bladder pump

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTP2 4625 20120913	40ml glass	3	HCl	VOCs	1310
FTP2 DUP02 20120913	40ml glass	3	HCl	VOCs	1145

Comments: semi location both split

Signature Date

RESOLUTION CONSULTANTS

Well ID:

P2458I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/12/12 Time: Start 1110 am/pm
Project No: Finish 1450 am/pm
Site Location:
Weather Conds: Sunny 80° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 47.1 c. Water Column (a-b) 41.73 Casing Diameter/Material
b. Water Table Depth 5.27 d. Calculated Water Column Volume _____ 1" PVC

42 ft

2. WELL PURGE DATA

a. Purge Method: mini bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	02F0329
LaMotte	2020	238

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1140			problems							on - off
1315										on
1320		19.91	5.65	355	16.91	51.3	3.99	100		
1325		18.19	5.59	319	13.45	47.9	2.58	100	5.29	
1330		18.10	5.59	316	13.23	47.6	1.78	100	5.29	
1335		17.65	5.56	327	10.99	44.6	1.46	100	5.29	
1340		17.48	5.55	346	9.86	40.0	1.31	100	5.29	
1345		17.49	5.55	360	8.09	37.0	1.34	100		
1350		16.93	5.56	367	7.29	32.5	0.78	100		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

little turbidity won't feed into well, waded up on this side

3. SAMPLE COLLECTION: Method: bladder pump

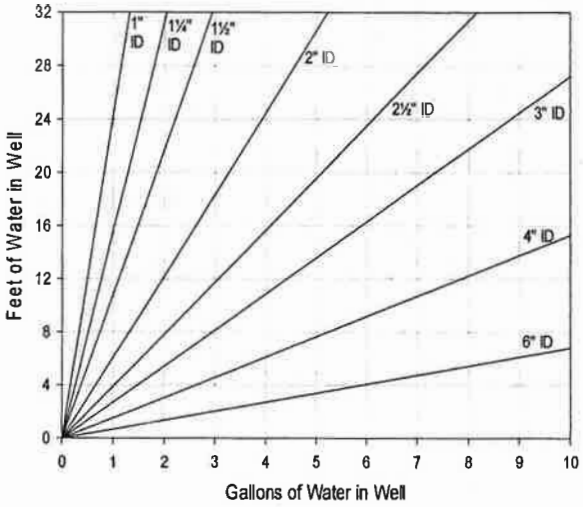
Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTP2458I20120912	40 ml glass	3	HCl	VOCs	1430

Comments problems with the air line - had to remove and reset in pump
pump missing the top check ball
long wait for DO DOH split

Signature _____ Date _____

5 CPM 8.6./3.4 150 psi changed to 6 CPM 7/3

Well ID:



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1400		16.78	5.56	365	6.42	30.8	1.03	100		
1405		16.79	5.56	366	6.01	28.9	0.56	100		
1410		16.86	5.57	365	5.72	27.4	0.68	100	5.29	
1415		16.67	5.56	362	5.09	26.5	0.74	100		
1420		16.63	5.57	362	4.91	25.7	0.85	100		
1425		16.80	5.57	366	4.62	23.7	0.78	100	5.28	

5.09
.51
4.58

1430

RESOLUTION CONSULTANTS

Well ID: FT-MW085

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/18/12 Time: Start 8:39 am/pm
Project No: 60264489 Finish 9:55 am/pm
Site Location: Calverton
Weather Conds: ~70°F, light rain, breezy Collector(s): J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 16.3 c. Water Column (a-b) 7.9 Casing Diameter/Material 4" PVC

b. Water Table Depth 8.40 d. Calculated Water Column Volume 5.16 gal

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
LaMotte	2020	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
848	2	17.55	4.26	53	4.05	-112.1	23.0	~250	8.41	yellowish brown, org odor
853	4.5	17.44	4.12	53	2.81	-111.2	14.0	300	8.40	clear org. odor
858	7	17.41	4.13	54	2.15	-119.8	7.36	300	8.40	" "
905	10	17.42	4.19	54	1.57	-113.4	6.88	300	8.40	" "
910	13	17.37	4.25	54	1.16	-121.7	4.67	300	8.40	" "
915	15	17.39	4.28	54	0.95	-129.2	5.08	300	8.40	" "
920	18	17.45	4.30	54	0.80	-135.5	3.85	300	8.40	" "
925	20	17.48	4.31	54	0.70	-136.9	5.00	300	8.40	" "
930	22	17.51	4.33	54	0.58	-139.7	2.53	300	8.40	" "

(continued on back) →

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

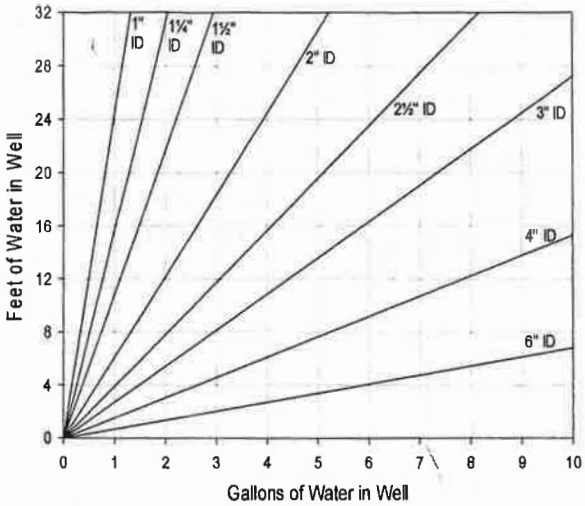
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FTMW085-20120918	40mL VOA	3	HCl	VOCs	953

Comments

Signature: J Ehlen Date: 9/18/12

Well ID: FtMW085



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

22L removed @ 9:30

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
935	17.43	24	4.35	54	0.51	-138.8	2.42	300	8.40	clear / no odor
940	17.46	26	4.35	54	0.46	-139.5	2.22	300	8.40	" "
945	28	17.41	4.36	54	0.42	-132.7	2.47	300	8.40	" "
950	30	17.42	4.37	54	0.40	-135.0	1.86	300	8.40	" "

Well ID: FC-MW02SRI

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/10/12 Time: Start 5:48 am/pm
Project No: Finish 16:30 am/pm
Site Location: Calverton Navy
Weather Conds: Collector(s): KB

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 18.77 c. Water Column (a-b) _____ Casing Diameter/Material
b. Water Table Depth 7.91 d. Calculated Water Column Volume _____ 2"

2. WELL PURGE DATA

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1555	~2.5	21.51	6.47	754	0.47	-194.6	23.1	250	8.55	Clear, org odor sheen
1600	~3.0	21.45	6.46	748	0.46	-192.8	5.06	"	8.54	" " "
1605	~3.5	21.42	6.46	764	0.37	-195.1	5.64	"	8.53	" " "
1610	~4.0	21.40	6.45	722	0.33	-196.3	4.91	"	8.47	Black, " "
1615	~4.5	21.38	6.43	692	0.31	-192	4.27	"	8.45	" " "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
					1620

Comments DTW after 8.51 bgs black organic odor and color, organic sheen

Signature _____ Date _____

RESOLUTION CONSULTANTS

Well ID: FC MW 02 R1

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton
Date: 9/10/12
Time: Start 1555 am/pm
Finish 1635 am/pm
Project No:
Site Location:
Weather Conds:
Collector(s): PK/SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 54.0
b. Water Table Depth 8.49
c. Water Column (a-b)
d. Calculated Water Column Volume

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	
	Horiba		

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1555										Start
1605		17.3	6.28	60	16.54	121.9	12.9	450	8.51	
1610		16.58	5.98	62	15	133	10.7	450	8.48	
1615		17.55	5.90	66	10.86	141	10.1	400	8.49	
1620		17.24	5.87	65	12.94	147	10.5	350	8.49	
1625		16.56	5.85	63	13.36	151	4.99	400	8.49	
1630		16.48	5.86	63	13.04	154	5.61	400	8.49	
1635		16.43	5.85	63	13.12	156	4.85	400	8.49	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time

Comments

Signature

Date

RESOLUTION CONSULTANTS

Well ID: FC-MW03SR1

Low Flow Ground Water Sample Collection Record

Client: Navy / Calverton Date: 9/11/12 Time: Start 8:58 am/pm
Project No: 60264489 Finish 10:00 am/pm
Site Location:
Weather Conds: ~60°F, sunny, breezy Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 16.27 c. Water Column (a-b) 8.05 Casing Diameter/Material
b. Water Table Depth 8.22 d. Calculated Water Column Volume 1.31 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	05H1718 AA
Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
9:00	1	21.85	6.48	905	~~2.57~~	-89.8	27.2	300	8.33	clear/no odor
9:05	2	21.39	6.54	831	2.28	-75.7	30.3	300	8.35	clear/organic odor
9:10	4	21.18	6.54	767	2.30	-74.1	67.9	300	8.29	" "
9:15	6	21.16	6.52	717	2.24	-70.8	62.7	300	8.33	" "
9:20	8	21.10	6.50	683	2.13	-68.1	53.5	300	8.27	" "
9:25	10	21.09	6.49	651	1.08	-67.1	41.3	300	8.27	" "
9:30	12	21.65	6.48	641	1.21	-63.8	33.2	300	8.27	" "
9:37	14	21.15	6.47	627	1.45	-62.4	28.0	300	8.27	" "
9:42	15	21.07	6.48	632	1.39	-63.7	27.2	300	8.28	" "

DO 2.51

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FC-MW03SR1-20120911	40mL VOA	3	HCl	VOC	9:50
FC-MW03SR1-20120911 MS	"	"	"	"	"
FC-MW03SR1-20120911 MSD	"	"	"	"	"

Comments: Collected MS/MSD sample here

Signature: J. Ehlen Date: 9/11/12

RESOLUTION CONSULTANTS

Well ID: FCMW055

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/10/12 Time: Start 11:00 am/pm
Project No: Finish _____ am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, light wind Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 17.71 c. Water Column (a-b) 6.87 Casing Diameter/Material 4" PVC

b. Water Table Depth 10.84 d. Calculated Water Column Volume 4.48 gal

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124 AD
	Lamotte	2020we	238

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:05	4	20.24	7.30	106	~~88.7%~~	-129.4	6.08	350	10.87	clear/no odor
11:10	6	20.24	7.30	106	8.02	-129.4	6.40	250	10.85	" "
11:15	8	17.51	4.90	63	5.13	-51.2	10.69	250	10.84	" "
11:20	10	17.50	4.70	63	5.64	-36.9	11.80	250	10.84	" "
11:25	12	17.44	4.62	64	6.43	-33.9	11.51	250	10.84	" "
11:30	14	17.32	4.66	64	6.90	-39.4	7.68	250	10.84	" "
11:35	16	17.35	4.67	64	7.12	-36.0	9.48	250	10.82	" "
11:41	18	17.29	4.70	63	7.43	-38.0	8.83	250	10.82	" "
11:46	20	17.30	4.76	63	7.75	-37.3	8.49	250	10.82	" "

DO 8.02

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FC-MW055-20120910	40 mL VOA	3	HCl	VOCs	1150

Comments

Signature Jessica Ehlen Date 9/10/12

RESOLUTION CONSULTANTS

Well ID: FCP205I1

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/10/12
Time: Start 13:05 am/pm
Finish 13:52 am/pm
Project No:
Site Location: Calverton / Navy
Weather Conds: Sunny Clear ~78°F
Collector(s): Kristen, Saby, Paul

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 52.7
b. Water Table Depth 10.79
c. Water Column (a-b) 21.61
d. Calculated Water Column Volume 27 ft
Casing Diameter/Material 1" PVC

2. WELL PURGE DATA

a. Purge Method: 0.75" bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	00B0797
	La Motte		

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1320		24.11	6.55	193	13.18	-37.7	8.18	40mL	—	Clear, no odor
1325		22.82	6.51	192	12.81	-31.2	6.11	"	—	" "
1330		22.21	6.50	192	11.53	-22.8	4.88	"	—	" "
1335		22.29	6.48	192	11.32	-17.4	4.01	"	—	" "
1340		22.35	6.49	193	11.36	-17.5	1.57	"	—	" "
1345		22.41	6.49	194	10.61	-15	1.97			

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FCP205I1	40 ml glass	3	HCl	VOCs	1350

Comments

Signature

Date

RESOLUTION CONSULTANTS

Well ID: P2 05I
FC MW05I

Low Flow Ground Water Sample Collection Record

Client: NAVFAC
Date: 9/10/12
Time: Start 1030 am/pm
Finish 1200 am/pm
Project No:
Site Location:
Weather Conds: Sunny 80°
Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 47.35
b. Water Table Depth 10.15
c. Water Column (a-b) 37.20
d. Calculated Water Column Volume 53ft
Casing Diameter/Material 4" PVC

2. WELL PURGE DATA

a. Purge Method: 1.6" bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600 XL	208

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1105		14.76	6.86	94	29.86	173	1.15	425	10.22	
1110		13.97	6.36	93	26.80	184	1.28	425	10.25	
1115		13.79	6.17	72	24.08	193	1.35	425	10.25	
1120		13.83	6.10	71	22.24	197.6	1.16	400	10.23	
1125		13.76	6.07	71	20.08	200.4	0.96	450	10.24	
1130		13.77	6.03	70	18.68	203	1.05	450	10.25	
1135		14.57	6.01	72	16.24	202.9	1.10	450	10.24	
1140		14.23	6.02	71	18.70	206	1.10	450	10.25	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
FCMW05I 20120910	40 mL Glass	3	HCL	VOCs	1150

Comments

Signature: Paul Koseth
Date: 9/10/12

RESOLUTION CONSULTANTS

Well ID: SAmw126I

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/19/12
Time: Start 1400 am/pm
Finish 1445 am/pm
Project No: 60264489
Site Location: Calverton
Weather Conds: ~75°F, sunny, light wind
Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 52.2
b. Water Table Depth 5.65
c. Water Column (a-b) 46.55
d. Calculated Water Column Volume 7.60 gal
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1405	1.5	15.23	5.85	67	1.29	-102.6	34.3	~250	5.66	clear/no odor
1410	4	14.37	5.39	67	0.81	-95.0	21.8	"	5.63	clear/no odor
1415	6	14.57	5.20	70	0.74	-93.8	17.0	"	5.65	" "
1420	8	14.50	5.15	65	0.62	-95.4	12.1	"	5.66	" "
1425	9.5	14.80	5.14	66	0.60	-94.5	12.7	"	"	" "
1430	11	14.85	5.15	65	0.56	-96.7	7.32	"	"	" "
1435	13	14.76	5.10	65	0.52	-94.5	7.59	"	"	" "
1440	15	14.97	5.19	65	0.55	-97.4	10.64	"	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAmw126I-20120919	40mL VOA	3	HCl	VOCs	1443

Comments

Signature: J. Ehlen
Date: 9/19/12

RESOLUTION CONSULTANTS

Well ID: SAMW126D

Low Flow Ground Water Sample Collection Record

Client: Navy | Date: 9/19/12 | Time: Start ~~12:30~~ 12:55 am/pm
Project No: 60264489 | Finish 1349 am/pm
Site Location: Calverton
Weather Conds: ~75°F, mostly sunny, light wind | Collector(s): KB/JE

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 86.98 c. Water Column (a-b) 78.83 Casing Diameter/Material ~~4"~~ 2" PVC

b. Water Table Depth 8.15 d. Calculated Water Column Volume 12.87 gal

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1305	1	18.50	7.40	94	5.17	-132.4	100	250	8.12	cloudy, no odor
1310	3	17.41	7.25	93	2.01	-132.7	605	250	8.11	" "
1318	5	17.23	7.19	92	1.60	-132.1	320	250	8.11	" "
1328	8	16.99	7.15	89	1.36	-132.0	41	250	8.12	clear, "
1333	8.5	16.78	7.09	87	1.15	-131.5	31	250	8.11	" "
1338	9	16.72	7.05	86	1.16	-131.3	44	250	8.11	" "
1344	9.5	16.74	6.99	85	1.18	-127.2	13	250	8.11	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW126D-20120919	40mL VOA	3	HCl	VOCs	~~1341~~ 1347

Comments

Signature J. Elder Date 9/19/12

RESOLUTION CONSULTANTS

Well ID: SAMW127I

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/13/12
Time: Start 14:57 am/pm
Finish 1537 am/pm
Project No: 60264489
Site Location: Calverton
Weather Conds: ~75°F, Sunny, light wind
Collector(s): J. Ehlen/K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 48.4
b. Water Table Depth 7[illegible].80
c. Water Column (a-b) 38.6
d. Calculated Water Column Volume 6.30 gal
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	0241124
	Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L) 3.18	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1500	<1	15.80	5.97	91	[illegible]	-129.2	15.5	~250	7[illegible].82	clear, no odor
1505	2	14.49	5.63	93	0.99	-161.3	15.1	~250	7.78	" "
1511	4	14.42	5.38	92	0.71	-163.2	9.61	~250	7.78	" "
1515	5	14.17	5.27	91	0.65	-161.8	9.91	~250	7.79	" "
1520	7	14.08	5.10	92	0.56	-161.9	8.27	~250	7.78	" "
1525	9	14.13	5.08	92	0.52	-163.4	10.21	~250	"	" "
1530	11	13.96	5.05	90	0.50	-161.8	8.01	~250	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW127I-20120913	40mL VOA	3	HCl	VOCs	1533

Comments

Signature [signature] Date 9/13/12

Well ID: SAMW128I

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/13/12 Time: Start 13:08 am/pm
Project No: 60264489 Finish 13:34 am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, little wind Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 42.5 c. Water Column (a-b) 32.13 Casing Diameter/Material

b. Water Table Depth 10.37 d. Calculated Water Column Volume 5.24 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
13:13	2	15.03	5.22	63	9.10	-57.7	8.46	300	10.40	clear/no odor
1320	4	14.90	5.14	72	8.58	-61.6	5.70	300	NA	" "
1325	6	14.91	5.14	72	8.58	-61.4	5.15	300	NA	" "
1330	8	14.77	5.21	74	8.57	-65.5	4.78	300	NA	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW128I-20120913	40mL VOA	3	HCl	VOCs	1332

Comments well is letting off steam, well is also bubbling (bubbles on tape measure). Tape measure not reading accurately, no water level readings after 1313. small bubbles on tubing when pulling tubing from well.

Signature J Ehlen Date 9/13/12

Well ID: SAMW129I

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/13/12 Time: Start 8:55 am/pm
Project No: 60264489 Finish 9:38 am/pm
Site Location: Calverton
Weather Conds: ~65°F, sunny, little to no wind Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 62.60 c. Water Column (a-b) 39.35 Casing Diameter/Material
b. Water Table Depth 23.25 d. Calculated Water Column Volume 6.42 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
9:00	2	13.41	4.98	68	2.75	-112.0	12.4	~250	23.31	clear/no odor
905	3	12.96	4.76	51	1.02	-122.1	7.54	~250	23.28	" "
910	4	12.91	4.78	50	0.84	-125.0	5.29	~250	23.28	" "
915	5	12.87	4.86	50	0.72	-136.0	6.31	~250	" "	" "
920	7	12.82	4.97	50	0.63	-144.4	6.92	~250	"	" "
925	8.5	12.85	5.04	51	0.60	-149.0	7.03	~250	"	" "
	9.5	12.82	5.09	51	0.57	-150.6	2.21	~250	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW129I-20120913	40mL VOA	3	HCl	VOCs	9:35

Comments

Signature J. Ehlen Date 9/13/12

RESOLUTION CONSULTANTS

Well ID: SAMW129D

Low Flow Ground Water Sample Collection Record

Client: Navy | Date: 9/12/12 | Time: Start 1600 am/pm
Project No: 160264489 | Finish 1644 am/pm
Site Location: Galveston
Weather Conds: ~70°F, sunny, light wind | Collector(s): J. Ehlen / K. Barbeur

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 93.20 c. Water Column (a-b) 68.94 Casing Diameter/Material

b. Water Table Depth 23.26 d. Calculated Water Column Volume 11.25 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1605	1	14.16	6.70	138	3.92	-150.5	12.7	~250	23.28	clear/no odor
1610	3	13.05	6.59	145	0.83	-165.5	18.2	~250	23.28	" "
1615	5	13.18	6.63	147	0.79	-166.2	17.3	~250	"	" "
1620	6	12.91	6.55	155	0.65	-155.5	35.7	~250	"	" "
1625	8	12.76	6.59	162	0.55	-154.6	26.0	~250	"	" "
1630	9	12.73	6.59	163	0.52	-134.9	30.3	~250	"	" "
1635	11	12.75	6.61	164	0.50	-148.6	29.4	"	"	" "
1640	12	12.71	6.57	164	0.048	-144.6	27.2	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW129D-20120912	40mL VOA	3	HCl	VOCs	1640

Comments

Signature J. Ehlen Date 9/12/12

RESOLUTION CONSULTANTS

Well ID: SAP2134I

Low Flow Ground Water Sample Collection Record

Client: Navy Galveston Date: 9/20/12 Time: Start 1100 am/pm
Project No: Finish 1200 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 46.8 c. Water Column (a-b) 39.70 Casing Diameter/Material
b. Water Table Depth 7.10 d. Calculated Water Column Volume (9.48) 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H1718
LaMotte	2020	138 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1115								600		clr
1120		13.22	5.66	0.064	0.13	153.4	3.16	400	7.10	
1125		12.79	5.69	0.064	0.10	156.1	4.35			
1130		12.72	5.71	0.063	0.09	152.3		450		
1135		12.75	5.71	0.064	0.08	153.1	2.23	400		
1140		12.84	5.71	0.064	0.08	156.9				
1145		12.81	5.70	0.063	0.08	157.8	1.91			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2134I20120920	40mL glass	3	HCl	VOCs	1150

Comments: Cut 48ft of 1/4" Teflon

Signature: Paul Kraetz Date: 9/20/12

RESOLUTION CONSULTANTS

Well ID: 5APZ135I

Low Flow Ground Water Sample Collection Record

Client: _____ Date: 9/13/12 Time: Start 1415 am/pm
Project No: _____ Finish 1530 am/pm
Site Location: _____
Weather Conds: _____ Collector(s): _____

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 47.9 c. Water Column (a-b) _____ Casing Diameter/Material 1" PVC
b. Water Table Depth 5.05 d. Calculated Water Column Volume _____ 43'

2. WELL PURGE DATA

a. Purge Method: peristaltic 5/8 tubing

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	02F0329
	LaMotte	2020	2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1440									N/A	on
1445		12.98	5.50	74	16.59	92.5	1.17	800		
1450		13.25	5.49	74	15.18	129.7	.72			
1455		12.95	5.53	74	15.100	145.6	.50	1000		
1500		12.98	5.59	74	15.16	154.4	0.70	900		
1505		13.01	5.63	74	14.07	158.6	1.79	900		
1510		12.76	5.65	74	13.84	162.0	1.09	900		

d. Acceptance criteria pass/fail (continued on back)

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

removed ~10 gal

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
5APZ135I2012-09-13	40 mL glass	3	HCl	VOCs	1510

Comments: Can't fit water level probe past the 5/8" tubing in the well casing to probe, no steel protective casing

Signature: Paul Kraft Date: 9/13/12

RESOLUTION CONSULTANTS

Well ID: SAP2B8I1

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/20/12 | Time: Start 830 am/pm | Finish 950 am/pm

Project No:

Site Location:

Weather Conds: | Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 44.7 | c. Water Column (a-b) | Casing Diameter/Material

b. Water Table Depth 5.79 | d. Calculated Water Column Volume | 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon 436

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H1719
LaMotte	2020	2584110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
905								400		OH
910		12.41	6.03	0.067	0.06	108.6	1.78		5.78	
915		12.68	6.19	0.068	0.06	107.2	1.36	400		
920		12.70	6.16	0.068	0.06	110.1				
925		12.69	6.15	0.067	0.05	111.6	1.26		5.78	
930		12.65	6.15	0.068	0.05	113.0	1.23		5.78	
935		12.64	6.15	0.068	0.04	114.0	1.14			

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2B8I120120920	40ml glass	3	HCl	VOCs	0940

Comments: Used 4.78 ft of 1/4" Teflon

removed 4.5 gallons

Signature: Paul Kraft | Date: 9/20/12

RESOLUTION CONSULTANTS

Well ID: SAP2139I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/20/12 Time: Start 1000 am/pm
Project No: Finish 1100 am/pm
Site Location:
Weather Conds: Sunny 65-75 Collector(s): PK

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 49.5 c. Water Column (a-b) 40.65 Casing Diameter/Material
b. Water Table Depth 8.85 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 46.5 ft 1/4" Teflon tubing

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600 XL	05H1718
	La Motte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1010								600	8.88	clr
1015		13.82	5.90	0.064	0.15	131.3	3.06	400		
1020		13.05	5.95	0.064	0.13	130.5	1.99			
1025		13.09	5.95	0.065	0.12	132.2	1.76		8.87	
1030		12.95	5.95	0.064	0.10	125.0	1.81			
1035		12.88	5.93	0.064	0.10	128.3	2.12	440		
1040		12.87	5.92	0.064	0.10	131.9	1.82		8.88	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2139I20120920	40 ml glass	3	HCl	VOCs	1045

Comments 51 ft of 1/4" Teflon tubing

Signature Paul Kaufth Date 9/20/12

RESOLUTION CONSULTANTS

Well ID: SMP2149T1

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/13/12 | Time: Start 1530 am/pm
Project No: | Finish 1715 am/pm
Site Location:
Weather Conds: | Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 39.4 | c. Water Column (a-b) | Casing Diameter/Material
b. Water Table Depth 10.51 | d. Calculated Water Column Volume 34 | 1" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	02F0329
LaMotte	2020	238-110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1615									NA	OK
1620		13.43	6.06	88	9.76	44.4	1.57	800		
1625		12.99	6.03	87	9.02	109.3				
1630		12.89	6.03	87	8.90	118.3	1.32			
1635		12.91	6.03	87	8.51	125.4	1.56			
1640		12.92	6.02	87	9.22	130.6	1.55			
1645		12.89	5.99	87	8.20	138.6	1.38			
1650		12.87	5.98	87	8.01	143.5				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

removed ~11 gallons

3. SAMPLE COLLECTION: Method: peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SMP2149T120120913	40ml glass	3	HCl	VOCs	1655

Comments: Second locations
Can't collect WLs, 5/8" tubing in 1" well

Signature: Paul Hauck | Date: 9/13/12

RESOLUTION CONSULTANTS

Well ID: SAP215TI

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/19/12 Time: Start 1130 am/pm
Project No: Finish 1410 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 40.9 c. Water Column (a-b) 34.99 Casing Diameter/Material
b. Water Table Depth 5.91 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	05H 1718
	LaMotte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1300										ON
1305		13.12	5.86	0.065	0.11	101.4	11.91	400	5.92	
1310		13.12	5.86	0.065	0.11	101.4	3.26			
1315		13.12	5.86	0.065	0.11	101.4				
1320		12.97	6.16	0.086	0.09	98.9	1.38	450	5.92	
1325		12.97	6.16	0.089	0.06	97.4	1.25			
1330		12.98	6.16	0.089	0.05	91.2	1.81			
1335		12.97	6.16	0.089	0.05	92.7				

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP215TI20120919	40mL glass	9	HCl	VOCs, MS, MSD	1340
	250mL plastic	3	HNO3	Metals MS, MSD	1340

Comments 44 ft of Teflon

Signature Paul Kraeth Date 9/19/12

RESOLUTION CONSULTANTS

Well ID: SAPZ157I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/19/12 Time: Start 1130 am/pm
Project No: Finish 1300 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 48.4 c. Water Column (a-b) 43.53 Casing Diameter/Material
b. Water Table Depth 5.68 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon @ 45ft

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	05H 1718
LaMotte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1210										ON
1215		13.62	5.52	0.065	1.14	122.2	9.43	400	5.69	
1220		13.45	5.78	0.066	0.38	103.3	3.36			
1225		13.32	5.82	0.066	0.25	100.3	1.46		5.69	
1230		13.22	5.84	0.066	0.18	100.0				
1235		13.22	5.85	0.066	0.15	100.1	1.48	400	5.69	
1240		13.15	5.86	0.066	0.14	100.7	1.30	400	5.69	
1245		13.16	5.86	0.066	0.12	101.1	1.37		5.69	
1250		13.14	5.86	0.065	0.12	101.3				

1255 d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ157I20120919	40 ml glass	3	HCl	VOCs	1300
	250 ML plastic	1	HNO3	Metals	

Comments removed about 5 gal, 50.0 ft of Teflon in the well

Signature Paul Kaneth Date 9/19/12

RESOLUTION CONSULTANTS

Well ID: SAP2161I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/19/12 Time: Start 1410 am/pm
Project No: Finish 1530 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 48.02 c. Water Column (a-b) Casing Diameter/Material
b. Water Table Depth 7.05 d. Calculated Water Column Volume 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon (45)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600 XL	05H1718
La Motte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1430								600		ON
1435	1	13.97	6.72	0.104	-0.24	-60.5	2.79	450	7.12	
1440		13.75	6.61	0.102	-0.22	-62.2				
1444		13.60	6.64	0.101	-0.20	-64.5	1.66		7.14	
1450		13.54	6.62	0.100	-0.18	-63.3	1.50			
1455		13.46	6.60	0.100	-0.18	-61.6		450		
1500		13.65	6.60	0.100	-0.17	-60.9			7.14	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2161I20126919	40mL glass	3	HCl	VOCs	1500
~~SAP2DUP03 20126919~~	250 mL plastic	1	HNO3	metals	1500
SAP2DUP03 20126919	40mL glass		HCl	VOCs	1600
	250mL plastic		HNO3	metals	1600

Comments: Cut 50ft Teflon
removed 5 gallons

Signature: Paul Kraft Date: 9/19/12

DUP 03

RESOLUTION CONSULTANTS

Well ID: SAP2163I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/19/12 Time: Start 1530 am/pm
Project No: Finish 1645 am/pm
Site Location:
Weather Conds: Sunny 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 45.2 c. Water Column (a-b) unk Casing Diameter/Material
b. Water Table Depth unk d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4 Teflon tubing

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YST	600 XL	05H 1718
La Motte	2020	238 4110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1605									NA	ON
1610		13.84	5.99	0.063	0.17	106.9	6.66	400		
1615		13.61	5.96	0.061	0.14	129.6				
1620		13.41	5.99	0.060	0.13	135.0	2.93			
1625		13.36	6.04	0.060	0.13	133.6	2.53			
1630		13.46	6.04	0.060	0.13	137.1	1.76			
1635		13.41	6.01	0.060	0.13	142.8		400		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2163I20120919	40mL glass	3	HCl	VOCs	1640

Comments: casing is bent about 6" bgs, can't get water level meter down, gauged TD with tubing
48 ft of Teflon in the P2 Top edge of Broken PVC - 45.26 ft TD

Signature: Paul Karetta Date: 9/19/12

48 ft 2.8 sticking out TD is 45.2

Well ID: SAMW126S

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/19/12 Time: Start 15:15 am/pm
Project No: 60264489 Finish 16:15 am/pm
Site Location: Calverton
Weather Conds: ~75°, sunny, light wind Collector(s): K. Barbour / J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 17.5 c. Water Column (a-b) 11.87 Casing Diameter/Material
b. Water Table Depth 5.63 d. Calculated Water Column Volume 1.94 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
LaMotte	~~210~~ 2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1522	1.5	17.66	4.70	29	4.82	-124.7	3.97	~250	5.56	clear, org odor
1527	3	17.21	4.47	31	2.67	-129.1	3.28	~250	5.53	" "
1533	4	17.11	4.33	31	1.66	-125.8	2.53	~280	5.51	" "
1538	6	17.09	4.31	31	0.87	-127.0	2.11	~300	5.53	" "
1543	8	17.14	4.37	31	0.67	-128.7	2.74	~300	5.53	" "
1548	10	17.01	4.42	31	0.50	-133.3	2.69	"	5.57	" "
1553	12.5	17.00	4.50	31	0.40	-136.0	2.71	"	5.53	" "
1558	15	16.94	4.50	31	0.35	-137.5	2.09	"	5.56	" "
1603	18	16.92	4.53	31	0.33	-138.2	2.07	"	5.56	" "

(continued on back) →

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

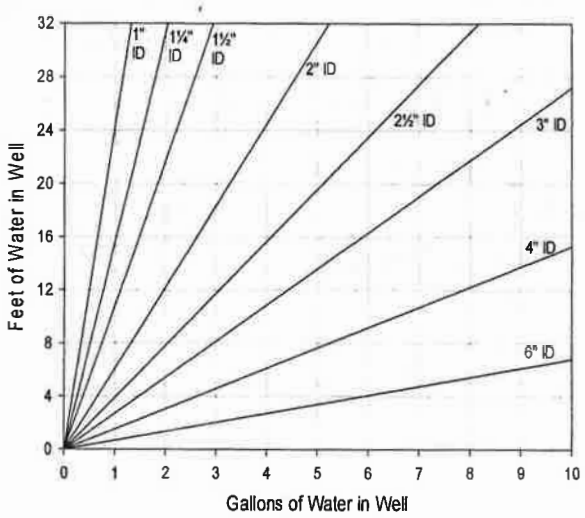
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW126S-20120919	VOAs	3	HCl	VOCs	1612

Comments

Signature [signature] Date 9/19/12

Well ID: SAMW1265



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

18L removed @ 1603

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1608	20	17.00	4.60	31	0.31	-139.0	1.93	300	5.59	Clear/organic odor

RESOLUTION CONSULTANTS

Well ID: SAMW128D

Low Flow Ground Water Sample Collection Record

Client: Navy | Date: 9/13/12 | Time: Start 11:40 am/pm | Finish 13:05 am/pm

Project No: 60264489

Site Location: Calverton

Weather Conds: ~70°F, sunny, light breeze | Collector(s): J. Ehlen | K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 70.5 | c. Water Column (a-b) 59.8 | Casing Diameter/Material

b. Water Table Depth 10.70 | d. Calculated Water Column Volume 9.76 gal | 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:45	2	15.63	5.75	66	5.59	-134.9	94	~250	10.72	cloudy/organic odor
11:50	4	14.94	5.49	65	2.57	-151.9	607	~250	10.77	" "
1155	5	14.80	5.25	64	1.39	-148.9	719	~250	10.77	" "
1200	6.5	14.82	5.22	64	1.45	-140.6	780	~250	10.77	" "
1205	8	14.72	5.09	63	0.81	-147.2	751	"	"	cloudy/no odor
1210	10	14.73	4.91	62	0.70	-145.7	673	"	"	" "
1215	11	14.72	4.90	62	0.67	-147.3	662	"	10.75	" "
1220	13	14.70	4.76	62	0.77	-141.6	158	"	"	" "
1225	14	14.75	4.75	62	0.63	-145.6	140	"	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

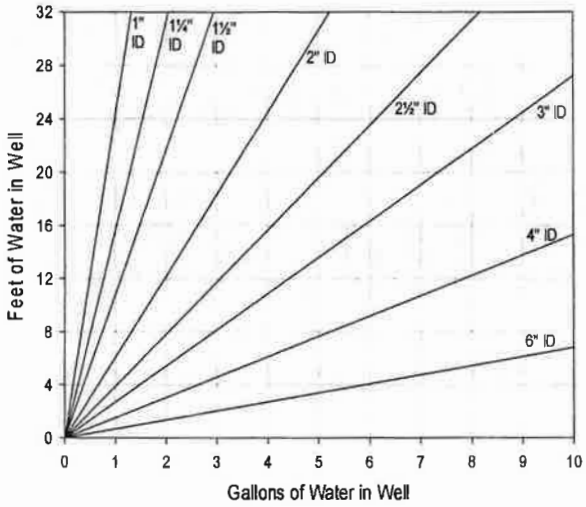
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW128D-20120913	40 mL VOA	3	HCl	VOCs	1303

Comments

Signature: J. Ehlen | Date: 9/13/12

Well ID: SAMW 12S D



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

12:25 - 14 L removed.

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1230	15	14.71	4.73	62	0.58	-146.0	81	"	"	" "
1235	17	14.64	4.62	61	0.55	-145.1	71	"	10.75	cloudy/no odor
1240	18.5	14.68	4.65	62	0.53	-146.7	54	~250	10.75	" "
1245	20	14.71	4.61	62	0.51	-145.6	103.1	"	"	" "
1250	22	14.71	4.62	62	0.50	-149.1	28	"	"	clear/no odor
1255	24	14.68	4.66	62	0.48	-148.4	29	"	"	" "
1300	25	14.70	4.63	62	0.47	-146.4	20	"	"	" "

RESOLUTION CONSULTANTS

Well ID: SAMW1295

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/13/12 Time: Start 9:50 am/pm
Project No: 60264489 Finish 10:45 am/pm
Site Location: Calverton
Weather Conds: ~70°F, Sunny, little to no wind Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 31.60 c. Water Column (a-b) 8.6 Casing Diameter/Material
b. Water Table Depth 23.00 d. Calculated Water Column Volume 1.40 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
955	1	13.32	4.71	46	5.60	-94.5	1.3	300	23.03	clear/no odor
1000	3	13.16	4.68	45	4.02	-103.2	1.38	300	23.03	" "
1005	5	13.12	4.63	45	3.11	-104.3	1.28	300	23.05	" "
1010	7	13.12	4.64	45	2.44	-104.0	0.77	300	23.04	" "
1015	8.5	13.10	4.72	45	1.97	-109.6	1.10	300	23.03	" "
1020	10	13.09	4.75	45	1.81	-111.5	1.86	300	23.03	" "
1025	12	13.12	4.75	45	1.70	-112.5	0.89	300	23.03	" "
1030	14	13.10	4.75	45	1.57	-119.7	0.75	300	23.03	" "
1035	16	13.06	4.76	48	1.50	-121.7	0.93	300	23.04	" "

(continued on back) →

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

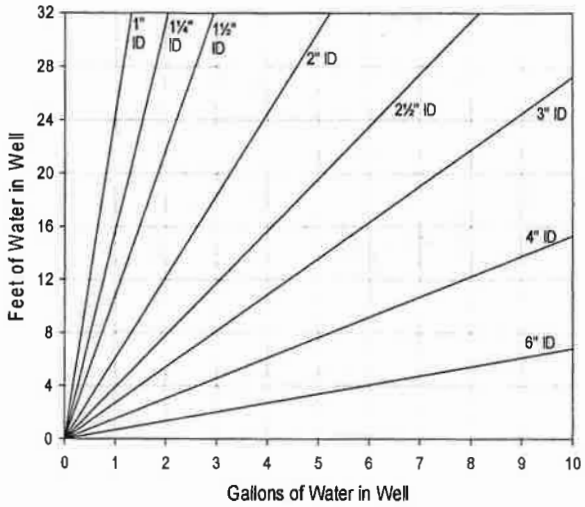
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW1295-20120913	40mL VOA	3	HCl	VOCs	1047

Comments

Signature: J. Ehlen Date: 9/13/12

Well ID: SAMW1295



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

1035 - 16L removed

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1040	18	13.10	4.73	45	1.53	-119.9	1.52	300	23.04	clear/no odor

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 112G02045

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ-146
Sample Location: PZ-146
Sampled By: VAS
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5-17-12	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1130	(Visual)	(S.U.)	(mS/cm)	(^{0}C)	(NTU)	(mg/l)	(%)	ORP
Method: peristaltic pump	Clear		0.093	13.88	21.3	4.04	0.1	82

PURGE DATA:

Date: 5-17-12	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: peristaltic pump	NA							
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 1" stainless								
Total Well Depth (TD): NA								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs): 1125								
End Purge (hrs): 1130								
Total Purge Time (min): 5								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	2 x 40ml vials	yes

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 112G02045

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ-147
Sample Location: PZ-147
Sampled By: VAS
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5-17-12	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Time: 1050								
Method: peristaltic pump	Clear	5.90	0.137	13.78	12.4	4.21	0.2	47

PURGE DATA:

Date: 5-17-12	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: peristaltic pump	NA							
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material Type: 1" stainless								
Total Well Depth (TD): NA								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs): 1045								
End Purge (hrs): 1050								
Total Purge Time (min): 5								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	2x 40 ml vials	6

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD (Yes)

Duplicate ID No.: —

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 112G02045

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ-124
Sample Location: PZ-124
Sampled By: VAS
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Date: 5-17-12								
Time: 1110								
Method: peristaltic pump	clear		0.139	13.69	18.3	3.55	0.1	29

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5-17-12								
Method: peristaltic pump	NA							
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material Type: 1" stainless								
Total Well Depth (TD): NA								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs): 1105								
End Purge (hrs): 1110								
Total Purge Time (min): 5								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	2 x 40 ml vials	yes

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 112602045

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ-125
Sample Location: PZ-125
Sampled By: VAS
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5-17-12	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Time: 0930								
Method: peristaltic pump	clear		0.120	13.70	16.5	4.07	0.0	108

PURGE DATA:

Date: 5-17-12	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: peristaltic pump	NA							
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material Type: 1" stainless								
Total Well Depth (TD): NA								
Static Water Level (WL): ↓								
One Casing Volume(gal/L): ↓								
Start Purge (hrs): 0950								
End Purge (hrs): 0955								
Total Purge Time (min): 5								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	2 x 40 ml Vials	4

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	SA-PZ-DUP01

Signature(s):

RESOLUTION CONSULTANTS

Well ID: SAPZ1185

Low Flow Ground Water Sample Collection Record

Client: Navy | Date: 9/11/12 | Time: Start 11:28 am/pm
Project No: 60264489 | Finish 11:58 am/pm
Site Location: Calverton
Weather Conds: Sunny, little wind, ~75°F | Collector(s): J. Ehlen.

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 18.49 c. Water Column (a-b) 13.12 Casing Diameter/Material

b. Water Table Depth 5.37 d. Calculated Water Column Volume 2.14 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124 AD
LaMotte	2020WE	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:35	2	18.03	5.62	148	4.57	-139.4	38.3	~300	5.45	clear/no odor
11:40	4	17.57	5.89	148	0.59	-175.6	20.1	~300	5.42	" "
11:45	6	17.76	5.94	148	0.51	-179.9	16.1	~300	5.42	" "
11:50	8	17.76	5.94	148	0.51	-180.0	11.1	~300	5.42	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ1185-20120911	40mL VOA	3	HCl	VOCs	11:55

Comments

Signature J. Ehlen Date 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAPZ118I

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/11/12
Time: Start 11:30 am/pm
Finish 11:58 am/pm
Project No:
Site Location: Navy/Calverton
Weather Conds:
Collector(s): JE/KB

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 61.25
b. Water Table Depth 6.02
c. Water Column (a-b) 56.23
d. Calculated Water Column Volume
Casing Diameter/Material 2"

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	bladder pump		
	YSI		
	In Situ	2020	

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1135	1.0	15.29	6.15	0.081	1.30	77.2	48.2	~300	6.05	clear, no odor
1140	2.0	15.63	6.13	0.081	1.28	77.7	39.1	~300	6.09	" "
1145	3.0	15.42	6.15	0.08	1.15	70.2	30.3	~300	6.08	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ118I-20120911	VOA	3	HCl	VOCs	1150

Comments

Signature

Date 9/11/12

Well ID: SAPZ122I

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NAVY Date: 9/12/12 Time: Start 13:30 am/pm
Project No: 60264489 Finish 14:10 am/pm
Site Location: Calverton
Weather Conds: ~70°F, sunny, little to no wind Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 51.50 c. Water Column (a-b) 36.25 Casing Diameter/Material

b. Water Table Depth 15.25 d. Calculated Water Column Volume 5.92 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	0241124
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1335	~1.0	15.05	5.37	108	3.58	-122.5	45.3	~250	15.32	clear, no odor
1342	~2.0	14.72	5.18	107	3.27	-122.6	41.8	~250	15.27	" "
1351	4	14.28	4.88	105	2.94	-117.4	19.7	~250	15.25	" "
1400	8	14.13	4.83	106	2.94	-114.3	11.8	~250	15.26	" "
1405	10	14.10	4.80	105	2.94	-112.8	10.9	~250	15.26	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ122I-20120912	40 mL VOA	3	HCl	VOCs	1407

Comments

Signature J. Ehlen Date 9/12/

RESOLUTION CONSULTANTS

Well ID: SAPZ122D

Low Flow Ground Water Sample Collection Record

Client: Navy | Date: 9/12/12 | Time: Start 11:38 am/pm | Finish 12:22 am/pm

Project No: 60264489

Site Location: Calverton

Weather Conds: ~65°F, Sunny, little to no wind | Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 134.5 | c. Water Column (a-b) 119.55 | Casing Diameter/Material 2" PVC

b. Water Table Depth 14.95 | d. Calculated Water Column Volume 19.51 gal

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:40	2	16.66	6.35	109	6.74	-128.1	10.29	~250	14.96	clear/no odor
11:45	2	14.09	6.06	131	2.00	-133.6	79.6	~250	15.02	" "
11:50	4	13.53	5.78	130	1.22	-131.9	74.4	~250	15.02	" "
11:55	6	13.33	5.71	130	0.93	-135.4	70.4	~250	15.00	" "
12:00	8	13.25	5.73	130	0.82	-139.0	43.9	~250	15.02	" "
1205	9	13.29	5.72	129	0.79	-140.4	48.4	~250	15.03	" "
1210	11	13.31	5.73	130	0.71	-141.8	37.3	~250	15.02	" "
1215	13	13.34	5.72	131	0.75	-136.8	38.0	~250	15.02	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ122D-20120912	40 mL VOA	3	HCl	VOCs	12:20

Comments

Signature: J. Ehlen | Date: 9/12/12

Well ID: SAPZ123S

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/11/12
Time: Start 15:48 am/pm
Finish 16:28 am/pm
Project No: 60264489
Site Location: Calverton
Weather Conds: ~75°F, Sunny, no wind
Collector(s): J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 19.10
b. Water Table Depth 9.61
c. Water Column (a-b) 9.49
d. Calculated Water Column Volume 1.55 gal
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124 AD
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
15:53	1	18.07	4.85	114	3.59	-143.1	18.4	~300	9.60	clear/no odor
15:58	3	17.60	4.77	114	2.99	-149.4	10.64	"	9.60	" "
16:03	5	17.34	4.72	114	3.10	-156.3	6.73	"	9.60	" "
16:08	7	17.24	4.69	112	3.39	-160.0	5.00	"	"	" "
16:13	9	17.18	4.67	114	1.63	-164.1	3.30	"	"	" "
16:18	10	17.15	4.67	114	1.58	-169.7	4.22	"	"	" "
16:23	12	17.08	4.68	115	1.59	-170.6	3.82	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ123S-20120911	40mL VOA	3	HCl	VOC	1625

Comments

Signature J Ehlen
Date 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAPZ123I1

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/11/12 Time: Start 1350 am/pm
Project No: 60264489 Finish 14:40 am/pm
Site Location: Calverton
Weather Conds: ~70°F, sunny, little wind Collector(s): J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 44.35 c. Water Column (a-b) 34.24 Casing Diameter/Material

b. Water Table Depth 10.11 d. Calculated Water Column Volume 5.59 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124 AD
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1355	1	16.35	5.23	103	2.31	-132.5	2.48	~250	10.07	no odor/clear
1400	2	16.20	5.21	103	2.27	-132.1	1.37	~250	10.10	no odor/clear
1405	4	15.04	4.66	102	0.85	-131.3	7.32	~250	10.10	" "
1410	6	14.97	4.58	102	0.72	-129.7	9.40	~250	10.10	clear/no odor
1415	8	14.87	4.65	102	0.63	-139.9	7.74	~250	10.10	" "
1421	10	14.66	4.62	102	0.59	-140.1	9.24	~250	10.10	" "
1426	11	14.56	4.78	102	0.66	-145.4	5.79	~250	10.10	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ123I1-20120911	40mL VOA	3	HCl	VOCs	1430

Comments DOH takes VOC & metals here + inorganics (nitrates)

Signature J Ehlen Date 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAPZ124

Low Flow Ground Water Sample Collection Record

Client: Nevy Date: 9/21/12 Time: Start 1243 am/pm
Project No: 60264489 Finish _____ am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, little to no wind Collector(s): JE JR

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 8 c. Water Column (a-b) — Casing Diameter/Material 1" SS
b. Water Table Depth — d. Calculated Water Column Volume —

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	05H1718
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1245	NA	14.22	6.38	123	-0.20	-30.2	20.0	~300	NA	clear/no odor
1250	"	13.94	6.31	121	-0.18	-36.1	4.88	"	"	" "
1250	"	13.87	6.33	121	-0.16	-38.7	3.05	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ124-20120921	40ml VOA/2oz/4oz	7/1/1	3-HCl/4-MeOH/2-ice	VOCs, TOCs	1255
SAPZ DUP05-20120921	"		"	"	

Comments

Signature J Eh Date 9/21/12

RESOLUTION CONSULTANTS

Well ID: SAP7125

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/21/12 Time: Start 1005 am/pm
Project No: 60264489 Finish _____ am/pm
Site Location: Calverton
Weather Conds: _____ Collector(s): JE/JR

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 6 c. Water Column (a-b) — Casing Diameter/Material 1" SS
b. Water Table Depth NA d. Calculated Water Column Volume —

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	05H1718	650
LaMotte	210	2020we

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1007	NA	13.08	5.35	68	2.18	151.8	3.07	~400	NA	clear/no odor
1016	"	12.87	5.32	53	0.68	162.6	1.19	"	"	" "
1022	"	12.94	5.33	56	0.56	168.2	0.67	"	"	" "
1031	"	12.98	5.30	52	0.45	183.6	0.55	"	"	" "
1042	"	12.94	5.28	52	0.44	182.8	0.52	"	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP7125-20120921	40 mL VOA	3	HCl	VOCs	1045
SASW125-20120921	~~2oz~~ 40mL VOA	3	HCl	VOCs	↓
SASD125-20120921	40 mL VOA	4	MeOH	VOCs	↓
	2oz & 4oz jar	2	ice	TOCs	↓

Comments: an ms/msD was collected @ this location

Signature: [signature] Date: 9/21/12

Well ID: SAMW131D

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/18/12
Time: Start 1435 am/pm
Project No: 60264489
Finish _____ am/pm
Site Location: Calverton
Weather Conds: ~70°F, overcast, breezy
Collector(s): K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 72
c. Water Column (a-b) 63.4
Casing Diameter/Material 2" PVC
b. Water Table Depth 8.60
d. Calculated Water Column Volume 10.35

2. WELL PURGE DATA

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	00B0797AA	
	la Motte	210	

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1442	1	15.74	6.21	113	17.61	-16.1	4.66	~250	8.64	clear, no odor
1447	2	14.66	6.15	89	9.72	-20.3	2.62	~250	8.62	" "
1452	3	14.53	6.19	89	7.27	-23.9	3.63	~250	8.62	" "
1457	4	14.47	6.24	89	5.69	-27.1	2.56	"	8.62	" "
1502	5	14.42	6.27	89	5.00	-28.6	2.44	"	8.62	" "
1507	6	14.38	6.28	89	4.47	-29.3	2.37	"	8.62	" "
1512	8	14.35	6.30	89	4.03	-30.4	2.21	"	8.62	" "
1517	9	14.32	6.31	89	3.92	-30.6	3.54	"	8.62	" "
1522	10	14.37	6.32	90	3.78	-30.9	3.16	"	8.62	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SA-MW131D-20120918	VOA	3	HCl	VOCs	1530
SA-MWDUP04-20120918	40mL VOA	3	HCl	VOCs	↓

Comments _____

Signature _____ Date _____

SA-

Well ID: MW1325

Low Flow Ground Water Sample Collection Record

Project: Navy Date: 9/18/12 Time: Start 11:15 am/pm
Project No: Finish 12:06 am/pm
Site Location: Calverton
Weather Conds: ~ 67°F windy, overcast Collector(s): KB

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length _____ c. Water Column (a-b) _____ Casing Diameter/Material

b. Water Table Depth 6.31 d. Calculated Water Column Volume _____ 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	La Motte		
	YSI	06B0747	

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1120	1	18.05	5.39	67	12.78	26.7	6.90	~250	6.31	clear, org odor
1125	2	17.13	5.36	58	7.66	19.2	4.25	"	"	" "
1130	3.5	16.89	5.36	52	6.28	18.1	5.10	"	"	
1135	4.5	16.70	5.33	48	5.16	19.2	3.27	"	"	" "
1140	5.5	16.67	5.28	48	4.39	22.7	2.45	"	"	" "
1145	7	16.73	5.24	46	3.94	25.9	2.00	"	"	" "
1150	8	16.90	5.22	46	3.66	27.9	2.29	"	"	" "
1155	9	16.98	5.20	45	3.56	29.1	2.17	"	"	" "
1200	10	16.97	5.19	45	3.42	30.3		"	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SA-MW1325-20120918	VOAs	3	HCl	VOCs	1202

Comments _____

Signature [signature] Date 9/18/12

RESOLUTION CONSULTANTS

Well ID: SAPZ140I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton
Date: 9/11/12
Time: Start 1535 am/pm
Finish 1630 am/pm
Project No:
Site Location:
Weather Conds: Sunny 80°
Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 52.5
b. Water Table Depth 13.09
c. Water Column (a-b) 38.41
d. Calculated Water Column Volume _____
Casing Diameter/Material 1" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic 47

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1540		13.01	6.56	76	24.04	79.2	1.07	500	N/A	
1545		12.71	6.16	74	14.12	80.9	1.23	500	N/A	
1550		12.63	6.07	74	11.61	83.5	0.79	500	N/A	
1555		12.62	6.05	74	10.88	84.8	0.98	500	N/A	
1600		12.60	6.05	74	10.65	85.7	1.15	500	N/A	
1605		12.61	6.04	73	10.47	86.1	1.12		N/A	
/										

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ140I20120911	40 mL glass	3	HCl	VOCs	1610

Comments: Cannot collect water levels 5/8" tubing in 1" PVC

Signature _____ Date _____

RESOLUTION CONSULTANTS

Well ID: SAPZ142I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/11/12 Time: Start 1415 am/pm
Project No: Finish 1515 am/pm
Site Location:
Weather Conds: Sunny 80° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 48.6 c. Water Column (a-b) 32.91 Casing Diameter/Material
b. Water Table Depth 15.69 d. Calculated Water Column Volume 43ft 1" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	02F0329
	LaMotte		2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1435								600		
1440		12.67	6.25	77	19.27	73.1	1.58	500	NA	
1445		12.62	6.23	77	17.34	72.8	0.98	500	NA	
1450		12.57	6.20	78	16.41	71.2	0.78	500	NA	
1455		12.48	6.20	78	15.97	69.3	1.21	550	NA	
1500		12.62	6.20	78	15.48	69.0	.88	550	NA	
1505		12.37	6.19	78	15.20	66.4	0.78	550	NA	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ142I20120911	40mL glass	3	HCl	VOCs	1510

Comments: Cannot collect VOCs 5/8" tubing in 1" PVC

Signature Date

RESOLUTION CONSULTANTS

Well ID: SAP2143I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/11/12 | Time: Start 1100 am/pm, Finish 1245 am/pm

Project No:

Site Location:

Weather Conds: Sunny | Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 48.6 | c. Water Column (a-b) 33.48 | Casing Diameter/Material 1" PVC

b. Water Table Depth 15.12 | d. Calculated Water Column Volume

2. WELL PURGE DATA

a. Purge Method: peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	02F0329
	LaMotte		2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1155										Smooth
1140		12.73	6.40	99	25.21	42.6	5.37	550	NA	
1145		12.46	6.25	99	22.38	45.7	1.37	550	NA	
1150		12.57	6.21	99	20.35	48.7	0.76	550	NA	
1155		12.36	6.20	99	19.58	50.2	0.0	550	NA	
1200		12.84	6.30	98	20.54	47.8	1.26	550		
1205										
	8 gallons									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2143I20120911	40 mL glass	3	HCL	VOCs	1210

Comments: DOH split

cannot collect WLs - 5/8" tubing in 1" well

Signature: | Date: 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAP2144I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 9/12/12 Time: Start 1500 am/pm
Project No: Finish 1645 am/pm
Site Location:
Weather Conds: Collector(s):

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 52.4 c. Water Column (a-b) 43.11 Casing Diameter/Material
b. Water Table Depth 9.29 d. Calculated Water Column Volume 47ft 1" PVC

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	02F0329
LaMotte	2020	238

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1545		19.26	6.23	130	8.89	17.1	9.35	250	9.32	
1550		19.41	6.24	130	6.68	15.9		150	9.31	
1600		18.38	6.22	126	6.59	18.1	3.00	150		
1605		17.72	6.19	124	6.12	23.7	2.39	180		
1610		16.81	6.17	120	6.37	27.7	2.49	180		
1615		15.93	6.13	119	6.58	31.4		180	9.31	
1620		15.62	6.12	118	6.36	32.9	3.88	180	9.31	

adjust CPM

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2144I 20120912	40 mL glass	3	HCl	VOCs	1625

Comments

Signature Date

6 CPM 7/3

RESOLUTION CONSULTANTS

Well ID: PZ 145I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton Date: 4/18/12 Time: Start 1400 am/pm
Project No: Finish 1530 am/pm
Site Location:
Weather Conds: Cloudy 75° Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 38.0 c. Water Column (a-b) 22.35 Casing Diameter/Material
b. Water Table Depth 10.65 d. Calculated Water Column Volume _____ 1" PVC

38 ft

2. WELL PURGE DATA

a. Purge Method: Peristaltic 1/4" Teflon

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1430								800		OK
1435		13.78	5.75	0.076	0.10	52.1	14.5	400	10.85	
1440		13.69	5.73	0.076	0.07	52.4	4.24	400	10.87	
1445		13.62	5.75	0.076	0.07	51.8	2.11	400	10.87	
1450		13.57	5.76	0.076	0.06	51.0	2.38			
1455		13.62	5.76	0.076	0.06	50.8				
1500		13.61	5.76	0.076	0.06	50.0	2.38	400	10.75	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic 1/4" Teflon

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SA PZ145I20120918	40mL glass	9	HCl	VOCs	1505
MS, MSD					

Comments DOH split

Signature Paul Kuetto Date 4/18/12

RESOLUTION CONSULTANTS

Well ID: PZ145D

Low Flow Ground Water Sample Collection Record

Client: Nancy Calverton Date: 9/18/12 Time: Start 1400 am/pm
Project No: Finish 1610 am/pm
Site Location:
Weather Conds: Cloudy 75 Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 58.0 c. Water Column (a-b) _____ Casing Diameter/Material
b. Water Table Depth 11.11 d. Calculated Water Column Volume _____ 1" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic "4" Teflon 54 ft

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	600XL	~~05H1719~~ 05H1718
La Motte	2020	2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1530								500		ON
1535		14.08	6.48	0.073	-4.2	-50.7	13.2	400	11.15	
1540		13.75	6.13	0.067	-0.24	-33.5				
1545		13.66	6.10	0.066	-0.16	-36.4	3.59			
1550		13.71	6.11	0.065	-0.13	-39	2.55	400	11.15	
1555		13.71	6.09	0.065	-0.13	-41.9	2.66	400	11.14	
1600		13.72	6.09	0.064	-0.09	-43.7	1.85	400		
1605		13.69	6.09	0.064	-0.11	-45.2	1.45	400		

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2145D20120918	40mL glass	3	HCl	VOCs	1610

Comments 54 ft to silicone tubing junction

Signature Paul Kraeck Date 9/18/12

RESOLUTION CONSULTANTS

Well ID: SAPZ 147

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/21/12 Time: Start 1329 am/pm
Project No: 60264489 Finish _____ am/pm
Site Location: Calverton
Weather Conds: ~75°F, sunny, little to no wind Collector(s): JE/JR

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 6 c. Water Column (a-b) —
b. Water Table Depth — d. Calculated Water Column Volume —
Casing Diameter/Material 1" SS

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

2 HS04 TOC

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	05H1718
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1331	NA	15.10	5.66	79	0.57	92.9	84	~350	NA	clear/no odor
1335	"	13.69	5.40	75	0.16	103.6	13.1	"	"	" "
1340	"	13.71	5.31	75	0.09	111.6	3.39	"	"	" "
1345	"	13.68	5.36	75	0.06	113.7	3.50	"	"	" "
1350	"	13.70	5.40	75	0.05	116.0	3.30	"	"	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ147-20120921	VOA	3	HCl	VOCs	1355

Comments

Signature [signature] Date 9/21/12

RESOLUTION CONSULTANTS

Well ID: SAPZ148

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/21/12 Time: Start _____ am/pm
Project No: ~~148~~ 60264489 Finish _____ am/pm
Site Location: Calverton
Weather Conds: _____ Collector(s): JE/JR

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 6 c. Water Column (a-b) — Casing Diameter/Material 1" SS
b. Water Table Depth NA d. Calculated Water Column Volume —

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	05H1718
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1156		13.48	5.24	46.	-0.9	126.6	1.28	~400	—	~~no~~ clear/NA
1202		13.31	5.07	45	-0.23	105.9	.85			
12:07		13.22	5.05	45	-0.23	99	.93			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ148-20120921	VOA	3	HCl	VOCs	1210

Comments _____

Signature _____ Date 9/21/12

RESOLUTION CONSULTANTS

Well ID: SAPZ166I

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/12/12
Time: Start 9:02 am/pm
Finish _____ am/pm
Project No: ~~60268~~
Site Location: Calverton
Weather Conds: ~65°F
Collector(s): J. Ehlen / K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 61.50
b. Water Table Depth 6.75
c. Water Column (a-b) 54.75
d. Calculated Water Column Volume 8.94 gal
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
Lamotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
9:05	<1	15.71	6.05	188	4.53	-118.8	7.78	~250	6.76	clear/no odor
9:11	1.0	14.54	6.39	149	1.27	-161.8	6.80	~250	2.30	" "
9:16	3	14.24	6.56	148	0.81	-172.7	2.33	250	6.81	" "
9:21	4	14.24	6.61	149	0.74	-174.0	3.01	250	6.82	" "
9:26	5	14.24	6.62	149	0.73	-174.1	4.88	250	6.89	" "
9:30	6	14.18	6.80	150	0.58	-176.0	9.01	"	6.78	" "
935	7	14.19	6.84	151	0.54	-176.5	11.24	"	6.75	" "
940	8	14.15	6.86	151	0.50	-176.9	12.48	"	6.74	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ166I-20120912	40mL VOA	3	HCl	VOCs	9:43

Comments

Signature J. Ehlen
Date 9/12/12

RESOLUTION CONSULTANTS

Well ID: SA P2 171 I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/11/12 | Time: Start 0900 am/pm | Finish 1045 am/pm

Project No:

Site Location:

Weather Conds: Sunny 50-75° | Collector(s): PK, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 49.0 | c. Water Column (a-b) 33.29 | Casing Diameter/Material

b. Water Table Depth 15.71 | d. Calculated Water Column Volume | 1" PVC

2. WELL PURGE DATA

a. Purge Method: peristaltic tubing to 44'

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	02F0329
	Lamotte		2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1000								600		start
1005		11.99	6.21	96	30.56	25.2	4.36	500	N/A	
1010		11.73	6.13	94	28.04	30.1	2.13	550	N/A	
1015		11.74	6.19	93	27.11	30.1	1.2	500	N/A	
1020		11.70	6.20	93	26.68	29.2	2.24	500		
1025		11.66	6.23	93	25.60	29.1	0.75	500		
	6 gallons									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAP2171I 2012-09-11	40mL	3	HCl	VOCs	1030

Comments: split sample collected by Suffolk County, cannot take VOCs - 1/4" tubing fills the 1" PVC

Signature: Paul Kneeth | Date: 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAPZ172I

Low Flow Ground Water Sample Collection Record

Client: Navy Calverton | Date: 9/11/12 | Time: Start 1245 am/pm | Finish 1415 am/pm

Project No:

Site Location:

Weather Conds: Sunny 80 | Collector(s): PR, SC

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 50.8 | c. Water Column (a-b) 35.06 | Casing Diameter/Material 1" PVC

b. Water Table Depth 15.74 | d. Calculated Water Column Volume

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	600XL	0250329
	LaMotte		2384110

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1325										Start
1330		12.28	6.30	81	21.85	52.0	1.6	550	N/A	
1335		12.06	6.18	81	18.92	59.1	.68	550	N/A	
1340		12.09	6.14	81	18.14	60.7	.57	550	N/A	
1345		12.09	6.16	81	17.80	61.9	.87	550	N/A	
1350		11.89	6.15	81	17.25	62.3	.98	550		
	7 gallons									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: peristaltic

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ172I20120911	40 mL glass	2	HCl	VOCs	1400

Comments: DOH collected a split

cannot collect WLs 5/8" tubing in 1" well

Signature: | Date: 9/11/12

RESOLUTION CONSULTANTS

Well ID: SAPZ123I

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/11/12 Time: Start 1345 am/pm
Project No: 60264489 Finish 1555 am/pm
Site Location: Calverton
Weather Conds: ~70°F, sunny, little wind Collector(s): K. Barbour

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 83.90 c. Water Column (a-b) 73.16 Casing Diameter/Material
b. Water Table Depth 10.74 d. Calculated Water Column Volume 11.94 gal 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	~~210~~ 05H1718
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1405	~1.5	15.72	6.04	151		3.7	728	~300	10.50	~~clear~~, cloudy
1410	~3	15.23	6.00	151	1.37	11.8	903	"	10.53	" "
1415	~4	15.06	5.95	151	1.00	11.9	925	"	10.51	" "
1420	~5	14.77	6.04	151	0.86	11.9	828	"	10.54	" "
1425	~6	14.57	6.06	150	1.00	14.2	724	"	10.53	" "
1435	~7	14.60	6.07	150	0.89	16.3	654	"	10.52	" "
1440	~8.5	14.61	5.98	150		16.5	136	"	10.51	" "
1445	~9.5	14.57	6.01	150	0.83	16.0	108	"	10.53	" "
1455	~11	14.73	6.09	150	0.88	16.1	93	"	10.50	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

(continued on back)

If no or N/A - Explain below.
Pumped for 2 hours turbidity still above 50NTU, all other parameters stable

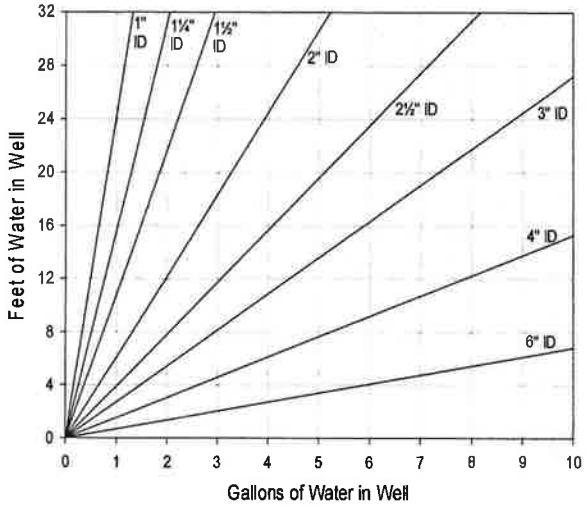
3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAPZ123I-20120911	40mL VOA	3	HCl	VOCs	1550

Comments

Signature [signature] Date 9/11/12

Well ID:



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1500	11	14.68	6.07	148	0.90	16.5	89.8	300	10.56	Clear, no odor
1506	12	14.48	6.05	151	0.81	17.1	72.0	300	10.53	" "
1515	15.0	14.36	6.06	142	0.84	16.7	112	300	10.52	" "
1520	16.0	14.27	6.05	150	0.79	16.7	127	300	10.61	Cloudy " "
1530	17.0	14.37	6.07	150	0.74	15.9	113	300	10.68	" " "
1535	18.0	14.30	6.07	150	0.64	15.7	87.5		10.71	" " "
1540	20	13.88	6.09	150	0.08	14.4				

Well ID: SAmw131I

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy
Date: 9/18/12
Time: Start 1435 am/pm
Finish 1538 am/pm
Project No: 60264489
Site Location: Calverton
Weather Conds: ~70°F, overcast, breezy
Collector(s): J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 42
b. Water Table Depth 8.92
c. Water Column (a-b) 33.08
d. Calculated Water Column Volume 5.40 gal
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	650	02G1124
LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1442	2	16.05	5.97	67	9.65	-109.2	2.09	~250	8.95	clear / no odor
1447	3	13.87	5.64	71	4.74	-134.7	0.95	~250	8.96	" "
1452	5	14.22	5.60	72	2.33	-141.3	1.24	"	8.97	" "
1457	6.5	14.18	5.59	73	1.32	-146.8	1.09	"	8.99	" "
1502	8.5	14.14	5.57	72	0.96	-148.8	1.26	"	8.99	" "
1507	10	14.13	5.55	72	0.66	-147.0	1.11	"	"	" "
1512	12	14.08	5.55	72	0.57	-147.8	1.75	"	"	" "
1517	14	14.01	5.55	72	0.50	-151.2	1.81	"	"	" "
1522	16	14.13	5.54	72	0.45	-154.6	1.74	"	9.00	" "

(continued on back) →

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

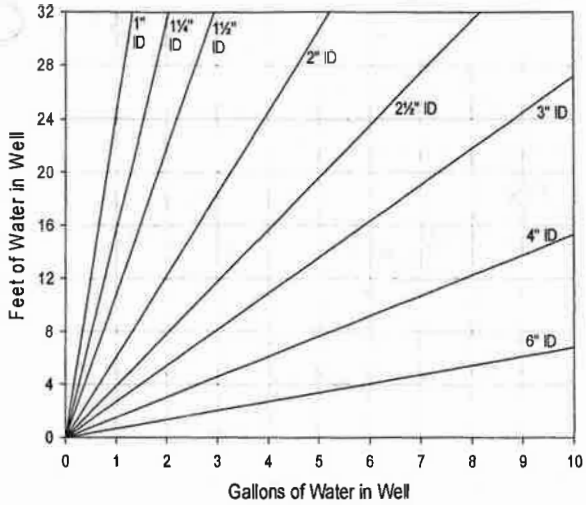
Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW131I-20120918	40 mL VOA	3	HCl	VOCs	1535

Comments

Signature

Date

Well ID: SAMW131I



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

16L removed @ 1522

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1527	18	14.22	5.49	72	0.42	-153.1	3.09	~250	9.00	clear/no odor
1532	20	14.20	5.47	72	0.41	-152.7	3.38	~250	9.00	" "

RESOLUTION CONSULTANTS

Well ID: SAMW132I

Low Flow Ground Water Sample Collection Record

Client: Navy Date: 9/18/12 Time: Start 11:16 am/pm
Project No: 60264489 Finish 1224 am/pm
Site Location: Calverton
Weather Conds: ~70°F, breezy, overcast Collector(s): J. Ehlen

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length _____ c. Water Column (a-b) _____ Casing Diameter/Material

b. Water Table Depth 6.31 d. Calculated Water Column Volume _____ 2" PVC

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	650	02G1124
	LaMotte	2020we	210

Time (24hr)	Volume Remove (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:20	1	15.60	5.81	78	5.03	-142.7	6.38	300	6.31	clear/no odor
11:26	3	14.56	5.67	87	3.43	-150.9	4.62	300	6.31	" "
11:30	4.5	14.47	5.67	88	2.86	-148.1	5.16	300	6.31	" "
11:35	6	14.31	5.72	89	2.40	-151.1	4.93	"	"	" "
11:40	8	14.35	5.76	89	2.05	-156.5	4.14	"	"	" "
11:45	10	14.29	5.80	90	1.71	-159.7	5.25	"	"	" "
11:50	12	14.11	5.83	89	1.41	-158.8	4.60	"	"	" "
11:55	14	14.17	5.83	89	1.22	-162.3	4.77	"	"	" "
12:00	15	14.13	5.84	89	1.07		5.63	"	"	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back) →

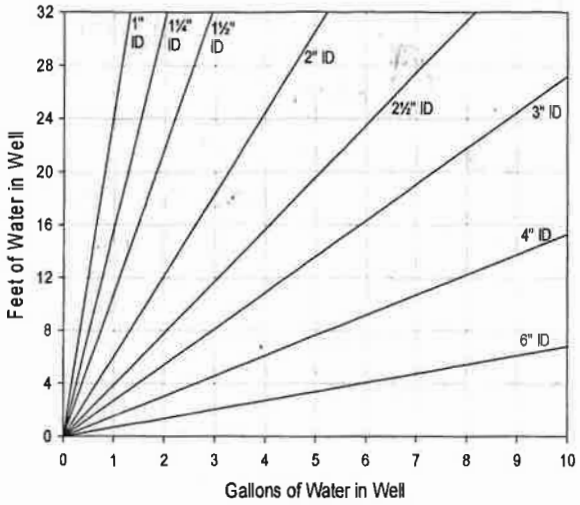
3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
SAMW132I-20120918	40mL VOA	3	HCl	VOCs	1222

Comments _____

Signature J Ehlen Date 9/18/12

Well ID: SAMW132I



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Purge Volume Calculation

15L removed @ 12:00

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
12:05	16.5	14.17	5.86	90	0.92	-163.5	7.22	~300	6.31	clear/no odor
12:10	18	14.16	5.87	94	0.75	-167.9	6.27	"	"	" "
12:15	20	14.11	5.87	89	0.69	-168.3	6.26	"	"	" "
1220	22	14.15	5.88		0.68	-165.2	5.99	"	"	" "

Appendix B

Chain of Custody Forms

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

BIDS002

CHEMTECH PROJECT NO.
QUOTE NO.
COC Number 027052

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Tetra Tech
ADDRESS: 5700 Lake Wright Drive
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Dave Brayack
PHONE: (757) 461-3824 FAX: (757) 461-4148

CLIENT PROJECT INFORMATION

PROJECT NAME: NWIRP Colverton
PROJECT NO.: LOCATION: Colverton, NY
PROJECT MANAGER: Dave Brayack
e-mail:
PHONE: (757) 461-3824 FAX: (757) 461-4148

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: DAYS *
HARD COPY: DAYS *
EDD: DAYS *
PREAPPROVED TAT: ☐ YES ☐ NO
* STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ LEVEL 1: Results only ☐ Others
☐ LEVEL 2: Results + QC
☐ LEVEL 3: Results (plus results raw data) + QC
☐ LEVEL 4: Results + QC (all raw data)
☐ EDD Format:

ANALYSIS / PRESERVATIVES / COMMENTS

← Specify Preservatives: A – HCl, B – HNO_3, C – H_2SO_4, D – NaOH, E – ICE, F – Other

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 VOA (A)	2	3 VOA (E)	4	5	6	7	8	9	COMMENTS
1.	SA-TB01-20120517	QC		✓	5/17/12	0800	2	✓									Trip Blank
2.	SA-SW-204-20120517	Aq		✓	5/17/12	0830	6	✓									Do MS/MSD
3.	SA-SD-204-20120517	Sed.		✓	5/17/12	0835	3			✓							Do MS/MSD
4.	SA-PZ-125-20120517	GW		✓	5/17/12	0915	2	✓									
5.	SA-SW-125-20120517	Aq		✓	5/17/12	0930	2	✓									
6.	SA-SD-125-20120517	Sed.		✓	5/17/12	0935	1			✓							
7.	SA-PZ-Dup01-20120517	GW		✓	5/17/12	1400	2	✓									
8.	SA-SW-124-20120517	Aq		✓	5/17/12	0955	2	✓									
9.	SA-SD-124-20120517	Sed.		✓	5/17/12	1000	1			✓							
10.	SA-SW-201-20120517	Aq		✓	5/17/12	1020	2	✓									

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature]	5/17/12 1600	1.
RELINQUISHED BY: 2.	DATE/TIME:	RECEIVED BY: 2.
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant Cooler Temp.
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments:
Ice in Cooler?:

Page 1 of 2

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☐ OVERNIGHT
CHEMTECH: ☐ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☐ YES ☐ NO

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO.
COC Number 027053

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Tetra Tech
ADDRESS: 5700 Lake Wright Drive
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Dave Brayack
PHONE: (757) 461-3824 FAX: (757) 461-4148

CLIENT PROJECT INFORMATION

PROJECT NAME: NWIRP Colverton
PROJECT NO.: LOCATION: Colverton, NY
PROJECT MANAGER: Dave Brayack
e-mail:
PHONE: (757) 461-3824 FAX: (757) 461-4148

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: _____ DAYS *
HARD COPY: _____ DAYS *
EDD: _____ DAYS *
PREAPPROVED TAT: ☐ YES ☐ NO
* STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ LEVEL 1: Results only ☐ Others _____
☐ LEVEL 2: Results + QC
☐ LEVEL 3: Results (plus results raw data) + QC
☐ LEVEL 4: Results + QC (all raw data)
☐ EDD Format: _____

ANALYSIS / PRESERVATIVES / COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 VOA	2	3 VOA	4	5	6	7	8	9	COMMENTS
								E A		E							← Specify Preservatives A–HCl B–HNO_3 C–H_2SO_4 D–NaOH E–ICE F–Other
1.	SA-SW-DUP01-20120517	Aq.		✓	5/17/12	1300	2	✓									
2.	SA-SD-201-20120517	Sed.		✓	5/17/12	1025	1			✓							
3.	SA-SD-DUP01-20120517	Sed		✓	5/17/12	1200	1			✓							
4.	SA-PZ-147-20120517	GW		✓	5/17/12	1050	6	✓									D, MS/MSD
5.	SA-PZ-124-20120517	GW		✓	5/17/12	1110	2	✓									
6.	SA-PZ-146-20120517	GW		✓	5/17/12	1130	2	✓									
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature]	5/17/12 1600	1.
RELINQUISHED BY: 2.	DATE/TIME:	RECEIVED BY: 2.
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant Cooler Temp. _____
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments:
Ice in Cooler?: _____

Page 2 of 2

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☐ OVERNIGHT
CHEMTECH: ☐ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☐ YES ☐ NO

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Waverly Brighton

Client: Resolution Consultants	Contact: ~~Robert Fortner~~ JE	Phone #: (978) 905-2133	Fax #: ( )
Address: 20 Exchange Place, 13th Floor	City: New York	State: NY	Zip Code: 10005
Purchase Order #: /	Proj. Name / No.: Caldwelton		Katahdin Quote #:
Bill (if different than above):	Address:		
Sampler (Print / Sign): J. Ehlen / K. Barlow / P. Kareth / S. Chatterjee			Copies To:

LAB USE ONLY WORK ORDER #:

KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: _____

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	FC-MW05S-20120910	9/10/12 / 11:50	GW	3	X									
	FC-MW05I-20120910	9/10/12 / 11:50	GW	3	X									
	FC-MW-02SR1	9/10/12 / 16:20	GW	3	X									
	FC-MW-02IR1	9/10/12 / 16:40	GW	3	X									
	FC-PZ05I1-20120910	9/10/12 / 13:50	GW	3	X									
	FC-MW03SR1-20120911	9/11/12 / 9:50	GW	3	X									
	FC-MW03SR1-20120911MS	9/11/12 / 9:50	GW	3	X									
	FC-MW03SR1-20120911MSD	9/11/12 / 9:50	GW	3	X									
	SAPZ118I-20120911	9/11/12 / 11:50	GW	3	X									
	SAPZ118S-20120911	9/11/12 / ~~11:50~~ 11:35	GW	3	X									
	SAPZ123I1-20120911	9/11/12 / 14:30	GW	3	X									
	SAPZ123I-20120911	9/11/12 / 15:50	GW	3	X									
	SAPZ123S-20120911	9/11/12 / 16:25	GW	3	X									
	SAPZ140I-20120911	9/11/12 / 16:10	GW	3	X									
	SAPZ142I-20120911	9/11/12 / 15:10	GW	3	X									
	SAPZ172I-20120911	9/11/12 / 14:00	GW	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/14/12 17:10				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Resolution Consultants	Waverly Brandon	(978) 905-2133	( )

Address: 20 Exchange Place, 13th Floor City: New York State: NY Zip Code: 10005

Purchase Order # Proj. Name / No. Katahdin Quote #

Bill (if different than above) Address

Sampler (Print / Sign): See Page 1 of 1 Copies To:

LAB USE ONLY WORK ORDER #:

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ❒ FED EX ❒ UPS ❒ CLIENT

AIRBILL NO:

TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs (Filt. ☐Y ☒N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	SAP7143I-20120911	9/11/12 / 12:10	GW	3	X									
	SAP7171I-20120911	9/11/12 / 16:30	GW	3	X									
	Trip Blank-1	9/11/12 / 17:10	W	3	X									
		/												
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehl	9/11/12 17:10				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Resolution Consultants
Contact: Waverly Braunstein
Phone #: (978) 905-2133
Fax #: ( )
Address: 20 Exchange Place, 18th floor
City: New York
State: NY
Zip Code: 10005
Purchase Order #:
Proj. Name / No.: Calverton
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): J. Ehlen / K. Barbour / S. Chatterjee / P. Kareth
Copies To:

LAB USE ONLY
WORK ORDER #:
KATAHDIN PROJECT NUMBER
REMARKS:
SHIPPING INFO: ❒ FED EX ❒ UPS ❒ CLIENT
AIRBILL NO:
TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N
					DOCS									
	SAPZ166I-20120912	9/10/12 / 9:43	GW	3	X									
	SAPZ122D-20120912	9/12/12 / 12:20	GW	3	X									
	SAPZ122I-20120912	9/12/12 / 14:07	GW	3	X									
	SAMW129D-20120912	9/12/12 / 16:40	GW	3	X									
	FTPZ456S-20120912	9/12/12 / 10:40	GW	3	X									
	FTPZ458I-20120912	9/12/12 / 14:30	GW	3	X									
	SAPZ144I-20120912	9/12/12 / 16:25	GW	3	X									
	EB-1-20120913	9/13/12 / 7:45	W	3	X									
	SAMW129I-20120913	9/13/12 / 9:35	GW	3	X									
	SAMW129S-20120913	9/13/12 / 10:20	GW	3	X									
	SAMW128D-20120913	9/13/12 / 13:02	GW	3	X									
	SAMW128I-20120913	9/13/12 / 13:32	GW	3	X									
	SAMW127I-20120913	9/13/12 / 15:33	GW	3	X									
	SAPZ149I-20120913	9/13/12 / 16:55	GW	3	X									
	SAPZ135I-20120913	9/13/12 / 15:10	GW	3	X									
	FTPZ462S-20120913	9/13/12 / 13:10	GW	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/13/12 17:30				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

KAS-COC1

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Resolution Consultants	Contact: Waverly Braunstein	Phone #: (978) 905-2133	Fax #: ( )
Address: 20 Exchange Place, 13th floor	City: New York	State: NY	Zip Code: 10005
Purchase Order #:	Proj. Name / No.: Calverton		Katahdin Quote #: X
Bill (if different than above):	Address:		
Sampler (Print / Sign): J. Chlen / P. Kareth / S. Chatterjee / K. Barbour		Copies To:	

LAB USE ONLY

WORK ORDER #:

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ❒ FED EX ❒ UPS ❒ CLIENT

AIRBILL NO:

TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs (Filt. ☐Y ☑N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	FTPZWP02-20120913	9/13/12 11:45	GW	3	X									
	FTPZ455S-20120913	9/13/12 10:45	GW	3	X									
	Trip Blank-2-20120913	9/13/12 —	W	3	X									
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Eld	9/13/12 17:30				
Relinquished By: (Signature)	**Date / Time**	**Received By: (Signature)**	**Relinquished By: (Signature)**	**Date / Time**	**Received By: (Signature)**

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

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Client: Resolution Consultants
Contact: Waverly Braunstein
Phone #: (978) 905-2133
Fax #: ( )

Address: 20 Exchange Place, 13th floor
City: New York
State: NY
Zip Code: 10005

Purchase Order #:
Proj. Name / No.: Calverton
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): J. Ehlen / K. Barbour / P. Kareth / S. Chatterjee
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AIRBILL NO:
TEMP°C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ☐Y ☑N VOCs	Filt. ☐Y ☑N VOCs (504.1)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	Trip Blank 03-20120917	9/5/12 / 11:00	W	2		X								
	FTMW05S-20120917	9/17/12 / 1600	GW	5	X	X								
	FTPZ452S-20120917	9/17/12 / 14:30	GW	3	X									
	FTMW03S-20120917	9/17/12 / 13:25	GW	3	X									
	FTMW02S-20120917	9/17/12 / 11:15	GW	5	X	X								
	FTMW07S-20120917	9/17/12 / 15:08	GW	3	X									
	FTMW07S-20120917MS	9/17/12 / 15:08	GW	3	X									
	FTMW07S-20120917MSD	9/17/12 / 15:08	GW	3	X									
	FTMW02I-20120917	9/17/12 / 13:45	GW	5	X	X								
	FTMW01S-20120917	9/17/12 / 1138	GW	3	X									
	FTMW01I-20120917	9/17/12 / 1150	GW	3	X									
	FTMW05I-20120917	9/17/12 / 1650	GW	5	X	X								
	FTMWDUP01-20120912	9/17/12 / 17:30	GW	5	X	X								
	FTMW08I-20120918	9/18/12 / 920	GW	3	X									
	FTMW08S-20120918	9/18/12 / 953	GW	3	X									
	SAMW132I-20120918	9/18/12 / 1222	GW	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/18/12 1700				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Resolution Consultants
Contact: Waverly Braunstein
Phone #: (978) 905-2133
Fax #: ( )
Address: 20 Exchange Place, 13th floor
City: New York
State: NY
Zip Code: 10005
Purchase Order #:
Proj. Name / No.: Navy / Calverton
Katahdin Quote #:
Bill (if different than above):
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TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ❒Y ☑N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N
					VOCs			1530 ↓						
	SAMW132S-20120918	9/18/12/1202	GW	3	X									
	SAMW131D-20120918	9/18/12/1530	GW	3	X									
	SAMW131I-20120918	9/18/12/1535	GW	3	X									
	SAMWDUP04-20120918	9/18/12/1530	GW	3	X									
	FTMW06S-20120918	9/18/12/1000	GW	3	X									
	FTMW06I-20120918	9/18/12/0920	GW	3	X									
	FTPZ460I-20120918	9/18/12/1210	GW	3	X									
	FTPZ461I-20120918	9/18/12/1325	GW	3	X									
	SAPZ145I-20120918	9/18/12/1505	GW	3	X									
	SAPZ145I-20120918ms	9/18/12/1505	GW	3	X									
	SAPZ145I-20120918msD	9/18/12/1505	GW	3	X									
	SAPZ145D-20120918	9/18/12/1610	GW	3	X									
	TripBlank 4-20120918	9/18/12/—	W	3	X									
		/												
		/												
		/												

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/18/12 1700				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Fax: (207) 775-4029

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Client: Resolution Consultants	Contact: Waverly Braunstein	Phone #: (978) 905-2133	Fax #: ( )
Address: 20 Exchange Place, 13th floor	City: New York	State: NY	Zip Code: 10005
Purchase Order #	Proj. Name / No.: Galveston		Katahdin Quote #
Bill (if different than above)	Address		
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ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ☐Y ☑N VOCs	Filt. ☐Y ☑N Metals	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	SAMW126D-20120919	9/19/12/1347	GW	3	X									
	SAMW126I-20120919	9/19/12/1443	GW	3	X									
	SAMW126S-20120919	9/19/12/1612	GW	3	X									
	SAPZ161I-20120919	9/19/12/1500	GW	4	X	X								
	SAPZ DUP 03-20120919	9/19/12/1600	GW	4	X	X								
	SAPZ157II-20120919	9/19/12/1340	GW	4	X	X								
	SAPZ157II-20120919MS	9/19/12/1340	GW	4	X	X								
	SAPZ157II-20120919MSD	9/19/12/1340	GW	4	X	X								
	SAPZ157I-20120919	9/19/12/1300	GW	4	X	X								
	SAPZ163I-20120919	9/19/12/1640	GW	3	X									
	Trip Blank-05-20120919	9/19/12/—	W	3	X									
	EB-2-20120920	9/20/12/745	W	4	X	X								
	FTPZ451S-20120920	9/20/12/1023	GW	3	X									
	~~FTPZ451S-20120920~~	~~9/20/12/~~	~~GW~~	~~3~~	~~X~~									
	FTPZ454S-20120920	9/20/12/1135	GW	3	X									
	SAPZ138II-20120920	9/20/12/0940	GW	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/20/12 1230				
Relinquished By: (Signature)	**Date / Time**	**Received By: (Signature)**	**Relinquished By: (Signature)**	**Date / Time**	**Received By: (Signature)**

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Fax: (207) 775-4029

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Client	Contact	Phone #	Fax #
Resolution Consultants	Waverly Braunstein	(978) 905-2133	( )

Address: 20 Exchange Place, 13th floor | City: New York | State: NY | Zip Code: 10005

Purchase Order # | Proj. Name / No.: Calverton | Katahdin Quote #

Bill (if different than above) | Address

Sampler (Print / Sign): J. Ellen / P. Kareth / K. Barbour / S. Chatterjee | Copies To:

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ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs	Filt. ❒Y ☒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N
	SAP2139I-20120920	9/20/12/1045	GW	3	X										
	SAP2134I-20120920	9/20/12/1150	GW	3	X										
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica [illegible]	9/20/12 1230				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Client: Resolution Consultants
Contact: Waverly Brownstein
Phone #: (978) 502-5363
Fax #: ( )

Address: 20 Exchange Place, 13th floor
City: New York
State: NY
Zip Code: 10005

Purchase Order #:
Proj. Name / No.: Calverton
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): J. Ehlen J. Rolling
Copies To:

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KATAHDIN PROJECT NUMBER
REMARKS:

SHIPPING INFO: ❒ FED EX ❒ UPS ❒ CLIENT
AIRBILL NO:
TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ❒Y ❒N: VOCs	Filt. ❒Y ❒N: TOCs	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N
	SASW125-20120921	9/21/12/1045	W	3	X									
	SASW125-20120921 ms	9/21/12/1045	W	3	X									
	SASW125-20120921 msD	9/21/12/1045	W	3	X									
	SAPZ125-20120921	9/21/12/1045	GW	3	X									
	SAPZ125-20120921 ms	9/21/12/1045	GW	3	X									
	SAPZ125-20120921 msD	9/21/12/1045	GW	3	X									
	SASD125-20120921	9/21/12/1045	Sed	6	X	X								
	SASD125-20120921 ms	9/21/12/1045	Sed	6	X	X								
	SASD125-20120921 msD	9/21/12/1045	Sed	6	X	X								
	SAPZ148-20120921	9/21/12/1210	GW	3	X									
	SAPZ124-20120921	9/21/12/1255	GW	3	X									
	SASW124-20120921	9/21/12/1255	W	3	X									
	SASD124-20120921	9/21/12/1255	Sed	6	X	X								
	SAPZDUP05-20120921	9/21/12/1255	GW	3	X									
	SASDDUP05-20120921	9/21/12/1255	Sed	6	X	X								
	SAPZ147-20120921	9/21/12/1355	GW	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehlen	9/21/12 1730				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Fax: (207) 775-4029

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Contact: Waverly Braunstein
Phone #: (978) 3025363
Fax #: ( )
Address: 20 Exchange Place, 13th floor
City: New York
State: NY
Zip Code: 10005
Purchase Order #:
Proj. Name / No.: Calverton
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): J. Ihlen / J. Rolling
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KATAHDIN PROJECT NUMBER
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TEMP°C ❒ TEMP BLANK ❒ INTACT ❒ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ❒Y ☒N VOCs	Filt. ❒Y ☒N TOCs	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N	Filt. ❒Y ❒N
	SASW201-20120921	9/21/12/1415	W	3	X									
	SASD201-20120921	9/21/12/1415	Sed	6	X	X								
	SASW204-20120921	9/21/12/1500	W	3	X									
	SASD204-20120921	9/21/12/1500	Sed	6	X	X								
	SASWDUPOS-20120921	9/21/12/1255	W	3	X									
	TripBlank-06-20120921	9/21/12/—	W	3	X									
	TripBlank07-20120921	9/21/12/—	W	4	X									
	EB-3-20120921	9/21/12/1600	W	5	X	X								
		/												
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Jessica Ehl	9/21/12 1730				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Appendix C

Field Notebooks

Thursday 5-17-12

0725 Vince Shickora (VS) onsite, weather: clear, cool - Temp in mid 50°s F
· VS calibrates Horiba (see Field Calibration logs).
00 Jessica Ehlen (JE) of Resolution Consultants onsite - discuss activities / Health + Safety items
120 VS and JE proceed to SA-SW-204 location
330 VS collects sample SA-SW-204 (MS/MSD) (see sample logs for details.
335 VS collects sample SA-SD-204 (MS/MSD) (see sample logs for details)
42 VS and JE proceed to next location
15 VS collects SA-PZ-125 (piezometer)
(450) and SA-PZ-DUP01 - note - Horiba Malfunction
930 VS collects sample SA-SW-125
935 VS collects sample SA-SD-125
Note → battery dead on peristaltic will recharge and sample piezometers later
955 VS collects SA-SW-124
00 VS collects SA-SD-124 (1300)
020 VS collects SA-SW-201 and SA-SW-DUP01
025 VS collects SA-SD-201 and SA-SD-DUP01
033 VS obtains 2nd battery for peristaltic (1300) and proceeds to SA-PZ-147

[signature] 5-17-12

1045 VS begins purge on SA-PZ-147
1050 VS collects sample SA-PZ-147 (MS/MSD)
1105 VS begins purge on SA-PZ-124
1110 VS collects sample SA-PZ-124
1125 VS begins purge on SA-PZ-146
1130 VS collects sample SA-PZ-146
1145 VS loads equipment to vehicle
1150 VS and JE proceed to recon southern area wells located on county property and Sportsmans club property. Also recon all staff gauge locations.
1355 VS and JE proceed to site 6A decon IDW storage location - recon area
1435 JE leaves site
1445 VS begins sample paperwork and packaging
1615 Paperwork / packaging complete
1620 VS recons IDW drums → look OK
1630 VS locks gate to decon area and proceed to FED Ex to ship samples to Lab.

[signature] 5-17-12

Calverton

Rite in the Rain®

ALL-WEATHER

ENVIRONMENTAL FIELD BOOK

№ 550F

Book #1

NWIRP Calverton

Groundwater, Surface Water and Sediment Sampling Program

September 2012 Sampling Event

Contact List

Name	Role(s)	Company, Office Location & Phone	Cell Phone
Robert Forstner	PM	AECOM – NYC (212) 798-8586	(917) 597-3866
Jessica Ehlen	Field Manager/SSO	AECOM – NYC (212) 798-8514	(516) 581-7313
Paul Kareth	Field Manager	AECOM – Chestnut Ridge, NY (845) 425-4980	(973) 891-4882
Kristen Barbour	Field Support	AECOM – NYC (212) 798-8603	(646) 455-8723 (516) 650-1141
Saby Chatterjee	Field Support	AECOM – Chestnut Ridge, NY (845) 425-4980	(267) 303-2760
John Rollino	Field Support	AECOM – NYC (212) 798-8607	(973) 722-7979
Waverly Braunstein*	Project Chemist*	AECOM – Chemsford, MA (978) 905-2133	(978) 502-5363
Al Taormina	Calverton Facility Manager (Office – NWIRP Bethpage)	H&S Environmental (516) 346-0344	(516) 702-5861
Jen Obrin*	Laboratory PM*	Katahdin Analytical (207) 874-2400	
Paul Shueman	Property Owner Rep	Peconic River Sporstman's Club (631) 727-5248	(631) 872-8610
Don or Brian Jergens 631-375-7514	Property Owner Rep	Swan Lake Golf Club (631) 369-1818	Jason Scharf

* **Waverly Braunstein** (AECOM Project Chemist – Chelmsford, MA office) is the primary point of contact for lab coordination; contact at office or via cell phone from 7am-10pm. Contact Jen Obrin directly only if Waverly and Robert Forstner (PM) are unavailable.

Sample Shipment Info:

Monday thru Thursday shipments (Tuesday thru Friday delivery)	Friday shipments (Saturday delivery)
Katahdin Analytical Services Attn: Sample Receiving 600 Technology Way Scarborough, ME 04222 207-874-2400	Katahdin Analytical Services Attn: Sample Receiving 95 Hutchins Drive Portland, ME 04102 207-874-2400 **** Mark as "Hold for pickup" and check the "Saturday delivery box", and provide number of coolers and tracking numbers to Waverly ASAP on Friday ****

AECOM FedEx Account Number (If Katahdin-supplied airbills are unavailable): 0100-3531-7

Project Number (Labor, ODCs & Sample Shipment): **60264489-FI.FS**

Cory Bowe CHM2HILL

757-435-4872

Cliff Walden

352-514-9022

Kevin Lombardo - call to get on site

703-608-8247

H&S Environmental, Inc.

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Name Robert Forstner

Address 20 Exchange Place, 13th floor
New York, NY 10005

Phone 212-798-8500

Project Calverton

Book #1

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

Specifications for this book:

Page Pattern		Cover Options	
Left Page	Right Page	Polydura Cover	Fabrikoid Cover
Columnar	1/4" Grid	Item No. 550	Item No. 550F

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CONTENTS

PAGE	REFERENCE	DATE
3	Sept. 5 2012	
5	Sept. 6 2012	
8	Sept. 10 2012	
9	Sept. 11 2012	
12	Sept. 12 2012	
15	Sept. 13 2012	
18	Sept. 14 2012	
19	Sept. 17 2012	
21	Sept. 18 2012	
24	Sept. 19 2012	
26	Sept. 20 2012	
28	Sept. 21 2012	
145	Drum inventory	

Reference Page Index

147 Error codes, Hazardous classifications, Container types
148 Sampling guidelines (Liquids)
149 Sampling guidelines (Solids)
150 Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
151 PVC Pipe casing tables
152 Soil Classification
153 Soil Classification
154 Conversions (Length, Weight, Volume, Temp., etc.)
155 Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
156 Maximum Concentration of Contaminants for the Toxicity Characteristic

CONTENTS

PAGE	REFERENCE	DATE

Location Calverton Date 9/5/12

Project / Client Navy

8:00 - Jessica Ehlen arrives on site, Paul Kareth and Al Taormina already on site at community center.

8:05 - Move to drum staging area.

weather: ~80°F, humid, light wind

objective: Mobilize to site and familorize with site.

8:50 - Al leads us to site 2 to have Safety meeting with CH2HILL. Talk about ammunition, safety points, safety zones, biological hazards.

10:15 - Mr. John on site delivers Porta-John to stagging area.

10:45 - Al off site, JE & PK begin locating all wells. PZ-165I bent.

12:00 - JE & PK move to Sportsmans club meet w/ Paul Schumann, we will notify him by phone before we Sample. JE & PK locate wells onsite.

12:30 - JE & PK move to locations South of Grumman Blvd. JE shows PK entrance to wells. JE notices legs are itchy and finds chiggers

Location Calverton Date 9/5/12

Project / Client Navy

on legs. JE & PK move to stagging to remove chiggers.

1300-1345 - Heavy rain and thunder and lightning.

1430 - Drive to golf course to check out MW in the area. Golf course was closed, JE & PK resume checking for monitoring wells.

1530 - Return to stagging area.

1545 - JE & PK offsite.

J Ehlen
9/5/12

Location Calverton Date 9/6/12

Project / Client Navy

730 - JE and PK arrive on site.

Weather: ~75°F, foggy, overcast, little to no wind, humid.

objective: gauge monitering wells.

7:40 - H & S meeting.

PID 2000 SN 110-014497 - U.S. Environmental using factory calibration.

8:25 At Golf course to meet Don and gauge wells. Brian Jergens says we can just park on Grumman Blvd and walk down along the woods to the wells.

8:40 - Gauging FT-PZ 456 S/I

9:55 - Finish gauging wells on River Rd.

10:00 - Gauging wells in woods.

11:40 - Finish gauging, locating, and marking wells within forestsath of Grumman Blvd.

11:50 - @ Staging area (Lunch)

12:10 - Resume gauging.

13:40 - Gauged most wells North of Grumman Blvd, meeting miller environmental with drum delivery.

1345 - Miller Environmental onsite with

Location Calverton Date 9/6/12
Project / Client Navy

drums. (10 reconditioned drums delivered).
1355- Miller environmental offsite,
Al Taormina calls JE to see if we can set up sampling @ Area 2 for monday 9/10/12. Sampling on Monday would be to prevent a stoppage of work for the UXO Crew because they need to set up a Screener in the sampling area.
JE says they will sample Area 2 on 9/10/12, the crew will be meeting @ 8:00AM and will be to Area 2 around 8:15, will call Kevin wen we need to get over there. Kristen Barbour & Saby Chatterjee will need to have safety meeting first thing monday onsite.
*Need 40 hr training cert, 8hr refreshers & medical clearance. Level D PPE required. Also send electronic copy of HASP & SOP.
14:10- Finish gauging wells North of Grumman Blvd, moving to wells on Connecticut Ave.

Location Calverton Date 9/6/12
Project / Client Navy

15:10 - finish gauging wells on Connecticut Ave, move to gauge wells in area 6 & 10
16:00 - JE calls RF with end of day update, PK offsite.
16:05 - JE offsite

J. Ehlen
9/6/12

Location Calverton Date 9/10/12
Project / Client Navy

800 - Paul Kareth, Jessica Ehlen, Saby Chatterjee, and Kristen Barbour of Resolution Consultants meet @ Community center @ Scott Ave and Grumman Blvd.
weather - Clear, ~72°F, light wind
objective - Groundwater sampling.
810 - At staging area unloading truck
830 - Safety meeting
840 - Begin looking threw coolers at sample bottles
910-935 - calibrate equipment.
945 - Packing equipment into trucks.
1000-11:00 - Setting up on FCMW055&I.
11:00 - Pumping FCMW055&I
11:50 - Sampling FCMW055&I
11:52 - Finish sampling FCMW055&I, stop pumps.
11:55 - move to ~~AT~~ FC-PZ05I1
1200-1240 - Having trouble setting up 1" bladder pump.
12:45 - JE off site. KB, PK, & SC still trying to get 1" bladder pump working.

J. Ehlen
9/10/12

Location Calverton Date 9/11/12
Project / Client Navy

700 - JE, KB, PK, SC onsite
weather: ~60°F, sunny, breezy
objective: GW sampling
7:15 - H&S meeting.
7:25 - Calibrating equipment.
7:45 - Packing up equipment.
8:15 - JE & KB begin setting up on FC-MW035R1, PK & SC mob to Southern area
8:58 - JE & KB begin pumping FC-MW035R1.
9:50 - Sampling FC-MW035R1, collecting MS/MSD sample here.
10:00 - Finish sampling FC-MW035R1.
10:15-10:45 - decon pump mob to SAPZ118S/I.
10:50 - Setting up on SAPZ118S/I
11:28 - Pumping SAPZ118S
11:30 - Pumping SAPZ118I
11:50 - Sampling SAPZ118I
11:52 - Finish pumping SAPZ118I
11:55 - Sampling SAPZ118S
11:58 - Finish sampling SAPZ118S
1200 - Packing up equipment.
1215 - At staging area, deconing

Location Navy Date 9/11/12
Project / Client Calverton

equipment, lunch.
1300 - Move back to Connecticut Ave, setting up on SAPZ123I1/I.
1345 - Begin Pumping SAPZ123I
1350 - Begin Pumping SAPZ123I1
1430 - Sampling SAPZ123I1, DOH collects split sample here for VOCs, metals, inorganics (nitrates)
14:40 Finish sampling SAPZ123I1, still pumping SAPZ123I due to high turbidity.
14:50 - JE goes to staging area to decon pump.
15:15 - 1545 - JE setting up pump on SAPZ123S.
1548 - Start pumping SAPZ123S
1550 - Sampling SAPZ123I, turbidity still high after 2 hours of pumping, all other parameters stable.
1555 - Finish pumping SAPZ123I
1625 - Sampling SAPZ123S
1628 - Finish sampling SAPZ123S, packing up equipment
1650 - @ staging area, SC/KB deconing

Location Navy Date 9/11/12
Project / Client Calverton

equipment, JE/PK packing up samples.
1725 ~~1525~~ - JE/PK head to Fedex, SC & KB finishing up ~~Sam~~ JE deconing equipment.
1735 - KB/SC offsite.
1745 - JE/PK finish @ Fedex.

J. Ehlen
9/11/12

Location Calverton Date 9/12/12

Project / Client Navy

700 - JE, PK, SC, KB onsite.
710 - Safety meeting
weather: ~65°F, sunny, little to no wind
objective: GW Sampling
720 - Calibrating equipment
745 - Packing equipment into cars and going over plan for the day.
815 - Setting up on SAPZ166I
902 - Begin pumping SAPZ166I
943 - Sampling SAPZ166I
945 - Finish sampling SAPZ166I, begin packing up equipment.
1000-1020 - decon pump.
1025 - Setting up on SAPZ122D
1045-1115 - KB goes to staging area to get more air line tubing.
11:38 - Pumping SAPZ122D.
12:20 - Sampling SAPZ122D
12:22 - Finish sampling SAPZ122D
12:30 - Begin pumping SAPZ122I
12:40 - No water comming out. Water goes into flow threw cell and goes right back down well.
12:50 - Pump still not working. JE calls

Location Calverton Date 9/12/12

Project / Client Navy

PK to find out why pump isn't working. PK is also having pump trouble and only got one well done so far today. PK tells JE to check upper ball valve of pump.
12:55 - JE finds no upper ball valve in pump, KB goes to staging area to get ball valve.
1300 - JE calls Robert Forstner to inform him of today's pump troubles and also tells him about hearing a close by gun shot from the woods East of Connetticut Ave (away from the sportsman's club).
1330 - Pumping SAPZ122I
1420 - Sampling SAPZ122I
1422 - Finish sampling SAPZ122I, packing up car.
1445 - Deconing pumps.
1510 - Setting up on SAMW129D
1600 - Pumping SAMW129D
1640 - Sampling SAMW129D
1644 - Finished sampling SAMW129D

Location Navy Date 9/12/12
Project / Client Calverton

1700- Back @ Staging area deconing pump. PK & SC are also deconing their pumps
1745- All off site

J. Ehlen
9/12/12

Location Navy Date 9/13/12
Project / Client Calverton

7:00- JE, PK, SC, & KB onsite
weather: ~65°F, sunny, little to no wind
objective: GW sampling
7:15- H&S meeting
7:20-7:40- Calibrating equipment, SC collects Equipment Blank sample
8:00- Go over plan for the day.
8:10- Mob to SAMW129 S/I.
8:20- Setting up on SAMW129I.
9:00- Pumping SAMW129 I
9:05- JE meets Mr. John to service Porta-John.
9:35- Sampling SAMW129I
9:38- Finish sampling SAMW129I, setting up on SAMW129S.
9:50- Start pumping SAMW129S.
10:42- Sampled SAMW129S
10:44- Finished sampling SAMW129S, packing up car.
11:00-11:10- decon pumps
11:25- Setting up on SAMW128D.
11:40- Start pumping SAMW128D
12:45- JE calls Paul Schoeman from the gun club and left message

Location: Navy Date: 9/13/12
Project / Client: Calverton

that we would like to gauge wells tomorrow.
1250 - Paul Schumann texts JE that tomorrow is okay to gauge wells.
13:03 - Sample SAMW128D
13:05 - Finish sampling SAMW128D
13:08 - Start pumping SAMW128I
13:32 - Sample SAMW128I
13:34 - Finish sampling SAMW128I, packing car, going to decon pumps.
1420 - Setting up on SAMW127I
1457 - Pumping SAMW127I
1533 - Sampled SAMW127I
1535 - Finished pumping SAMW127I, pack up truck
15:56 - Deconing pump, last well for the day SAPZ163I cannot be sampled with the large tubing for the peristaltic pump. Will have to wait for more tubing (smaller tubing) and additional peripumps.
16:25 - At SAPZ149I helping SC/PK.
17:30 - Packing Fedex package

Location: Calverton Date: 9/13/12
Project / Client: Navy

of Samples
17:40 - JE drops off samples @ Fedex
17:50 - JE leaves for the day

J. Ehlen
9/13/12

Location Calverton Date 9/14/12

Project / Client Navy

7:00 - JE, KB, SC, PK onsite
weather: ~65°F, sunny, light wind
objective: Gauge monitoring wells.
7:15 - H&S meeting.
7:30 - Suit up with tyvek
7:45-8:00 - Make plan of action for gauging
8:30 - Begin gauging wells.
11:00 - Head to UXO area to gauge wells
12:00 - KB calls JE, KB has ticks all over tyvek and chiggers on legs. JE calls Robert Forstner to inform. ~~KB~~ JE
12:35 - JE/PK/SC/KB meet @ staging area. KB wipped everything off and cleaned car, does not appear to have any bites yet.
15:15 - KB removes tick from leg, it was attached, tick removed in full.
16:30 - All offsite, finished GW gauging.

J. Chen
9/14/12

Location Calverton Date 9/17/12

Project / Client Navy

800 - KB, PK, JE, SC onsite.
815 - Calibrating YSI's & turbidity meters.
830 - Safety meeting
weather: ~70°F, sunny, light breeze
objective: GW sampling site 2.
9:05 - Equipment packed in cars, mob to site 2
915 - Arrive @ Site 2
925 - Safety meeting.
1000 - @ least 3 drums - 2 possible solvent (turpentine) 1 - possible paint. Stock piled soils are some type of petroleum or kerosene & concrete pad. wed is perferable for sampling drums.
10:15 - loading up equipment to mob to FT-MW01S/I.
10:30 - setting up on FT-MW01S/I.
11:02 - Start pumping FT-MW01S
11:12 - Start pumping FT-MW01I.
11:38 - Sampling FT-MW01S
11:42 - Finished pumping FT-MW01S
11:50 - Sampling FT-MW01I

Location Navy Date 9/17/12
Project / Client Calverton

11:52 - Finished pumping FT-MW01I.
12:00 - 12:30 - Packing equipment going to mob to staging area to decon pumps.
1300 - Back @ site 2 setting up on FTMW02I.
1315 - Begin pumping FT-MW02I.
1345 - Sampling FTMW02I
1348 - Finish pumping FTMW02I, packing up, moving to next location.
1435 - Begin pumping FTMW07S.
1508 - Sampling FTMW07S & collecting ms/msD here.
1513 - Finished pumping FT-MW07S.
1525 - Car packed up, leave to decon pumps.
16:05 - KB & JE back @ site 2, helping PK/SC, to late to start another set of wells. JE inventories equipment / tubing & writes up COC's.
17:00 - JE/KB @ staging area emptying buckets.
17:40 - All off site.

J. Eller 9/17/12

Location Navy Date 9/18/12
Project / Client Calverton

700 - JE, PK, KB, SC
weather: ~70°F, overcast, breezy, forecast for rain and strong winds in afternoon, possible T-storms.
objective: Continue groundwater sampling.
715 - H&S meeting followed by equipment calibration.
815 - @ site 2 setting up on FT-MW-08S/I
8:39 - Start pumping FT-MW08S
8:48 - Start pumping FT-MW08I
920 - Sample FTMW08I
923 - Finish pumping FTMW08I
953 - Sampling FTMW08S
955 - Finish pumping FTMW08S, packing up equipment. Joe from DOH should be here @ ~10:45am
1010 - 1035 - Decon pumps, mob to Peconic Sportsmans club.
11:15 - Pumping SAMW132S
11:16 - Pumping SAMW132I.
11:20 - Strong gusty winds, light rain on and off.
1202 - Sampling SAMW132S

Location Calverton Date 9/18/12

Project / Client Navy

12:04 - Finished pumping SAMW-132S.
12:22 - Sampling SAMW132I
12:24 - Finished sampling SAMW132I, packing up equipment, going to decon equipment.
1310 - Finish decon'ing equipment. KB/JE leave to get lunch.
1340 - JE/KB back from lunch.
1355 - JE/KB setting up on SAMW131I/D
1435 - Begin pumping SAMW131 I & D.
1525 - PK asks JE for rest of teflon tubing. US Environmental shipping us more tubing for tomorrow morning.
1530 - Sampling SAMW131D, collecting DUP04 from this location.
1535 - Finish pumping SAMW131D, begin sampling SAMW131I.
1538 - Finish pumping SAMW131I
1545 - Navy Clean and Robert Forstner on site.
1605 - Navy offsite, JE/KB showing Rob Forstner to staging area, stop @ SAPZ145I/D to meet with Paul & Saby. Navy informs

Location Calverton Date 9/18/12

Project / Client Navy

us that we are currently under a tornadoe watch. RF informs PK/SC/& Joe from DOH. They are almost finished sampling.
1630 - Navy on site @ staging area along with Resolution Consultants. JE/KB deconing equipment, PK/SC packing up samples to be shipped to lab.
1700 - Navy & Tetratech offsite.
1715 - Resolution Consultants offsite, JE leaves to drop samples @ Fed ex.
1735 - JE leaves Fed ex. Package of tubing from U.S. environmental should be to Fed ex @ ~9:30am on wednesday 9/19/12. JE informs crew that start time will be 10:00 AM Wednesday 9/19/12.

J. Ehler
9/18/12

Location: Navy Date: 9/19/12
Project / Client: Calverton

10:00 - JE/SC/PK/KB onsite
weather: ~70°F, Sunny, light breeze
objective: GW sampling.
10:15 - Calibrating equipment, Paul picked up tubing from FedEX @ ~9:30 am.
10:30 - Getting bottleware together and going over plan of action for the day.
10:50 - Packing up equipment in cars.
11:15 - Setting up on SAMW126D.
11:30 - JE goes to get extra air line.
11:50 - Resume set up on SAMW126D.
12:30 - Start pumping SAMW126D.
12:33 - No water from water line water coming out air line. Stop pumping to fix problem.
12:55 - Pump fixed, begin pumping SAMW126D.
13:47 - Sampling SAMW126D
13:49 - Finished sampling SAMW126D.
14:00 - Begin pumping SAMW126I.
14:10 - KB leaves to decon pump.
1443 - Sampling SAMW126I.

Location: Navy Date: 9/19/12
Project / Client: Calverton

1445 - Finish pumping SAMW126I, setting up on SAMW126S.
1515 - Begin pumping SAMW126S.
1612 - Sampling SAMW126S
1615 - Finish pumping SAMW126S
1635 - Finish packing car, KB/JE check on PK/SC and head back to staging area to empty buckets and decon pumps.
1710 - Resolution Consultants offsite.

J. Ehlen
9/19/12

Location Navy Date 9/20/12
Project / Client Calverton

700 - JE, KB, PK, SC on site. JE & PK were onsite until 5:30 on 9/19/12 trying to fix the gate (a pin fell out and there were no cotter pins to hold it in place.

Weather: ~65°F, partly cloudy, breezy

Objective: GW Sampling.

715 - H&S meeting
725 - Calibrating equipment
815 - Fixing fence with wire used as cotter pins.
8:30 - Mr. John on site to clean porta-John.
8:40 - Mr. John offsite
8:45 - JE/KB set up on FT-PZ451S.
8:50 - No water
9:55 - Begin pumping FT-PZ451S, needed larger silicon tubing to make peristaltic pump get suction.
1023 - Sampling FTPZ451S
1025 - Finish pumping FTPZ451S
1045 - Emptying water buckets
1053 - Begin setting up on FTPZ454S.

Location Navy Date 9/20/12
Project / Client Calverton

1105 - Begin pumping FTPZ454S.
1135 - Sampling FTPZ454S.
1138 - Finish sampling FTPZ454S, packing up equipment.
1200 - @ staging area arranging equipment/packing up samples.
1300 - JE, PK, SC, KB off site, PK off to Fed ex.

J. Ehlen
9/20/12

Location Calverton Date 9/21/12

Project / Client Navy

700 - JE, PK, John Rollino (Res Con) on site.

710 - 820 - JE, PK, JR go over plan for the day, calibrate equipment, package bottle wear and prepair to traverse the Peconic River.

830 - JE & JR leave for Conn. Ave boat launch to meet Joe M. from DOH. PK prepares for sampling unknown contaminants from site 2. PK will be in full level C PPE.

850 - JE, JR, & DOH set fourth on Peconic River.

1500 - JE, JR finish last surface water and sediment sample location 204. JE did not take notes in field book along the river due to carrying equipment and walking through mucky water. Many locations along the river are very hard to get to. River bottom was very soft in many

Location Calverton Date 9/21/12

Project / Client Navy

locations and walking through was trucherous because you sink in the mud and struggle to get out with every step. The banks of the rivers were not much better. They were still mucky and pizometers were overgrown with brush. Many locations had poison ivy. JR will talk with RF about safety issues involved with this.

1530 - JE, JR, PK are packing up samples, writting labels, and packing up all field equipment for de-mob.

1800 - JE, JR, PK offsite, JR will bring samples to fed ex and will inform RF of # of coolers and tracking numbers.

J. Ehlen
9/21/12.

Location _____ Date _____

Project / Client _____

Location _____ Date _____

Project / Client _____

Drum Inventory

Drum ID	Contents	date	full
Purge water-1	purge water	9/10/12	X
Purge water-2	purge water	9/11/12	X
Purge water-3	purge water	9/13/12	X
Purge water-4	purge water	9/17/12	X
Purge water-5	GW	9/18/12	X
Purge water-6	GW	9/20/12	X

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Book #2

drum labels con # from Label Master
L82945

NWIRP Calverton
Groundwater, Surface Water and Sediment Sampling Program
September 2012 Sampling Event

Contact List

Name	Role(s)	Company, Office Location & Phone	Cell Phone
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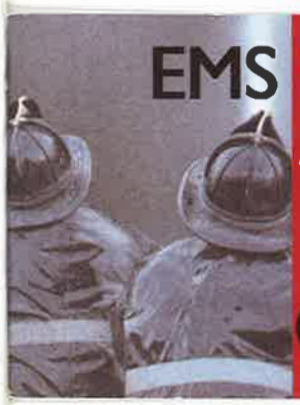
Paul Kareth	Field Manager	AECOM – Chestnut Ridge, NY (845) 425-4980	(973) 891-4882
Kristen Barbour	Field Support	AECOM – NYC (212) 798-8603	(646) 455-8723 (516) 650-1141
Saby Chatterjee	Field Support	AECOM – Chestnut Ridge, NY (845) 425-4980	(267) 303-2760
John Rollino	Field Support	AECOM – NYC (212) 798-8607	(973) 722-7979
Waverly Braunstein*	Project Chemist*	AECOM – Chemsford, MA (978) 905-2133	(978) 502-5363
Al Taormina	Calverton Facility Manager (Office – NWIRP Bethpage)	H&S Environmental (516) 346-0344	(516) 702-5861
Jen Obrin*	Laboratory PM*	Katahdin Analytical (207) 874-2400	
Paul Shueman	Property Owner Rep	Peconic River Sportsman's Club (631) 727-5248	(631) 872-8610
Don or Brian Jergens	Property Owner Rep	Swan Lake Golf Club (631) 369-1818	

* Waverly Braunstein (AECOM Project Chemist – Chelmsford, MA office) is the primary point of contact for lab coordination; contact at office or via cell phone from 7am-10pm. Contact Jen Obrin directly only if Waverly and Robert Forstner (PM) are unavailable.

Sample Shipment Info:

Monday thru Thursday shipments (Tuesday thru Friday delivery)	Friday shipments (Saturday delivery)
Katahdin Analytical Services Attn: Sample Receiving 600 Technology Way Scarborough, ME 04222 207-874-2400	Katahdin Analytical Services Attn: Sample Receiving 95 Hutchins Drive Portland, ME 04102 207-874-2400 ** Mark as "Hold for pickup" and check the "Saturday delivery box", and provide number of coolers and tracking numbers to Waverly ASAP on Friday **

AECOM FedEx Account Number (if Katahdin-supplied airbills are unavailable): 0100-3531-7
Project Number (Labor, ODCs & Sample Shipment): 60264489-FI.FS



EMS Fire/Rescue

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Rite in the Rain
ALL-WEATHER WRITING PAPER

ALL-WEATHER
ENVIRONMENTAL FIELD BOOK

Name Robert Forstner

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Project Calverton

Book #2

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CONTENTS

PAGE	REFERENCE	DATE

Reference Page Index

147 Error codes, Hazardous classifications, Container types
148 Sampling guidelines (Liquids)
149 Sampling guidelines (Solids)
150 Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
151 PVC Pipe casing tables
152 Soil Classification
153 Soil Classification
154 Conversions (Length, Weight, Volume, Temp, etc...)
155 Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
156 Maximum Concentration of Contaminants for the Toxicity Characteristic

CONTENTS

PAGE	REFERENCE	DATE

Location Navy Calverton Date 9/10/12

Project / Client Monday

0530 load equipment, leave the Chestnut Ridge office
0745 arrive at the Site
calibrate equipment
Tailgate Health and Safety briefing
Paul Kareth, Sally Chatterjee,
Jessica Ghlen, Kristen Barbour
1030 PK & SC setup on FCMW05I
1150 collect sample FCMW05I 20120910
1300 set up on FCPZ05I1
1350 sample FCPZ05I1 20120910
1400 decon
1555 set up on FCMW02IR1
1640 Sample FCMW02IR1
1650 decon
1700 leave site

Paul Kareth

Location Navy Calverton Date 9/11/12
Project / Client Tuesday

0700 arrive at Site
Paul Kovath, Saby Chatterjee,
Kristen Barbour, Jessica Ehlen
Weather, sunny 75-85°
Calibrate equipment
Tailgate H&S meeting
0800 drive to wells, hike in equipment
to remote locations - PK & SC
0900 setup on SAPZ171I, purge
1030 collect sample SAPZ171I20120911
1100 setup on SAPZ143I
1210 collect sample SAPZ143I 20120911
1245 setup on SAPZ172I
1400 collect sample SAPZ172I20120911
1415 setup on SAPZ142I
1510 collect sample SAPZ142I 20120911
1535 setup on SAPZ140I
1610 collect sample SAPZ140I 20120911
1630 return to decon area
1700 leave site

Paul Kovath

Location Navy Calverton Date 9/12/12
Project / Client Wednesday

0700 arrive on site
Paul Kovath, Saby Chatterjee,
Jessica Ehlen, Kristen Barbour
calibrate equipment, H&S Briefing
weather: sunny 70-80°
0830 drive to wells
setup on FTPZ456S (PK & SC)
1040 collect sample FTPZ456S 20120912
1110 setup on PZ458I
pump problems, tubing issues - see
Sampling Record
1130 collect sample FTPZ458I 20120912
1500 setup on SAPZ144I
1625 collect sample SAPZ145I 20120912
1645 return to decon area
decon pumps
1700 leave site

Paul Kovath

Location Navy Calverton Date 9/13/12
Project / Client Thursday

0700 arrive on site
Paul Kareth, Saby Chatterjee,
Kristen Barbour, Jessica Ehlen
weather sunny 70-80°
Calibrate equipment, Tailgate meeting
0830 Second location FTPZ455S in the
woods, PK & SC hike in equipment
1045 collect sample FTPZ455S20120913
1130 setup on FTPZ462S
1310 collect sample FTPZ462S20120913
collect duplicate FTPZDUP022O20120913
1415 setup on SAPZ135I
1510 collect sample SAPZ135I20120913
1530 setup on SAPZ149I1
1655 collect sample SAPZ149I120120913
1710 return to decon area
1730 leave site

Paul Kareth

Location Navy Calverton Date 9/14/12
Project / Client Friday

0700 arrive on site
weather: sunny 70-80s
Jessica Ehlen, Kristen Barbour
Saby Chatterjee, Paul Kareth
H & S briefing
0800 well gauging, PK & SC, JE & KB
see well gauging sheets for details
0630 decon area
1700 leave site, return to office
1900 arrive at Chestnut Ridge
office, pick up new rental
equipment, drop off equipment
1930 end of day

Paul Kareth

Location Navy Calverton Date 9/17/12

Project / Client Monday

0530 Arrive at Chestnut Ridge office
load equipment
0600 leave for site
0800 arrive at the site
weather cloudy 65-75°, light drizzle
Paul Kareth, Jessica Ehlen,
Sally Chatterjee, Kristen Barbour
Calibrate equipment, H&S briefing
0915 at FT area
UXO briefing by CH2M Hill
1030 set up on FTMW-02S (PK&SC)
1115 collect sample FTMW02S 20120917 for
VOCs (8260) and VOCs 504.1
0.03" floating product did not use
flow cell
1220 set up on FTM03S
1325 collect sample FTMW03S 20120917
1340 set up on FTPZ 452S
1430 collect sample FTPZ452S 20120917
1445 set up on FTMW05S
1600 collect sample FTMW05S 20120917 for
VOCs (8260 and 504.1)
1605 Set up on FTMW05I
1730 Collect sample FTMW05I 20120917

Location Navy Calverton Date 9/17/12

Project / Client

1740 return to decon area
pack samples, decon gear
1800 leave site

Paul Kareth

Location Navy Calverton Date 9/18/12

Project / Client

0700 arrive on site
Jessica Ehlen, Kristen Barbour
Suby Chatterjee, Paul Kareth
weather: cloudy 65-70°, occ. rain
~~0810 PK setup on FT~~ calibrate equipment
H & S briefing
0810 setup on FTMW06I
0920 collect sample FTMW06I20120918
0925 setup on FTMW06S
1000 collect sample FTMW06S20120918
1015 scout locations
1045 setup on FTPZ46OI
1210 collect sample FTPZ46OI20120918.
Joe Martin (SCDOH) collected a split
1230 FTPZ46II
1325 Collect sample FTPZ246I20120918
SCDOH split
1400 set up on SAPZ145I
1505 collect sample SAPZ145I20120918
SCDOH split
1530 setup on SAPZ145D
1610 collect sample SAPZ145D20120918
1630 return to decon area, pack samples
1700 leave site
Paul Kareth

Location Navy Calverton Date 9/19/12

Project / Client

0900 at FedEx in Riverhead - pick up tubing from US Environmental
0930 arrive at site
Paul Kareth, Jessica Ehlen,
Kristen Barbour, Suby Chatterjee
weather: sunny 65-75°
H&S briefing, calibrate equipment
1130 set up on SAPZ157I (PK & SC)
1300 collect sample SAPZ157I 20120919
VOCs and metals
~~1440~~ 1300 set up on SAPZ157II
1340 collect sample SAPZ157II20120919
VOCs and metals plus MS, MSD
1410 setup on SAPZ161I
1500 collect sample SAPZ161I20120919
duplicate sample SAPZDUP032012091 9 @ 1600
1530 setup on SAPZ163I
casing is bent, can't get water level meter down the 1" PVC, bent about 6" bgs
1640 collect sample SAPZ163I20120919
return to staging area
1700 leave site
Paul Kareth

Location Navy Calverton Date 9/20/12

Project / Client

0900 arrive on site
Jessica Ehlen, Kristen Barbour
Soby Chatterjee, Paul Kareth
weather sunny 65-75°
Calibrate equipment, H&S briefing
0815 scout locations (PK and SC)
0830 set up on SAP2138I1
0940 collect sample SAP2138I120120920
1000 setup on SAP2139I
1045 collect sample SAP2139I20120920
1100 setup on SAP2134I
1150 collect sample SAP2134I20120920
return to decon area, end of
sampling effort for wells/piezometers
pack up gear, decon equipment
1300 leave site, drive to FedEx
drop off samples
1445 package from Katahdin arrives
-soil jars for Friday sampling
1500 end of day

Paul Kareth

Location Navy Calverton Date 9/21/12

Project / Client

0700 arrive on site
Paul Kareth Jessica Ehlen John Rollins
weather sunny 60-75°
H&S briefing, calibrate equipment
JE&JR leave for stream sampling
0900 PK to Fire Training Area for
soil sampling and drum sampling
0930 set up on Grid 4 (former pad)
collect composite soil sample from
3 pits (see photos)
G4 0-18 is 0-18 inches below the former
pad, not from GS, 18-36 is below.
Noticed an odor during the time
the backhoe was digging but did
not noticed the smell while sampling
FTG4018 @ 0940
FTG4 1836 @ 0955
1000 move to grid 3
composite from 3 pits
0-18 is below current grade (see photos)
FTG3018 @ 1000
FTG3 1836 @ 1015
1030 set up for drum sampling
in level C

Location Navy Calverton Date 9/21/12

Project / Client

1100 open 3 overpack drums
collect sample FTDRUM01
TCLP composite of paint sludge
paint is dry but pliable, breaks
easily into small pieces, collected
from the overpack with the
crushed drum.
Drum 2 overpack has about 4" of
liquid in it
Drum overpack 3 has a few inches
of dirt with paint mixed in
1115 leave FT area
1130 pack up groundwater sampling
equipment
1300 drive to Peconic River to meet up
with John Rollins and Jessica Ehlen
pack up samples, label bottles
load up equipment for demob
1800 leave site
2130 arrive at Chestnut Ridge Office.

Paul Kuehl

Location Date

Project / Client

Appendix D

Analytical Data Tables

Table D-1
Site 2 - Fire Training Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	FTMW01I	FTMW01S	FTMW02I	FTMW02S	FTMW03S	FTMW05I	FTMW05I (DUP)	FTMW05S	FTMW06I	FTMW06S	FTMW07S	FTMW08I
Date	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/17/2012	9/18/2012	9/18/2012	9/17/2012	9/18/2012
Sample ID	FT-MW01I-20120917	FT-MW01S-20120917	FT-MW02I-20120917	FT-MW02S-20120917	FT-MW03S-20120917	FT-MW05I-20120917	FT-MWDUP01-20120917	FT-MW05S-20120917	FT-MW06I-20120918	FT-MW06S-20120918	FT-MW07S-20120917	FT-MW08I-20120918
VOLATILES (µg/L)												
1,1,1-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.36 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	0.90 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	1.2
1,1-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,3-TRICHLOROBENZENE	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 0.026 U < 0.75 U	< 0.026 U < 0.75 U	< 0.75 U	< 0.027 U < 0.75 U	< 0.025 U < 0.75 U	< 0.026 U < 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 0.026 U < 0.50 U	< 0.026 U < 0.50 U	< 0.50 U	< 0.027 U < 0.50 U	< 0.025 U < 0.50 U	< 0.026 U < 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	1.3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	< 1.0 U	< 1.0 U	2.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.60 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	-	-	-	-	-	-	-	-	-	-	-	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	-	-	-	-	-	-	-	-	-	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	-	-	-	-	-	-	-	-	-	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	0.58 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.30 J	0.31 J	< 0.50 U	0.33 J
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 UJ
CHLOROFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.68 J	0.66 J	< 0.50 U	0.44 J	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	2.2	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.44 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.45 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	< 0.50 U	< 0.50 U	< 0.50 U	0.70 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	0.54 J	3.2	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.38 J
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	< 1.5 U	< 1.5 U	0.70 J	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-1
Site 2 - Fire Training Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	FTMW08S	FTPZ451S	FTPZ452S	FTPZ453	FTPZ454S	FTPZ455I	FTPZ455S	FTPZ456I	FTPZ456S	FTPZ457S	FTPZ458I	FTPZ458I
Date	9/18/2012	9/20/2012	9/17/2012	2/21/2012	9/20/2012	2/21/2012	9/13/2012	2/21/2012	9/12/2012	2/21/2012	2/22/2012	9/12/2012
Sample ID	FT-MW08S-20120918	FT-PZ451S-20120920	FT-PZ452S-20120917	FT-PZ453S-20120221	FT-PZ454S-20120920	FT-PZ455I-20120221	FT-PZ455S-20120913	FT-PZ456I-20120221	FT-PZ456S-20120912	FT-PZ457S-20120221	FT-PZ458I-20120222	FT-PZ458I-20120912
VOLATILES (µg/L)												
1,1,1-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	0.8 J	< 0.50 U
1,1-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	0.77 J	0.68 J
1,2,3-TRICHLOROBENZENE	-	-	-	< 1 U	-	< 1 U	-	< 1 U	-	< 1 U	< 1 U	-
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 UJ	< 1 U	< 1 U	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 1 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	< 1.0 U	< 1.0 U	-	< 1.0 U	-	< 1.0 U	-	< 1.0 U	-	-	2.0
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,4-DIOXANE	-	-	-	R	-	R	-	R	-	R	R	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	-	R	-	< 5 U	-	< 5 U	-	< 5 U	< 5 U	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
ACETONE	< 2.5 UJ	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
BENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	-	< 1 U	-	< 1 U	-	< 1 U	-	< 1 U	< 1 U	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
CARBON DISULFIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROETHANE	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1 U	< 1.0 UJ	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
CHLOROFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	0.83 J	0.38 J	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	0.56 J	< 1 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	4.1	2.0
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
ISOPROPYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 1.0 U	< 1.0 U	< 2 U	< 1.0 U	< 2 U	< 1.0 U	< 2 U	< 1.0 U	< 2 U	< 2 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 UJ	< 1 U	< 1 U	< 0.75 UJ
METHYL CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 2.5 U	< 1 U	< 2.5 U	< 1 U	< 2.5 U	< 1 U	< 2.5 U	< 1 U	< 1 U	< 2.5 U
O-XYLENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 UJ	< 1 U	< 1 U	< 0.50 UJ
STYRENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	0.89 J	0.66 J
TOLUENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	24	16
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	< 1.5 U	< 1.5 U	-	< 1.5 U	-	< 1.5 U	-	< 1.5 U	-	-	< 1.5 U

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-1
Site 2 - Fire Training Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	FTPZ458S	FTPZ459I	FTPZ459I (DUP)	FTPZ459S	FTPZ460I	FTPZ460I	FTPZ461I	FTPZ461I	FTPZ462I	FTPZ462S	FTPZ462S (DUP)
Date	2/22/2012	2/22/2012	2/22/2012	2/22/2012	2/23/2012	9/18/2012	2/23/2012	9/18/2012	2/23/2012	9/13/2012	9/13/2012
Sample ID	FT-PZ458S-20120222	FT-PZ459I-20120222	FT-PZ459I-20120222-D	FT-PZ459S-20120222	FT-PZ460I-20120223	FT-PZ460I-20120918	FT-PZ461I-20120223	FT-PZ461I-20120918	FT-PZ462I-20120223	FT-PZ462S-20120913	FT-PZDUP02-20120913
VOLATILES (µg/L)											
1,1,1-TRICHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	14	19	3.9	3.5	< 1 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	< 1 U	0.67 J	0.61 J	< 1 U	21	42	2.8	2.9	< 1 U	< 0.50 U	< 0.50 U
1,2,3-TRICHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	-	< 1 U	-	< 1 U	-	-
1,2,4-TRICHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	-	-	-	-	-	7.7	-	3.8	-	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	R	R	R	R	R	-	R	-	R	-	-
2-BUTANONE	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	-	< 5 U	-	< 5 U	-	-
2-HEXANONE	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U
ACETONE	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U
BENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
BROMOCHLOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	-	< 1 U	-	< 1 U	-	-
BROMODICHLOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
BROMOFORM	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
BROMOMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
CHLOROETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U
CHLOROFORM	< 1 U	< 1 U	< 1 U	0.5 J	< 1 U	< 0.50 U	< 1 U	< 0.50 U	1.3	< 0.50 U	< 0.50 U
CHLOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	0.61 J	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	< 1 U	< 1 U	< 1 U	< 1 U	7.8	7.7	4.2	3.8	< 1 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	< 1 U	< 1 U	< 1 U	0.53 J	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 1.0 U	< 2 U	< 1.0 U	< 2 U	< 1.0 U	< 1.0 U
METHYL ACETATE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 1 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	< 1 U	< 1 U	< 1 U	0.68 J	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 2.5 U	< 1 U	< 2.5 U	< 1 U	< 2.5 U	< 2.5 U
O-XYLENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
STYRENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	< 1 U	< 1 U	< 1 U	< 1 U	7.7	9.4	0.88 J	0.94 J	< 1 U	< 0.50 U	< 0.50 U
TOLUENE	0.65 J	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 1 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	< 1 U	< 1 U	< 1 U	< 1 U	440	380	69	59	< 1 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	< 1 U	< 1 U	< 1 U	< 1 U	0.43 J	0.54 J	< 1 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	-	-	-	-	-	< 1.5 U	-	< 1.5 U	-	< 1.5 U	< 1.5 U

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-2
Site 6A - Fuel Calibration Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	FCMW02I	FCMW02S	FCMW02SR1	FCMW03S	FCMW05I	FCMW05S	FCPZ05I1	FCPZ05I1 (DUP)	FCPZ05I1
Date	9/10/2012	9/10/2012	2/20/2012	9/11/2012	9/10/2012	9/10/2012	2/20/2012	2/20/2012	9/10/2012
Sample ID	FC-MW02IR1-20120910	FC-MW02SR1-20120910	FC-MW02SR1-20120220	FC-MW03SR1-20120911	FC-MW05I-20120910	FC-MW05S-20120910	FC-PZ05I1-20120220	FC-PZ05I1-20120220-D	FC-PZ05I1-20120910
VOLATILES (µg/L)									
1,1,1-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	7.1	8	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	0.66 J	< 1 U	1.9 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,1-DICHLOROETHANE	< 0.50 U	0.94 J	8.4	3.0 J	< 0.50 U	< 0.50 U	16	18	3.4
1,1-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 1 U	3.8 J	< 0.50 U	< 0.50 U	1	1.3	< 0.50 U
1,2,3-TRICHLOROBENZENE	-	-	< 1 U	-	-	-	< 1 U	< 1 U	-
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 1 U	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U	< 1 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.50 U	10 J	3	2.8 J	< 0.50 U	< 0.50 U	1.4	1.2	0.99 J
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	1.4 J	-	0.73 J	< 1.0 U	< 1.0 U	-	-	< 1.0 U
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.50 U	0.43 J	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
1,4-DIOXANE	-	-	R	-	-	-	R	R	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	< 5 U	-	-	-	< 5 U	< 5 U	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
ACETONE	< 2.5 U	< 2.5 U	< 5 U	6.3	< 2.5 U	< 2.5 U	< 5 U	< 5 U	< 2.5 U
BENZENE	< 0.50 U	< 0.50 U	< 1 U	0.77 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	< 1 U	-	-	-	< 1 U	< 1 U	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
CARBON DISULFIDE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROETHANE	< 1.0 U	< 1.0 U	4.6	4.1 J	< 1.0 U	< 1.0 U	3	3.5	< 1.0 U
CHLOROFORM	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	< 0.50 U	1.4 J	1.6	0.73 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	4.3 J	1.2	3.0 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	14 J	11	38 J	< 0.50 U	< 0.50 U	8.5	8.2	0.55 J
ISOPROPYLBENZENE	< 0.50 U	10 J	7.6	17 J	< 0.50 U	< 0.50 U	3.3	3.4	6.4
M- AND P-XYLENE	< 1.0 U	52 J	29	0.61 J	< 1.0 U	< 1.0 U	< 2 U	< 2 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 1 U	< 0.75 UJ	< 0.75 U	< 0.75 U	< 1 U	< 1 U	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	5.2 J	3.5	7.1 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 1 U	< 2.5 UJ	< 2.5 U	< 2.5 U	< 1 U	< 1 U	< 2.5 U
O-XYLENE	< 0.50 U	0.90 J	9	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
STYRENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	0.55 J	0.45 J	< 0.50 UJ	< 0.50 U	0.48 J	< 1 U	< 1 U	< 0.50 U
TOLUENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 1 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	0.57 J	0.82 J	0.53 J	< 0.50 U	< 0.50 U	< 1 U	< 1 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	53 J	-	0.61 J	< 1.5 U	< 1.5 U	-	-	< 1.5 U

Notes:

< Indicates non-detect

U = Not detected above detection limits

J = estimated value

R = rejected value not reported

UG_L = micrograms per liter

-(hyphen) Indicates Not Analyzed

Sample Type N indicates normal environmental sample, FD is field duplicate

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAMW126D	SAMW126I	SAMW126S	SAMW127I	SAMW128D	SAMW128I	SAMW129D	SAMW129I	SAMW129S	SAMW131D
Date	9/19/2012	9/19/2012	9/19/2012	9/13/2012	9/13/2012	9/13/2012	9/12/2012	9/13/2012	9/13/2012	9/18/2012
Sample ID	SA-MW126D-20120919	SA-MW126I-20120919	SA-MW126S-20120919	SA-MW127I-20120913	SA-MW128D-20120913	SA-MW128I-20120913	SA-MW129D-20120912	SA-MW129I-20120913	SA-MW129S-20120913	SA-MW131D-20120918
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	1.2	< 0.50 U	0.59 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	13	2.0	2.1	< 0.50 U	< 0.50 U	< 0.50 U	28
1,1-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	0.99 J	< 0.50 U	0.44 J	0.56 J	< 0.50 U	< 0.50 U	3.1
1,2,3-TRICHLOROBENZENE	-	-	-	-	-	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.38 J
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.25 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	-	-	-	-	-	-	-	-	-	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	-	-	-	-	-	-	-	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	-	-	-	-	-	-	-	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.37 J
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CHLOROFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.38 J
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.35 J
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
METALS (µg/L)										
ARSENIC	-	-	-	-	-	-	-	-	-	-
IRON	-	-	-	-	-	-	-	-	-	-
MANGANESE	-	-	-	-	-	-	-	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAMW131D (DUP)	SAMW131I	SAMW132I	SAMW132S	SAPZ118I	SAPZ118S	SAPZ122D	SAPZ122I	SAPZ123I	SAPZ123I1
Date	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/11/2012	9/11/2012	9/12/2012	9/12/2012	9/11/2012	9/11/2012
Sample ID	SA-MWDUP04-20120918	SA-MW131I-20120918	SA-MW132I-20120918	SA-MW132S-20120918	SA-PZ118I-20120911	SA-PZ118S-20120911	SA-PZ122D-20120912	SA-PZ122I-20120912	SA-PZ123I-20120911	SA-PZ123I1-20120911
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	< 0.50 U	< 0.50 U	31	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	1.1	22
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	29	0.88 J	150	< 0.50 U	< 0.50 U	21	< 0.50 U	< 0.50 U	44	150
1,1-DICHLOROETHENE	3.1	< 0.50 U	16	< 0.50 U	< 0.50 U	4.5	< 0.50 U	< 0.50 U	5.3	14
1,2,3-TRICHLOROBENZENE	-	-	-	-	-	-	-	-	-	-
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.50 U	0.52 J	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 U	0.48 J	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.26 J
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	0.42 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.21 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.50 U	< 0.50 U	0.80 J	< 0.50 U	< 0.50 U	0.41 J	< 0.50 U	< 0.50 U	< 0.50 U	0.54 J
1,4-DIOXANE	-	-	-	-	-	-	-	-	-	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	-	-	-	-	-	-	-	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 U	2.9 J	< 2.5 U	< 3.9 U	< 2.5 U	3.4 J
BENZENE	< 0.50 U	< 0.50 U	0.34 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	-	-	-	-	-	-	-	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	0.37 J	0.34 J	0.50 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	< 1.0 UJ	< 1.0 UJ	12 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.86 J	1.1 J
CHLOROFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	0.42 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.21 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	0.36 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
METALS (µg/L)										
ARSENIC	-	-	-	-	-	-	-	-	-	-
IRON	-	-	-	-	-	-	-	-	-	-
MANGANESE	-	-	-	-	-	-	-	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAPZ123S	SAPZ124	SAPZ124	SAPZ124 (DUP)	SAPZ125	SAPZ125 (DUP)	SAPZ125	SAPZ134	SAPZ135	SAPZ138I1
Date	9/11/2012	5/17/2012	9/21/2012	9/21/2012	5/17/2012	5/17/2012	9/21/2012	9/20/2012	9/13/2012	2/21/2012
Sample ID	SA-PZ123S-20120911	SA-PZ-124-20120517	SA-PZ124-20120921	SA-PZDUP05-20120921	SA-PZ-125-20120517	SA-PZ-125-20120517-D	SA-PZ125-20120921	SA-PZ134I-20120920	SA-PZ135I-20120913	SA-PZ138I1-20120221
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	< 0.50 U	3.6	7.8	7.7	< 0.5 U	< 0.5 U	< 0.50 U	0.22 J	1.4	150
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1-DICHLOROETHANE	1.0	74	130	130	< 0.5 U	< 0.5 U	< 0.50 U	3.7	6.9	690
1,1-DICHLOROETHENE	< 0.50 U	6.4	13	13	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	0.68 J	47
1,2,3-TRICHLOROBENZENE	-	< 0.5 U	-	-	< 0.5 U	< 0.5 U	-	-	-	0.8 J
1,2,4-TRICHLOROBENZENE	< 0.50 U	< 0.5 U	0.48 J	0.65 J	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	2.9
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.5 U	< 0.75 U	< 0.75 U	< 0.5 U	< 0.5 U	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,2-DICHLOROBENZENE	< 0.50 U	< 0.5 U	0.39 J	0.39 J	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	2.4
1,2-DICHLOROETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.54 J
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	-	< 1.0 U	< 1.0 U	-	-	< 1.0 U	< 1.0 U	< 1.0 U	-
1,2-DICHLOROPROPANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	1.4
1,4-DICHLOROBENZENE	< 0.50 U	< 0.5 U	0.94 J	0.94 J	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	5.8
1,4-DIOXANE	-	R	-	-	R	R	-	-	-	R
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
2-CHLOROETHYL VINYL ETHER	-	< 2.5 U	-	-	< 2.5 U	< 2.5 U	-	-	-	< 5 U
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
BENZENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	1.3
BROMOCHLOROMETHANE	-	< 0.5 U	-	-	< 0.5 U	< 0.5 U	-	-	-	< 1 U
BROMODICHLOROMETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
BROMOFORM	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
BROMOMETHANE	< 1.0 U	< 0.5 U	< 1.0 UJ	< 1.0 UJ	< 0.5 U	< 0.5 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1 U
CARBON DISULFIDE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CARBON TETRACHLORIDE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CHLOROBENZENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.74 J
CHLOROETHANE	< 1.0 U	1.6	2.2	2.9	< 0.5 U	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	150
CHLOROFORM	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CHLOROMETHANE	< 1.0 U	< 0.5 U	< 1.0 UJ	< 1.0 UJ	< 0.5 U	< 0.5 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1 U
CIS-1,2-DICHLOROETHENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.44 J
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CYCLOHEXANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
ETHYLBENZENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
ISOPROPYLBENZENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	2
M- AND P-XYLENE	< 1.0 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2 U
METHYL ACETATE	< 0.75 U	< 0.5 UJ	< 0.75 U	< 0.75 U	< 0.5 UJ	< 0.5 UJ	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U
METHYL CYCLOHEXANE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
METHYLENE CHLORIDE	< 2.5 U	< 0.5 U	< 2.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 1 U
O-XYLENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
STYRENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TETRACHLOROETHENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TOLUENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	1.5	0.57 J	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRICHLOROETHENE	< 0.50 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.49 J
TRICHLOROFLUOROMETHANE	< 1.0 U	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
VINYL CHLORIDE	< 1.0 U	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
XYLENES, TOTAL	< 1.5 U	-	< 1.5 U	< 1.5 U	-	-	< 1.5 U	< 1.5 U	< 1.5 U	-
METALS (µg/L)										
ARSENIC	-	-	-	-	-	-	-	-	-	-
IRON	-	-	-	-	-	-	-	-	-	-
MANGANESE	-	-	-	-	-	-	-	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAPZ138I1	SAPZ139	SAPZ140	SAPZ142	SAPZ143	SAPZ144I	SAPZ145D	SAPZ145I	SAPZ147	SAPZ147
Date	9/20/2012	9/20/2012	9/11/2012	9/11/2012	9/11/2012	9/12/2012	9/18/2012	9/18/2012	5/17/2012	9/21/2012
Sample ID	SA-PZ138I1-20120920	SA-PZ139I-20120920	SA-PZ140I-20120911	SA-PZ142I-20120911	SA-PZ143I-20120911	SA-PZ144I-20120912	SA-PZ145D-20120918	SA-PZ145I-20120918	SA-PZ-147-20120517	SA-PZ147-20120921
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	43 J	0.86 J	2.4	66 J	66	< 0.50 U	< 0.50 U	0.38 J	< 0.5 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1-DICHLOROETHANE	260	11	33	290	430	2.8	28	42	< 0.5 U	12
1,1-DICHLOROETHENE	14 J	0.43 J	2.5	28 J	35	0.47 J	1.9	4.8	< 0.5 U	0.84 J
1,2,3-TRICHLOROBENZENE	-	-	-	-	-	-	-	-	< 0.5 U	-
1,2,4-TRICHLOROBENZENE	0.49 J	< 0.50 U	0.78 J	0.59 J	3.2	< 0.50 UJ	0.80 J	1.2	< 0.5 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.5 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROBENZENE	0.64 J	< 0.50 U	< 0.50 U	0.81 J	1.1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	-	< 1.0 U
1,2-DICHLOROPROPANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.68 J	0.51 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
1,4-DICHLOROBENZENE	0.89 J	< 0.50 U	0.57 J	3.3 J	2.4	0.30 J	0.25 J	0.59 J	< 0.5 U	< 0.50 U
1,4-DIOXANE	-	-	-	-	-	-	-	-	R	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	-	-	-	-	-	-	-	R	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	< 0.50 U	< 0.50 U	< 0.50 U	0.36 J	0.59 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOCHLOROMETHANE	-	-	-	-	-	-	-	-	< 0.5 U	-
BROMODICHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 UJ
CARBON DISULFIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROETHANE	54 J	< 1.0 U	1.7 J	48 J	36	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U
CHLOROFORM	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
ISOPROPYLBENZENE	0.61 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ	< 0.75 U	< 0.75 U	< 0.5 UJ	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 0.5 U	< 2.5 U
O-XYLENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
STYRENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
TOLUENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.29 J	< 0.50 U	0.45 J	0.81 J	< 0.5 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.51 J	< 1.0 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	-	< 1.5 U
METALS (µg/L)										
ARSENIC	-	-	-	-	-	-	-	-	-	-
IRON	-	-	-	-	-	-	-	-	-	-
MANGANESE	-	-	-	-	-	-	-	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAPZ148	SAPZ148	SAPZ149I1	SAPZ157I	SAPZ157I1	SAPZ161I	SAPZ161I (DUP)	SAPZ163I	SAPZ166I	SAPZ171I
Date	5/17/2012	9/21/2012	9/13/2012	9/19/2012	9/19/2012	9/19/2012	9/19/2012	9/19/2012	9/12/2012	2/20/2012
Sample ID	SA-PZ-148-20120517	SA-PZ148-20120921	SA-PZ149I1-20120913	SA-PZ157I-20120919	SA-PZ157I1-20120919	SA-PZ161I-20120919	SA-PZDUP03-20120919	SA-PZ163I-20120919	SA-PZ166I-20120912	SA-PZ171I-20120220
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	< 0.5 U	< 0.50 U	84	4.5	130 J	2.0	2.0	1.3	< 0.50 U	48
1,1,2,2-TETRACHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1,2-TRICHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,1-DICHLOROETHANE	18	< 0.50 U	520	28	550	26	27	26	< 0.50 U	390
1,1-DICHLOROETHENE	1	< 0.50 U	36	1.6	40 J	1.7	1.8	1.7	< 0.50 U	27
1,2,3-TRICHLOROBENZENE	< 0.5 U	-	-	-	-	-	-	-	-	1.4
1,2,4-TRICHLOROBENZENE	< 0.5 U	< 0.50 U	3.7	< 0.50 U	4.4 J	< 0.50 U	< 0.50 U	0.41 J	< 0.50 U	4
1,2-DIBROMO-3-CHLOROPROPANE	< 0.5 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U
1,2-DIBROMOETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,2-DICHLOROBENZENE	< 0.5 U	< 0.50 U	3.2	< 0.50 U	4.6 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	1.3
1,2-DICHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.55 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,2-DICHLOROETHENE, TOTAL	-	< 1.0 U	0.51 J	< 1.0 U	0.47 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	-
1,2-DICHLOROPROPANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
1,3-DICHLOROBENZENE	< 0.5 U	< 0.50 U	2.2	< 0.50 U	4.1 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.66 J
1,4-DICHLOROBENZENE	< 0.5 U	< 0.50 U	11	0.37 J	16 J	< 0.50 U	0.26 J	0.28 J	< 0.50 U	2.9
1,4-DIOXANE	R	-	-	-	-	-	-	-	-	R
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
2-CHLOROETHYL VINYL ETHER	< 2.5 U	-	-	-	-	-	-	-	-	< 5 U
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
ACETONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	2.2 J	< 2.5 U	< 2.5 U	< 2.5 U	< 5 U
BENZENE	< 0.5 U	< 0.50 U	1.4	< 0.50 U	1.0 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
BROMOCHLOROMETHANE	< 0.5 U	-	-	-	-	-	-	-	-	< 1 U
BROMODICHLOROMETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
BROMOFORM	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
BROMOMETHANE	< 0.5 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
CARBON DISULFIDE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CARBON TETRACHLORIDE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CHLOROBENZENE	< 0.5 U	< 0.50 U	0.95 J	< 0.50 U	1.9 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CHLOROETHANE	< 0.5 U	< 1.0 U	180	2.2 J	270	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 U	25
CHLOROFORM	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CHLOROMETHANE	< 0.5 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.54 J
CIS-1,2-DICHLOROETHENE	< 0.5 U	< 0.50 U	0.51 J	< 0.50 U	0.47 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CIS-1,3-DICHLOROPROPENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
CYCLOHEXANE	< 0.5 U	< 0.50 U	0.38 J	< 0.50 U	1.2 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
DIBROMOCHLOROMETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
DICHLORODIFLUOROMETHANE	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
ETHYLBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
ISOPROPYLBENZENE	< 0.5 U	< 0.50 U	4.4	< 0.50 U	1.8 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
M- AND P-XYLENE	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2 U
METHYL ACETATE	< 0.5 UJ	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U	< 1 U
METHYL CYCLOHEXANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
METHYL TERT-BUTYL ETHER	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
METHYLENE CHLORIDE	< 0.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 1 U
O-XYLENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
STYRENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TETRACHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TOLUENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRANS-1,2-DICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRANS-1,3-DICHLOROPROPENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.50 U	0.34 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1 U
TRICHLOROFLUOROMETHANE	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
VINYL CHLORIDE	< 0.5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U
XYLENES, TOTAL	-	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	-
METALS (µg/L)										
ARSENIC	-	-	-	< 5.0 U	1.6 J	22.2	22.2	-	-	-
IRON	-	-	-	519	207	9630	9770	-	-	-
MANGANESE	-	-	-	325	5200	1410	1420	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

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< = Not detected; detection limit is shown.
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J = Estimated value.
R = Rejected value not reported.

Table D-3
Southern Area
Groundwater Analytical Results
NWIRP Calverton, New York

Location	SAPZ171I	SAPZ172I	SAPZ172I
Date	9/11/2012	2/20/2012	9/11/2012
Sample ID	SA-PZ171I-20120911	SA-PZ172I-20120220	SA-PZ172I-20120911
VOLATILES (µg/L)			
1,1,1-TRICHLOROETHANE	66	28	22 J
1,1,2,2-TETRACHLOROETHANE	< 0.50 U	< 1 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.50 U	< 1 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.50 U	< 1 U	< 0.50 U
1,1-DICHLOROETHANE	470	230	190
1,1-DICHLOROETHENE	40	17	16 J
1,2,3-TRICHLOROBENZENE	-	0.78 J	-
1,2,4-TRICHLOROBENZENE	2.9	2.3	0.67 J
1,2-DIBROMO-3-CHLOROPROPANE	< 0.75 U	< 1 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.50 U	< 1 U	< 0.50 U
1,2-DICHLOROBENZENE	0.68 J	0.72 J	0.64 J
1,2-DICHLOROETHANE	< 0.50 U	< 1 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	0.28 J	-	0.22 J
1,2-DICHLOROPROPANE	< 0.50 U	< 1 U	< 0.50 U
1,3-DICHLOROBENZENE	0.32 J	0.51 J	0.71 J
1,4-DICHLOROBENZENE	1.6	2	3.5 J
1,4-DIOXANE	-	R	-
2-BUTANONE	< 2.5 U	< 5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	-	< 5 U	-
2-HEXANONE	< 2.5 U	< 5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 5 U	< 2.5 U
ACETONE	< 2.5 U	< 5 U	< 2.5 U
BENZENE	0.48 J	< 1 U	< 0.50 U
BROMOCHLOROMETHANE	-	< 1 U	-
BROMODICHLOROMETHANE	< 0.50 U	< 1 U	< 0.50 U
BROMOFORM	< 0.50 U	< 1 U	< 0.50 U
BROMOMETHANE	< 1.0 U	< 1 U	< 1.0 U
CARBON DISULFIDE	< 0.50 U	< 1 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.50 U	< 1 U	< 0.50 U
CHLOROBENZENE	< 0.50 U	< 1 U	< 0.50 U
CHLOROETHANE	37	24	29 J
CHLOROFORM	< 0.50 U	< 1 U	< 0.50 U
CHLOROMETHANE	< 1.0 U	0.5 J	< 1.0 U
CIS-1,2-DICHLOROETHENE	0.28 J	< 1 U	0.22 J
CIS-1,3-DICHLOROPROPENE	< 0.50 U	< 1 U	< 0.50 U
CYCLOHEXANE	< 0.50 U	< 1 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.50 U	< 1 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 1.0 U	< 1 U	< 1.0 U
ETHYLBENZENE	< 0.50 U	< 1 U	< 0.50 U
ISOPROPYLBENZENE	< 0.50 U	< 1 U	< 0.50 U
M- AND P-XYLENE	< 1.0 U	< 2 U	< 1.0 U
METHYL ACETATE	< 0.75 U	< 1 U	< 0.75 U
METHYL CYCLOHEXANE	< 0.50 U	< 1 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.50 U	< 1 U	< 0.50 U
METHYLENE CHLORIDE	< 2.5 U	< 1 U	< 2.5 U
O-XYLENE	< 0.50 U	< 1 U	< 0.50 U
STYRENE	< 0.50 U	< 1 U	< 0.50 U
TETRACHLOROETHENE	< 0.50 U	< 1 U	< 0.50 U
TOLUENE	< 0.50 U	< 1 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.50 U	< 1 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.50 U	< 1 U	< 0.50 U
TRICHLOROETHENE	< 0.50 U	< 1 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 1.0 U	< 1 U	< 1.0 U
VINYL CHLORIDE	< 1.0 U	< 1 U	< 1.0 U
XYLENES, TOTAL	< 1.5 U	-	< 1.5 U
METALS (µg/L)			
ARSENIC	-	-	-
IRON	-	-	-
MANGANESE	-	-	-

Notes:

Multiple values for a chemical in one sample indicate multiple analyses methods were used; all available results are reported.

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

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Table D-4
Southern Area
Surface Water Analytical Results
NWIRP Calverton, New York

Location	SASW124	SASW124	SASW124 (DUP)	SASW125	SASW125	SASW201	SASW201 (DUP)	SASW201	SASW204	SASW204
Date	5/17/2012	9/21/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012
Sample ID	SA-SW-124-20120517	SA-SW124-20120921	SA-SWDUP05-20120921	SA-SW-125-20120517	SA-SW125-20120921	SA-SW-201-20120517	SA-SW-201-20120517-D	SA-SW201-20120921	SA-SW-204-20120517	SA-SW204-20120921
VOLATILES (µg/L)										
1,1,1-TRICHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1,2-TRICHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,1-DICHLOROETHANE	1.1	1.8	1.7	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	0.57 J
1,1-DICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2,3-TRICHLOROBENZENE	< 0.5 U	-	-	< 0.5 U	-	< 0.5 U	< 0.5 U	-	< 0.5 U	-
1,2,4-TRICHLOROBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	< 0.5 U	< 0.75 U	< 0.75 U	< 0.5 U	< 0.75 U	< 0.5 U	< 0.5 U	< 0.75 U	< 0.5 U	< 0.75 U
1,2-DIBROMOETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	-	< 1.0 U	< 1.0 U	-	< 1.0 U	-	-	< 1.0 U	-	< 1.0 U
1,2-DICHLOROPROPANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,3-DICHLOROBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,4-DICHLOROBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
1,4-DIOXANE	R	-	-	R	-	R	R	-	R	-
2-BUTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-CHLOROETHYL VINYL ETHER	< 2.5 U	-	-	< 2.5 U	-	< 2.5 U	< 2.5 U	-	R	-
2-HEXANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	< 2.5 U	3.0 J	3.4 J	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	3.4 J	< 2.5 U	< 2.5 U
BENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOCHLOROMETHANE	< 0.5 U	-	-	< 0.5 U	-	< 0.5 U	< 0.5 U	-	< 0.5 U	-
BROMODICHLOROMETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOFORM	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
BROMOMETHANE	< 0.5 U	< 1.0 UJ	< 1.0 UJ	< 0.5 U	< 1.0 UJ	< 0.5 U	< 0.5 U	< 1.0 UJ	< 0.5 U	< 1.0 UJ
CARBON DISULFIDE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CARBON TETRACHLORIDE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROETHANE	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 1.0 U
CHLOROFORM	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CHLOROMETHANE	< 0.5 U	< 1.0 UJ	< 1.0 UJ	< 0.5 U	< 1.0 UJ	< 0.5 U	< 0.5 U	< 1.0 UJ	< 0.5 U	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
CYCLOHEXANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
DIBROMOCHLOROMETHANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
DICHLORODIFLUOROMETHANE	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 1.0 U
ETHYLBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
ISOPROPYLBENZENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
M- AND P-XYLENE	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1.0 U
METHYL ACETATE	< 0.5 UJ	< 0.75 U	< 0.75 U	< 0.5 UJ	< 0.75 U	< 0.5 UJ	< 0.5 UJ	< 0.75 U	< 0.5 UJ	< 0.75 U
METHYL CYCLOHEXANE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
METHYL TERT-BUTYL ETHER	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
METHYLENE CHLORIDE	< 0.5 U	< 2.5 U	< 2.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 2.5 U
O-XYLENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
STYRENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TETRACHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TOLUENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TRICHLOROETHENE	< 0.5 U	< 0.50 U	< 0.50 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.5 U	< 0.50 U	< 0.5 U	< 0.50 U
TRICHLOROFLUOROMETHANE	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 1.0 U
VINYL CHLORIDE	< 0.5 U	< 1.0 U	< 1.0 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 1.0 U
XYLENES, TOTAL	-	< 1.5 U	< 1.5 U	-	< 1.5 U	-	-	< 1.5 U	-	< 1.5 U

Notes:

(DUP) = Indicates a field duplicate sample.

µg/L = micrograms per liter

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Table D-5
Southern Area
Sediment Analytical Results
NWIRP Calverton, New York

Location	SASD124	SASD124	SASD124 (DUP)	SASD125	SASD125	SASD201	SASD201 (DUP)	SASD201	SASD204	SASD204
Date	5/17/2012	9/21/2012	9/21/2012	5/17/2012	9/21/2012	5/17/2012	5/17/2012	9/21/2012	5/17/2012	9/21/2012
Sample ID	SA-SD-124-20120517	SA-SD124-20120921	SA-SDDUP05-20120921	SA-SD-125-20120517	SA-SD125-20120921	SA-SD-201-20120517	SA-SD-201-20120517-D	SA-SD201-20120921	SA-SD-204-20120517	SA-SD204-20120921
VOLATILES (µg/Kg)										
1,1,1-TRICHLOROETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,1,2,2-TETRACHLOROETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,1,2-TRICHLOROETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,1-DICHLOROETHANE	20	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,1-DICHLOROETHENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2,3-TRICHLOROBENZENE	< 3.55 U	-	-	< 4.6 U	-	< 3.1 U	< 2.85 U	-	< 3.15 UJ	-
1,2,4-TRICHLOROBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2-DIBROMO-3-CHLOROPROPANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2-DIBROMOETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2-DICHLOROBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2-DICHLOROETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,2-DICHLOROETHENE, TOTAL	-	< 6.5 UJ	< 6.0 UJ	-	R	-	-	< 6.0 UJ	-	< 6.0 UJ
1,2-DICHLOROPROPANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,3-DICHLOROBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,4-DICHLOROBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
1,4-DIOXANE	R	-	-	R	-	R	R	-	R	-
2-BUTANONE	< 18 U	< 16 UJ	< 15 UJ	< 23 U	R	< 15.5 U	< 14.5 U	< 15 UJ	< 15.5 UJ	< 15 UJ
2-CHLOROETHYL VINYL ETHER	< 18 U	-	-	< 23 U	-	< 15.5 U	< 14.5 U	-	< 15.5 UJ	-
2-HEXANONE	< 18 U	< 16 UJ	< 15 UJ	< 23 U	R	< 15.5 U	< 14.5 U	< 15 UJ	< 15.5 UJ	< 15 UJ
4-METHYL-2-PENTANONE	< 18 U	< 16 UJ	< 15 UJ	< 23 UJ	R	< 15.5 UJ	< 14.5 U	< 15 UJ	< 15.5 UJ	< 15 UJ
ACETONE	150	11 J	11 J	110	160 J	100 J	< 14.5 UJ	< 15 UJ	120 J	25 J
BENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
BROMOCHLOROMETHANE	< 3.55 U	-	-	< 4.6 U	-	< 3.1 U	< 2.85 U	-	< 3.15 UJ	-
BROMODICHLOROMETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
BROMOFORM	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
BROMOMETHANE	< 3.55 U	< 6.5 UJ	< 6.0 UJ	< 4.6 UJ	R	< 3.1 UJ	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
CARBON DISULFIDE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CARBON TETRACHLORIDE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CHLOROBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CHLOROETHANE	4.3 J	< 6.5 UJ	< 6.0 UJ	< 4.6 UJ	R	< 3.1 UJ	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
CHLOROFORM	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CHLOROMETHANE	< 3.55 U	< 6.5 UJ	< 6.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
CIS-1,2-DICHLOROETHENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CIS-1,3-DICHLOROPROPENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
CYCLOHEXANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
DIBROMOCHLOROMETHANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
DICHLORODIFLUOROMETHANE	< 3.55 U	< 6.5 UJ	< 6.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
ETHYLBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
ISOPROPYLBENZENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
M- AND P-XYLENE	< 7 U	< 6.5 UJ	< 6.0 UJ	< 9 U	R	< 6 U	< 5.5 U	< 6.0 UJ	< 6.5 UJ	< 6.0 UJ
METHYL ACETATE	< 3.55 U	< 3.9 UJ	< 3.6 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.6 UJ	< 3.15 UJ	< 3.6 UJ
METHYL CYCLOHEXANE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
METHYL TERT-BUTYL ETHER	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
METHYLENE CHLORIDE	< 3.55 U	< 16 UJ	< 15 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 15 UJ	< 3.15 UJ	< 15 UJ
O-XYLENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
STYRENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TETRACHLOROETHENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TOLUENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TRANS-1,2-DICHLOROETHENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TRANS-1,3-DICHLOROPROPENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TRICHLOROETHENE	< 3.55 U	< 3.2 UJ	< 3.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 3.0 UJ	< 3.15 UJ	< 3.0 UJ
TRICHLOROFLUOROMETHANE	< 3.55 U	< 6.5 UJ	< 6.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
VINYL CHLORIDE	< 3.55 U	< 6.5 UJ	< 6.0 UJ	< 4.6 U	R	< 3.1 U	< 2.85 U	< 6.0 UJ	< 3.15 UJ	< 6.0 UJ
XYLENES, TOTAL	-	< 9.8 UJ	< 9.0 UJ	-	R	-	-	< 9.0 UJ	-	< 9.0 UJ
Physical Parameters (%)										
CARBON, TOTAL ORGANIC	-	0.16	0.16	-	27 J	-	-	< 0.020 U	-	0.20
TOTAL SOLIDS	-	78	77	-	8.9	-	-	82	-	81

Notes:

(DUP) = Indicates a field duplicate sample.

µg/Kg = micrograms per kilogram

Data Qualifiers:

- (hyphen) = Not analyzed or no value was available.
< = Not detected; detection limit is shown.
U = Not detected above detection limits.
J = Estimated value.
R = Rejected value not reported.

Appendix E

Data Validation Summaries

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO:	**D. BRAYACK**	**DATE:**	**JULY 27, 2012**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOC NWIRP BETHPAGE, CTO WE63 SDG D2770**		

SAMPLES: 11 / Aqueous / VOC

SA-PZ-124-20120517	SA-PZ-125-20120517	SA-PZ-146-20120517
SA-PZ-147-20120517	SA-PZ-DUP01-20120517	SA-SW-124-20120517
SA-SW-125-20120517	SA-SW-201-20120517	SA-SW-204-20120517
SA-SW-DUP01-20120517	SA-TB01-20120517	

5 / Soil / VOC

SA-SD-124-20120517	SA-SD-125-20120517	SA-SD-201-20120517
SA-SD-204-20120517	SA-SD-DUP01-20120517	

Overview

The sample set for NWIRP Bethpage, CTO WE63, SDG D2770 consisted of eleven (11) aqueous samples including one (1) aqueous trip blank sample, and five (5) soil samples. All samples were analyzed for volatile organic compounds (VOC) as listed above. Three (3) field duplicate sample pairs were included in this Sample Delivery Group (SDG); SA-PZ-DUP01-20120517 / SA-PZ-125-20120517, SA-SW-DUP01-20120517 / SA-SW-201-20120517, and SA-SD-DUP01-20120517 / SA-SD-201-20120517.

The samples were collected by Tetra Tech on May 17, 2012 and analyzed by ChemTech laboratory. All analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

*	• Data completeness
*	• Hold times
*	• GC/MS System Tuning and Performance
	• Initial/continuing calibrations
	• Laboratory Control Sample Recoveries
*	• Laboratory Blank Results
*	• Surrogate Spike Recoveries
	• Internal Standard Recoveries
	• Matrix Spike/Matrix Spike Duplicate Recoveries
	• Field Duplicate Precision
*	• Compound Identification
*	• Compound Quantitation
*	• Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The average relative response factor (RRF) was less than the 0.05 criteria for 1,4-dioxane for the initial calibrations for instrument MSVOA_F on 05/21/12 and 05/24/12. Additionally, the RRFs for all continuing calibration verifications (CCVs) were also less than the 0.05 criteria.

Affected samples:
SA-SD-124-20120517 SA-SD-125-20120517 SA-SD-201-20120517
SA-SD-204-20120517 SA-SD-DUP01-20120517

Action: All affected sample 1,4-dioxane results were non-detected and were qualified rejected, (UR).

The average RRF was less than the 0.05 criteria and the relative standard deviation (RSD) was greater than the 20% quality control limit for 1,4-dioxane for the initial calibration for instrument MSVOA_R on 05/14/12. Additionally, the RRFs for all continuing calibration verifications (CCVs) were also less than the 0.05 criteria.

Affected samples: All aqueous samples

Action: All affected sample 1,4-dioxane results were non-detected and were qualified rejected, (UR).

The continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for bromomethane and chloroethane for instrument MSVOA_F on 05/23/12 @ 13:49.

Affected samples: SA-SD-125-20120517, SA-SD-201-20120517, and SA-SD-204-20120517

Action: The non-detected bromomethane and chloroethane results were qualified estimated, (UJ).

The CCV %D was greater than the 20% quality control limit for methyl acetate and 1,4-dioxane for instrument MSVOA_R on 05/21/12 @ 23:46.

Affected samples: All aqueous samples

Action: The non-detected methyl acetate results were qualified estimated, (UJ). The 1,4-dioxane results were rejected for RRF criteria non-compliance and no further validation action was necessary.

The CCV %D was greater than the 20% quality control limit for methyl acetate and 1,4-dioxane for instrument MSVOA_R on 05/22/12 @ 12:01.

Affected samples: Matrix spike (MS) and matrix spike duplicate (MSD) samples

Action: No validation action was necessary as all affected samples were MS and MSD samples.

The Laboratory Control Sample (LCS) percent recovery (%R) was less than the quality control limit for 4-methyl-2-pentanone for the batch BSF0523S1 affecting the samples listed.

Affecting sample: SA-SD-125-20120517, SA-SD-201-20120517, and SA-SD-204-20120517

Action: The sample 4-methyl-2-pentanone non-detected results were qualified estimated, (UJ).

The LCS %R was greater than the quality control limit for methyl acetate for the batch BSR0521W3 affecting the samples listed.

Affecting sample: All aqueous samples

Action: All aqueous sample methyl acetate results were non-detected results and no qualifications were necessary.

The LCS %R was greater than the quality control limit for methyl acetate for the batch BSR0522W1 affecting the samples listed.

Affecting sample: MS and MSD samples

Action: No validation action was necessary as all affected samples were MS and MSD samples.

The MS and MSD %Rs were greater than the quality control limit for methyl acetate and 1,4-dioxane for the spiked sample SA-SW-204-20120517. The MS and MSD %Rs were less than the quality control limit at 0% for 2-chloroethyl vinyl ether for spiked sample SA-SW-204-20120517.

Action: The sample methyl acetate result was non-detected and was not qualified. The sample 1,4-dioxane result was rejected for RRF criteria non-compliance and no further action was necessary. The sample 2-chloroethyl vinyl ether non-detected result was qualified rejected, (UR).

The MS and MSD %Rs were greater than the quality control limit for methyl acetate and the MS %R was greater than the quality control limit for 1,4-dioxane only for the spiked sample SA-PZ-147-20120517. The MS and MSD %Rs were less than the quality control limit at 0% for 2-chloroethyl vinyl ether for spiked sample SA-PZ-147-20120517.

Action: The sample methyl acetate result was non-detected and was not qualified. The sample 1,4-dioxane result was rejected for RRF criteria non-compliance and no further action was necessary. The sample 2-chloroethyl vinyl ether non-detected result was qualified rejected, (UR).

The MS/MSD RPDs were greater than the quality control limit for acetone, bromochloromethane, 2-chloroethyl vinyl ether, and 1,2-dibromo-3-chloropropane for spiked sample SA-SD-204-20120517.

Action: No validation action was taken for RPD non-compliances alone.

All of the internal standard recoveries were less than the quality control limit for sample SA-SD-204-20120517. The sample was re-analyzed with similar results, all of the internal standard recoveries were less than the quality control limit. The original sample SA-SD-204-20120517 VOC analysis results were validated/reported.

Action: All sample SA-SD-204-20120517 positive and non-detected VOC results were qualified estimated, (J) and (UJ), respectively.

The RPD was greater than the 50% quality control limit for acetone for field duplicate samples SA-SD-DUP01-20120517 and SA-SD-201-20120517. The aforementioned sample positive and non-detected acetone results were qualified estimated, (J) and (UJ), respectively.

Additional Comments

Fifty-three (53) analytes were reported for VOCs.

Non-detected sample results were reported to the LOD.

Positive results below the Limit of Quantitation (LOQ) and above the Method Detection Limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Sample 1,4-dioxane non-detected results were rejected due to RRF criteria non-compliances. Sample VOC results were qualified for CCV %D quality control limit non-

compliances. Sample 4-methyl-2-pentanone non-detected results were qualified for LCS %R non-compliances. Sample SA-SD-204-20120517 results were qualified for non-compliant internal standard recoveries.

Other Factors Affecting Data Quality: Positive results below the Limit of Quantitation (LOQ) and above the Method Detection Limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit. All aqueous sample 2-chloroethyl vinyl ether results were rejected due to the acidification of the samples and the 0% recovery of the analyte in the MS and MSD samples.

The data for these analyses were reviewed with reference to the USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B SOP #HW-24 Revision #2 August 2008 and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
Appendix A - Qualified Analytical Results
Appendix B - Results as Reported by the Laboratory
Appendix C – Region II Data Validation Forms
Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 02750	NSAMPLE	SA-PZ-124-20120517			SA-PZ-125-20120517			SA-PZ-146-20120517			SA-PZ-147-20120517		
SDG: D2770	LAB_ID	D2770-21			D2770-08			D2770-22			D2770-18		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3.6			0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHANE		74			0.5	U		18			0.5	U	
1,1-DICHLOROETHENE		6.4			0.5	U		1			0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DIOXANE		10	UR	C	10	UR	C	10	UR	C	10	UR	C
2-BUTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
2-CHLOROETHYL VINYL ETHER		2.5	U		2.5	U		2.5	U		2.5	UR	D
2-HEXANONE		2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
ACETONE		2.5	U		2.5	U		2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROETHANE		1.6			0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-PZ-DUP01-20120517			SA-SW-124-20120517			SA-SW-125-20120517			SA-SW-201-20120517		
SDG: D2770	LAB_ID	D2770-11			D2770-12			D2770-09			D2770-14		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	SA-PZ-125-20120517											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHANE		0.5	U		1.1			0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DIOXANE		10	UR	C	10	UR	C	10	UR	C	10	UR	C
2-BUTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
2-CHLOROETHYL VINYL ETHER		2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
ACETONE		2.5	U		2.5	U		2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-SW-204-20120517			SA-SW-DUP01-20120517			SA-TB01-20120517		
SDG: D2770	LAB_ID	D2770-02			D2770-15			D2770-01		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				SA-SW-201-20120517					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		0.5	U		0.5	U		0.5	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE		0.5	U		0.5	U		0.5	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,4-DIOXANE		10	UR	C	10	UR	C	10	UR	C
2-BUTANONE		2.5	U		2.5	U		2.5	U	
2-CHLOROETHYL VINYL ETHER		2.5	UR	D	2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		2.5	U		2.5	U		2.5	U	
ACETONE		2.5	U		2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U	
BROMOFORM		0.5	U		0.5	U		0.5	U	
BROMOMETHANE		0.5	U		0.5	U		0.5	U	
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		0.5	U		0.5	U		0.5	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		0.5	U		0.5	U		0.5	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-PZ-124-20120517			SA-PZ-125-20120517			SA-PZ-146-20120517			SA-PZ-147-20120517		
SDG: D2770	LAB_ID	D2770-21			D2770-08			D2770-22			D2770-18		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
CYCLOHEXANE		0.5	U		0.5	U		0.5	U		0.5	U	
DICHLORODIFLUOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
ETHYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
M+P-XYLENES		1	U		1	U		1	U		1	U	
METHYL ACETATE		0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
METHYL CYCLOHEXANE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
O-XYLENE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOLUENE		0.5	U		1.5			0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-PZ-DUP01-20120517			SA-SW-124-20120517			SA-SW-125-20120517			SA-SW-201-20120517		
SDG: D2770	LAB_ID	D2770-11			D2770-12			D2770-09			D2770-14		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	SA-PZ-125-20120517											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
CYCLOHEXANE		0.5	U		0.5	U		0.5	U		0.5	U	
DICHLORODIFLUOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
ETHYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
M+P-XYLENES		1	U		1	U		1	U		1	U	
METHYL ACETATE		0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
METHYL CYCLOHEXANE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
O-XYLENE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOLUENE		0.57	J	P	0.5	U		0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-SW-204-20120517			SA-SW-DUP01-20120517			SA-TB01-20120517		
SDG: D2770	LAB_ID	D2770-02			D2770-15			D2770-01		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				SA-SW-201-20120517					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
CYCLOHEXANE		0.5	U		0.5	U		0.5	U	
DICHLORODIFLUOROMETHANE		0.5	U		0.5	U		0.5	U	
ETHYLBENZENE		0.5	U		0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U	
M+P-XYLENES		1	U		1	U		1	U	
METHYL ACETATE		0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
METHYL CYCLOHEXANE		0.5	U		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U	
O-XYLENE		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		0.5	U		0.5	U		0.5	U	
TOLUENE		0.5	U		0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		0.5	U		0.5	U		0.5	U	
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U	

PROJ_NO: 02750	NSAMPLE	SA-SD-124-20120517			SA-SD-125-20120517			SA-SD-201-20120517			SA-SD-204-20120517		
SDG: D2770	LAB_ID	D2770-13			D2770-10			D2770-16			D2770-05		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	69.0			54.0			80.0			78.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,1,2,2-TETRACHLOROETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,1,2-TRICHLOROETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,1,2-TRICHLOROTRIFLUOROETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,1-DICHLOROETHANE		20			4.6	U		3.1	U		3.15	UJ	N
1,1-DICHLOROETHENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2,3-TRICHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2,4-TRICHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2-DIBROMOETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2-DICHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2-DICHLOROETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,2-DICHLOROPROPANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,3-DICHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,4-DICHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
1,4-DIOXANE		70	UR	C	90	UR	C	60	UR	C	65	UR	CN
2-BUTANONE		18	U		23	U		15.5	U		15.5	UJ	N
2-CHLOROETHYL VINYL ETHER		18	U		23	U		15.5	U		15.5	UJ	N
2-HEXANONE		18	U		23	U		15.5	U		15.5	UJ	N
4-METHYL-2-PENTANONE		18	U		23	UJ	E	15.5	UJ	E	15.5	UJ	EN
ACETONE		150			110			100	J	G	120	J	N
BENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
BROMOCHLOROMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
BROMODICHLOROMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
BROMOFORM		3.55	U		4.6	U		3.1	U		3.15	UJ	N
BROMOMETHANE		3.55	U		4.6	UJ	C	3.1	UJ	C	3.15	UJ	CN
CARBON DISULFIDE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CARBON TETRACHLORIDE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CHLOROBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CHLORODIBROMOMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CHLOROETHANE		4.3	J	P	4.6	UJ	C	3.1	UJ	C	3.15	UJ	CN
CHLOROFORM		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CHLOROMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CIS-1,2-DICHLOROETHENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
CIS-1,3-DICHLOROPROPENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N

PROJ_NO: 02750	NSAMPLE	SA-SD-DUP01-20120517		
SDG: D2770	LAB_ID	D2770-17		
FRACTION: OV	SAMP_DATE	5/17/2012		
MEDIA: SEDIMENT	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	86.0		
	DUP_OF	SA-SD-201-20120517		
PARAMETER		RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		2.85	U	
1,1,2,2-TETRACHLOROETHANE		2.85	U	
1,1,2-TRICHLOROETHANE		2.85	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		2.85	U	
1,1-DICHLOROETHANE		2.85	U	
1,1-DICHLOROETHENE		2.85	U	
1,2,3-TRICHLOROBENZENE		2.85	U	
1,2,4-TRICHLOROBENZENE		2.85	U	
1,2-DIBROMO-3-CHLOROPROPANE		2.85	U	
1,2-DIBROMOETHANE		2.85	U	
1,2-DICHLOROBENZENE		2.85	U	
1,2-DICHLOROETHANE		2.85	U	
1,2-DICHLOROPROPANE		2.85	U	
1,3-DICHLOROBENZENE		2.85	U	
1,4-DICHLOROBENZENE		2.85	U	
1,4-DIOXANE		55	UR	C
2-BUTANONE		14.5	U	
2-CHLOROETHYL VINYL ETHER		14.5	U	
2-HEXANONE		14.5	U	
4-METHYL-2-PENTANONE		14.5	U	
ACETONE		14.5	UJ	G
BENZENE		2.85	U	
BROMOCHLOROMETHANE		2.85	U	
BROMODICHLOROMETHANE		2.85	U	
BROMOFORM		2.85	U	
BROMOMETHANE		2.85	U	
CARBON DISULFIDE		2.85	U	
CARBON TETRACHLORIDE		2.85	U	
CHLOROBENZENE		2.85	U	
CHLORODIBROMOMETHANE		2.85	U	
CHLOROETHANE		2.85	U	
CHLOROFORM		2.85	U	
CHLOROMETHANE		2.85	U	
CIS-1,2-DICHLOROETHENE		2.85	U	
CIS-1,3-DICHLOROPROPENE		2.85	U	

PROJ_NO: 02750	NSAMPLE	SA-SD-124-20120517			SA-SD-125-20120517			SA-SD-201-20120517			SA-SD-204-20120517		
SDG: D2770	LAB_ID	D2770-13			D2770-10			D2770-16			D2770-05		
FRACTION: OV	SAMP_DATE	5/17/2012			5/17/2012			5/17/2012			5/17/2012		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	69.0			54.0			80.0			78.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
CYCLOHEXANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
DICHLORODIFLUOROMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
ETHYLBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
ISOPROPYLBENZENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
M+P-XYLENES		7	U		9	U		6	U		6.5	UJ	N
METHYL ACETATE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
METHYL CYCLOHEXANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
METHYL TERT-BUTYL ETHER		3.55	U		4.6	U		3.1	U		3.15	UJ	N
METHYLENE CHLORIDE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
O-XYLENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
STYRENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TETRACHLOROETHENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TOLUENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TRANS-1,2-DICHLOROETHENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TRANS-1,3-DICHLOROPROPENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TRICHLOROETHENE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
TRICHLOROFLUOROMETHANE		3.55	U		4.6	U		3.1	U		3.15	UJ	N
VINYL CHLORIDE		3.55	U		4.6	U		3.1	U		3.15	UJ	N

PROJ_NO: 02750	NSAMPLE	SA-SD-DUP01-20120517		
SDG: D2770	LAB_ID	D2770-17		
FRACTION: OV	SAMP_DATE	5/17/2012		
MEDIA: SEDIMENT	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	86.0		
	DUP_OF	SA-SD-201-20120517		
PARAMETER		RESULT	VQL	QLCD
CYCLOHEXANE		2.85	U	
DICHLORODIFLUOROMETHANE		2.85	U	
ETHYLBENZENE		2.85	U	
ISOPROPYLBENZENE		2.85	U	
M+P-XYLENES		5.5	U	
METHYL ACETATE		2.85	U	
METHYL CYCLOHEXANE		2.85	U	
METHYL TERT-BUTYL ETHER		2.85	U	
METHYLENE CHLORIDE		2.85	U	
O-XYLENE		2.85	U	
STYRENE		2.85	U	
TETRACHLOROETHENE		2.85	U	
TOLUENE		2.85	U	
TRANS-1,2-DICHLOROETHENE		2.85	U	
TRANS-1,3-DICHLOROPROPENE		2.85	U	
TRICHLOROETHENE		2.85	U	
TRICHLOROFLUOROMETHANE		2.85	U	
VINYL CHLORIDE		2.85	U	

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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical Services/Scarborough, ME
Service Request:	SF6152
Analyses/Method:	Volatile Organic Compounds/SW-846 8260B
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Waverly Braunstein/AECOM — Completed on: October 29, 2012
Reviewed by:	Andrea Mischel/AECOM — File Name: SF6152_VOCs_wb.docx

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 10 and 11, 2012.

Sample ID	Matrix/Sample Type
FC-MW02IR1-20120910	Groundwater
FC-MW02SR1-20120910	Groundwater
FC-MW03SR1-20120911	Groundwater
FC-MW05I-20120910	Groundwater
FC-MW05S-20120910	Groundwater
FC-PZ05I1-20120910	Groundwater
SA-PZ118I-20120911	Groundwater
SA-PZ118S-20120911	Groundwater
SA-PZ123I-20120911	Groundwater
SA-PZ123I1-20120911	Groundwater
SA-PZ123S-20120911	Groundwater
SA-PZ140I-20120911	Groundwater
SA-PZ142I-20120911	Groundwater
SA-PZ143I-20120911	Groundwater
SA-PZ171I-20120911	Groundwater
SA-PZ172I-20120911	Groundwater
TB01-20120911	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*

(June 2008), and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (COC)/sample integrity
✓ Holding times and sample preservation
✓ Instrument tuning
✗ Initial calibration/continuing calibration verification
✓ Laboratory blanks/trip blanks/equipment blanks
✗ Surrogate spike recoveries
✗ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
NA Field duplicates
✓ Internal standards
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the BFB tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

CCV Linearity Nonconfomances:

Criteria	Actions	
	Detected Results	Nondetected Results*
%D > 20%	J	UJ
%Drift	J**	UJ**
*In cases where the bias was determined to be high, professional judgment was used to accept nondetected results unqualified. ** No guidance in NFG, thus AECOM professional judgment was used		

Qualified sample results are shown in Table 1.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the method detection limit (MDL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-2. Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-3. Data qualification to the analytes associated with the specific MS/MSD nonconformances was as follows:

Criteria	Action	
	Detected Compounds	**Nondetected Compounds**
%R> UL	J	No qualification
20% ≤ %R < LL	J	UJ
%R <20% (see note 1)	J	R*
%RPD > UL (see note 2)	J	No qualification
Note: Actions are applied to the native unspiked sample only (see note 3) *When the native sample concentration is >4X the concentration of the spike added (based on Region I criteria), evaluate the MS, MSD, and native sample with regards to %RSD rather than %R (AECOM professional judgment)		

Notes:

1. Based on NFG 2008 VOC guidance, AECOM professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, AECOM professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.
2. In the absence of Region 2 guidance, RPD actions are based on AECOM professional judgment.
3. If a field duplicate sample was also collected for the native sample chosen for MS/MSD analysis, professional judgment is used to apply MS/MSD actions to the corresponding field duplicate sample as well as the native sample.

Qualified sample results are shown in Table 1.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-4. Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:
1. Based on NFG 2008 VOC guidance, AECOM professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, AECOM professional judgment is used to estimate (UJ) rather the reject sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of ≤50% for solid matrices and ≤30% for aqueous matrices. This criteria applies if both results were greater than five times the quantitation limit (LOQ).

No field duplicate samples were collected with this data set.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

All compounds detected at concentrations less than the limit of quantitation (LOQ) but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOQ	Units	Validation Qualifier	Validation Reason
FC-MW02SR1-20120910	WG	1,1,2-Trichloroethane	0.66	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	1,1-Dichloroethane	0.94	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	1,2-Dichlorobenzene	10.	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	1,2-Dichloroethene, total	1.4	1.0	ug/L	J	s
FC-MW02SR1-20120910	WG	1,4-Dichlorobenzene	0.43	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	cis-1,2-Dichloroethene	1.4	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Cyclohexane	4.3	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Ethylbenzene	14.	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Isopropylbenzene	10.	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	M- and p-xylene	52.	1.0	ug/L	J	s
FC-MW02SR1-20120910	WG	Methyl cyclohexane	5.2	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	o-Xylene	0.90	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Tetrachloroethene	0.55	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Trichloroethene	0.57	0.50	ug/L	J	s
FC-MW02SR1-20120910	WG	Xylenes, total	53.	1.5	ug/L	J	s
FC-MW03SR1-20120911	WG	1,1,1-Trichloroethane	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	1,1,2,2-Tetrachloroethane	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	1,1,2-Trichloro-1,2,2-trichfluoroethane	0.50	0.50	ug/L	UJ	m,md

Sample ID	Matrix	Compound	Result	LOQ	Units	Validation Qualifier	Validation Reason
FC-MW03SR1-20120911	WG	1,1,2-Trichloroethane	1.9	0.50	ug/L	J	m
FC-MW03SR1-20120911	WG	1,1-Dichloroethane	3.0	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	1,1-Dichloroethene	3.8	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	1,2,4-Trichlorobenzene	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	1,2-Dibromoethane	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	1,2-Dichlorobenzene	2.8	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	1,2-Dichloroethane	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	1,2-Dichloroethene, total	0.73	1.0	ug/L	J	m,md
FC-MW03SR1-20120911	WG	1,2-Dichloropropane	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	1,3-Dichlorobenzene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	1,4-Dichlorobenzene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Benzene	0.77	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	Bromodichloromethane	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Bromoform	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	Carbon disulfide	0.50	0.50	ug/L	UJ	md
FC-MW03SR1-20120911	WG	Carbon tetrachloride	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Chlorobenzene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Chloroethane	4.1	1.0	ug/L	J	md
FC-MW03SR1-20120911	WG	Chloroform	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	cis-1,2-Dichloroethene	0.73	0.50	ug/L	J	m,md

Sample ID	Matrix	Compound	Result	LOQ	Units	Validation Qualifier	Validation Reason
FC-MW03SR1-20120911	WG	cis-1,3-Dichloropropene	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	Cyclohexane	3.0	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	Dibromochloromethane	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	Dichlorodifluoromethane	1.0	1.0	ug/L	UJ	md
FC-MW03SR1-20120911	WG	Ethylbenzene	38.	0.50	ug/L	J	m
FC-MW03SR1-20120911	WG	Isopropylbenzene	17.	0.50	ug/L	J	m
FC-MW03SR1-20120911	WG	m- and p-Xylene	0.61	1.0	ug/L	J	m,md
FC-MW03SR1-20120911	WG	Methyl acetate	0.75	0.75	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Methyl cyclohexane	7.1	0.50	ug/L	J	m,md
FC-MW03SR1-20120911	WG	Methyl tert-butyl ether	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	Methylene chloride	2.5	2.5	ug/L	UJ	md
FC-MW03SR1-20120911	WG	o-Xylene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Styrene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	Tetrachloroethene	0.50	0.50	ug/L	UJ	md
FC-MW03SR1-20120911	WG	Toluene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	trans-1,2-Dichloroethene	0.50	0.50	ug/L	UJ	m,md
FC-MW03SR1-20120911	WG	trans-1,3-Dichloropropene	0.50	0.50	ug/L	UJ	m
FC-MW03SR1-20120911	WG	Trichloroethene	0.53	0.50	ug/L	J	m
FC-MW03SR1-20120911	WG	Trichlorofluoromethane	1.0	1.0	ug/L	UJ	md
FC-MW03SR1-20120911	WG	Vinyl chloride	1.0	1.0	ug/L	UJ	md

Sample ID	Matrix	Compound	Result	LOQ	Units	Validation Qualifier	Validation Reason
FC-MW03SR1-20120911	WG	Xylenes, total	0.61	1.5	ug/L	J	m,md
FC-PZ05I1-20120910	WG	1,2,4-Trichlorobenzene	0.50	0.50	ug/L	UJ	c
SA-PZ118S-20120911	WG	1,2,4-Trichlorobenzene	0.50	0.50	ug/L	UJ	c
SA-PZ123I1-20120911	WG	1,2,4-Trichlorobenzene	0.50	0.50	ug/L	UJ	c
SA-PZ123I1-20120911	WG	Chloroethane	1.1	1.0	ug/L	J	c,l
SA-PZ142I-20120911	WG	1,1,1-Trichloroethane	66.	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	1,1-Dichloroethene	28.	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	1,2,4-Trichlorobenzene	0.59	0.50	ug/L	J	c,s
SA-PZ142I-20120911	WG	1,2-Dichlorobenzene	0.81	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	1,3-Dichlorobenzene	0.68	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	1,4-Dichlorobenzene	3.3	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	Benzene	0.36	0.50	ug/L	J	s
SA-PZ142I-20120911	WG	Chloroethane	48.	1.0	ug/L	J	c,l,s
SA-PZ172I-20120911	WG	1,1,1-Trichloroethane	22.	0.50	ug/L	J	s
SA-PZ172I-20120911	WG	1,1-Dichloroethene	16.	0.50	ug/L	J	s
SA-PZ172I-20120911	WG	1,2,4-Trichlorobenzene	0.67	0.50	ug/L	J	c,s
SA-PZ172I-20120911	WG	1,2-Dichlorobenzene	0.64	0.50	ug/L	J	s
SA-PZ172I-20120911	WG	1,2-Dichloroethene, total	0.22	1.0	ug/L	J	s
SA-PZ172I-20120911	WG	1,3-Dichlorobenzene	0.71	0.50	ug/L	J	s
SA-PZ172I-20120911	WG	1,4-Dichlorobenzene	3.5	0.50	ug/L	J	s
SA-PZ172I-20120911	WG	Chloroethane	29.	1.0	ug/L	J	c,l,s
SA-PZ172I-20120911	WG	cis-1,2-Dichloroethene	0.22	0.50	ug/L	J	s

Attachment A

Non Conformance Summary Tables

Table A-1 - Continuing Calibrations

Calibration	Compound	%D or %Drift
WG113509	1,2,4-Trichlorobenzene	23.95 (low)
	Carbon tetrachloride	24.37 (high)
	Chloroethane	39.51 (high)
	Dichlorodifluoromethane	20.75 (high)
	Trichlorofluoromethane	37.45 (high)
Associated samples: FC-PZ05I1-20120910, SA-PZ118S-20120911, SA-PZ123I1-20120911, SA-PZ142I-20120911, and SA-PZ172I-20120911		

Table A-2 – Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
FC-MW02SR1-20120910	1,2-Dichloroethane-d4	121.	70	120
FC-MW02SR1-20120910	1,2-Dichloroethane-d4	123.	70	120
FC-MW05I-20120910	1,2-Dichloroethane-d4	124.	70	120
SA-PZ118I-20120911	1,2-Dichloroethane-d4	125.	70	120
SA-PZ142I-20120911	1,2-Dichloroethane-d4	127.	70	120
SA-PZ172I-20120911	1,2-Dichloroethane-d4	128.	70	120

Table A-3 - Matrix Spike

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
FC-MW03SR1-20120911	Ethylbenzene	82.6	61.6	75	125	14	30
FC-MW03SR1-20120911	Styrene	73.6	53.6	65	135	31	30
FC-MW03SR1-20120911	cis-1,3-Dichloropropene	61.8	46.2	70	130	29	30
FC-MW03SR1-20120911	trans-1,3-Dichloropropene	68.6	51	55	140	29	30
FC-MW03SR1-20120911	1,4-Dichlorobenzene	66.8	46	75	125	37	30
FC-MW03SR1-20120911	1,2-Dichloroethane	86.6	60.8	70	130	35	30
FC-MW03SR1-20120911	m- and p-Xylene	75.2	52	75	130	36	30
FC-MW03SR1-20120911	Methyl cyclohexane	48	85.6	73	125	46	30
FC-MW03SR1-20120911	Toluene	74.8	52.8	75	120	34	30
FC-MW03SR1-20120911	Chlorobenzene	72	52.4	80	120	32	30
FC-MW03SR1-20120911	Cyclohexane	91.6	61	71	133	37	30
FC-MW03SR1-20120911	1,2,4-Trichlorobenzene	82.8	61.6	65	135	29	30

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
FC-MW03SR1-20120911	Dibromochloromethane	74.2	54.8	60	135	30	30
FC-MW03SR1-20120911	Tetrachloroethene	67.2	48.8	45	150	32	30
FC-MW03SR1-20120911	Xylenes, total	74.9	52.6	89	116	35	30
FC-MW03SR1-20120911	cis-1,2-Dichloroethene	79.9	54.1	70	125	38	30
FC-MW03SR1-20120911	trans-1,2-Dichloroethene	77.8	53	60	140	38	30
FC-MW03SR1-20120911	Methyl tert-butyl ether	39.7	46.1	65	125	15	30
FC-MW03SR1-20120911	1,2-Dichloroethene, total	78.9	53.6	84	121	38	30
FC-MW03SR1-20120911	1,3-Dichlorobenzene	68.2	46	75	125	39	30
FC-MW03SR1-20120911	Carbon tetrachloride	95.2	63.6	65	140	40	30
FC-MW03SR1-20120911	Chloroform	82.8	57.6	65	135	36	30
FC-MW03SR1-20120911	Benzene	77.7	54.1	80	120	35	30
FC-MW03SR1-20120911	1,1,1-Trichloroethane	85.4	59	65	130	36	30
FC-MW03SR1-20120911	Chloroethane	128	83.2	60	135	39	30
FC-MW03SR1-20120911	Vinyl chloride	97.2	68.6	50	145	34	30
FC-MW03SR1-20120911	Methylene chloride	77.6	55.4	55	140	33	30
FC-MW03SR1-20120911	Carbon disulfide	90.4	61.2	35	160	38	30
FC-MW03SR1-20120911	Bromoform	81.6	61	70	130	29	30
FC-MW03SR1-20120911	Bromodichloromethane	83.6	58.8	75	120	35	30
FC-MW03SR1-20120911	1,1-Dichloroethane	89	59.8	70	135	36	30
FC-MW03SR1-20120911	1,1-Dichloroethene	79.8	55	70	130	33	30
FC-MW03SR1-20120911	Trichlorofluoromethane	110	72.2	60	145	42	30
FC-MW03SR1-20120911	Dichlorodifluoromethane	99.2	67.2	30	155	38	30
FC-MW03SR1-20120911	1,1,2-Trichloro-1,2,2-trichfluoroethane	46.8	83.8	73	126	57	30
FC-MW03SR1-20120911	1,2-Dichloropropane	74.4	52.2	75	125	35	30
FC-MW03SR1-20120911	1,1,2-Trichloroethane	90.2	68.8	75	125	26	30
FC-MW03SR1-20120911	Trichloroethene	75.7	57.5	70	125	27	30
FC-MW03SR1-20120911	Methyl acetate	53.6	79.6	70	132	39	30
FC-MW03SR1-20120911	1,1,2,2-Tetrachloroethane	74	55.2	65	130	29	30
FC-MW03SR1-20120911	o-Xylene	74.6	54	80	120	32	30

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
FC-MW03SR1-20120911	1,2-Dichlorobenzene	71.2	50.8	70	120	31	30
FC-MW03SR1-20120911	Isopropylbenzene	99	70.4	75	125	24	30

Table A-4 - Lab Control Sample

LCS ID	Compound	LCS % Recovery	LCSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit	Associated Samples
WG113509-LCS	Chloroethane	143		60	135			PREP: WG113509

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical Services/Scarborough, ME
Service Request:	SF6237
Analyses/Method:	Volatile organic compounds/SW-846 8260B
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Waverly Braunstein/AECOM — Completed on: October 30, 2012
Reviewed by:	Andrea Mischel/AECOM — File Name: SF6237_VOCs_wb.docx

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 12 and 13, 2012.

Sample ID	Matrix/Sample Type
EB01-20120913	Equipment blank
FT-PZ455S-20120913	Groundwater
FT-PZ456S-20120912	Groundwater
FT-PZ458I-20120912	Groundwater
FT-PZ462S-20120913	Groundwater
FT-PZDUP02-20120913	Groundwater (Field duplicate of FT-PZ462S-20120913)
SA-MW127I-20120913	Groundwater
SA-MW128D-20120913	Groundwater
SA-MW128I-20120913	Groundwater
SA-MW129D-20120912	Groundwater
SA-MW129I-20120913	Groundwater
SA-MW129S-20120913	Groundwater
SA-PZ122D-20120912	Groundwater
SA-PZ122I-20120912	Groundwater
SA-PZ135I-20120913	Groundwater
SA-PZ144I-20120912	Groundwater
SA-PZ149I1-20120913	Groundwater
SA-PZ166I-20120912	Groundwater
TB02-20120913	Trip blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract*

Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008), and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

- ✓ Data completeness (chain-of-custody (COC)/sample integrity
- ✓ Holding times and sample preservation
- ✓ Instrument tuning
- ✗ Initial calibration/continuing calibration verification
- ✗ Laboratory blanks/trip blanks/equipment blanks
- ✓ Surrogate spike recoveries
- ✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
- ✓ Field duplicates
- ✓ Internal standards
- ✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

<u>Data Completeness</u>

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

<u>Holding Times/Sample Preservation</u>

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the BFB tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

CCV Linearity Nonconfomances:

Criteria	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

Qualified sample results are shown in Table 1.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Nonconformances are summarized in Attachment A in Table A-2. Sample results were qualified as follows:

For common lab contaminants (methylene chloride, acetone, 2-butanone):

Blank type	Blank result	Sample result	Action for samples
Method, Storage,	Detects	Not detected	No qualification
		< 2x LOQ	Report sample LOQ value with a U

Field, Trip, or Instrument*	≤ 2x LOQ	≥ 2x LOQ and ≤ 4x the LOQ	Report the sample result with a U**
		≥ 4x the LOQ	No qualifications
	> 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and < blank contamination	Report the sample result with a U
		≥ 2x LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on AECOM professional judgment			

For all other compounds:

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and ≤ 2x the LOQ	Report the sample result with a U**
		≥ 2x the LOQ	No qualifications
	> LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and < blank contamination	Report the sample result with a U or reject the sample result as unusable R
		≥ LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
	TIC detected	Detects	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on AECOM professional judgment			

LOQ (Level of quantitation) is equivalent to the lowest calibration standard.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

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LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of ≤50% for solid matrices and ≤30% for aqueous matrices. This criteria applies if both results were greater than five times the limit of quantitation (LOQ).

All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

All compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOQ	Units	Validation Qualifier	Validation Reason
FT-PZ456S-20120912	WG	1,2,4-Trichlorobenzene	0.50	0.50	µg/L	UJ	c
FT-PZ456S-20120912	WG	Methyl acetate	0.75	0.75	µg/L	UJ	c
FT-PZ456S-20120912	WG	o-Xylene	0.50	0.50	µg/L	UJ	c
FT-PZ458I-20120912	WG	1,2,4-Trichlorobenzene	0.50	0.50	µg/L	UJ	c
FT-PZ458I-20120912	WG	Methyl acetate	0.75	0.75	µg/L	UJ	c
FT-PZ458I-20120912	WG	o-Xylene	0.50	0.50	µg/L	UJ	c
SA-MW129D-20120912	WG	1,2,4-Trichlorobenzene	0.50	0.50	µg/L	UJ	c
SA-MW129D-20120912	WG	Methyl acetate	0.75	0.75	µg/L	UJ	c
SA-MW129D-20120912	WG	o-Xylene	0.50	0.50	µg/L	UJ	c
SA-PZ122D-20120912	WG	1,2,4-Trichlorobenzene	0.50	0.50	µg/L	UJ	c
SA-PZ122D-20120912	WG	Methyl acetate	0.75	0.75	µg/L	UJ	c
SA-PZ122D-20120912	WG	o-Xylene	0.50	0.50	µg/L	UJ	c
SA-PZ122I-20120912	WG	Acetone	3.9	3.9	µg/L	U	be
SA-PZ144I-20120912	WG	1,2,4-Trichlorobenzene	0.50	0.50	µg/L	UJ	c
SA-PZ144I-20120912	WG	Methyl acetate	0.75	0.75	µg/L	UJ	c
SA-PZ144I-20120912	WG	o-Xylene	0.50	0.50	µg/L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Continuing Calibrations

Calibration	Compound	%D or %Drift
WG113708	o-Xylene	21.1
	1,2,4-Trichlorobenzene	32.4
	Methyl acetate	21.6
Associated samples: FT-PZ456S-20120912, FT-PZ458I-20120912, SA-MW129D-20120912, SA-PZ122D-20120912, and SA-PZ144I-20120912		

Table A-2 - Field Blank

Blank ID	Compound	Result	LOQ	Units	Action Level	Associated Samples
EB01-20120913	Acetone	76	2.5	µg/L	76	All

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Level of quantitation raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical Services/Scarborough, ME
Service Request:	SF6362
Analyses/Method:	Volatile organic compounds/SW-846 8260B and EPA Method 504.1
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Waverly Braunstein/AECOM — Completed on: October 30, 2012
Reviewed by:	Andrea Mischel/AECOM — File Name: SF6362_VOCs_wb.docx

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 17 and 18, 2012.

Sample ID	Matrix/Sample Type
FT-MW01I-20120917	Groundwater
FT-MW01S-20120917	Groundwater
FT-MW02I-20120917	Groundwater
FT-MW02S-20120917	Groundwater
FT-MW03S-20120917	Groundwater
FT-MW05I-20120917	Groundwater
FT-MW05S-20120917	Groundwater
FT-MW06I-20120918	Groundwater
FT-MW06S-20120918	Groundwater
FT-MW07S-20120917	Groundwater
FT-MW08I-20120918	Groundwater
FT-MW08S-20120918	Groundwater
FT-MWDUP01-20120917	Groundwater (Field duplicate of FT-MW05I-20120917)
FT-PZ452S-20120917	Groundwater
FT-PZ460I-20120918	Groundwater
FT-PZ461I-20120918	Groundwater
SA-MW131D-20120918	Groundwater
SA-MW131I-20120918	Groundwater
SA-MW132I-20120918	Groundwater
SA-MW132S-20120918	Groundwater
SA-MWDUP04-20120918	Groundwater (Field duplicate of SA-MW131D-20120918)

Sample ID	Matrix/Sample Type
SA-PZ145D-20120918	Groundwater
SA-PZ145I-20120918	Groundwater
TB04-20120918	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Report 600/R-95-311 Method 504.1* (USEPA, 1995), the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

- ✓ Data completeness (chain-of-custody (COC)/sample integrity
- ✓ Holding times and sample preservation
- ✓ Instrument tuning
- ✗ Initial calibration/continuing calibration verification
- ✗ Laboratory blanks/trip blanks/equipment blanks
- ✗ Surrogate spike recoveries
- ✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
- ✓ Field duplicates
- ✓ Internal standards
- ✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

<u>Data Completeness</u>

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the BFB tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICAL Linearity Nonconformances:

Criteria	Actions	
	Detected Results	Nondetected Results
%RSD > 15% and quantitation based on mean RF	J	UJ
r or r^2 < 0.99 and quantitation based on linear regression	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

CCV Linearity Nonconfomances:

Criteria	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

Qualified sample results are shown in Table 1.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Nonconformances are summarized in Attachment A in Table A-2. Sample results were qualified as follows:

For common lab contaminants (methylene chloride, acetone, 2-butanone):

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and ≤ 4x the LOQ	Report the sample result with a U**
		≥ 4x the LOQ	No qualifications
	> 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and < blank contamination	Report the sample result with a U
		≥ 2x LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on AECOM professional judgment			

For all other compounds:

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and ≤ 2x the LOQ	Report the sample result with a U**
		≥ 2x the LOQ	No qualifications
	> LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and < blank contamination	Report the sample result with a U or reject the sample result as unusable R
		≥ LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
	TIC detected	Detects	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			

**Based on AECOM professional judgment

LOQ (Level of quantitation) is equivalent to the lowest calibration standard.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-3. Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of ≤50% for solid matrices and ≤30% for aqueous matrices. This criteria applies if both results were greater than five times the limit of quantitation (LOQ).

All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

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Sample Results/Reporting Issues

All compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
FT-MW01I-20120917	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-MW05I-20120917	WG	Acetone	2.5	2.5	µg/L	UJ	c
FT-MW05I-20120917	WG	Chloroform	0.68	0.50	µg/L	J	s
FT-MW05I-20120917	WG	Chloromethane	1	1.0	µg/L	U	be
FT-MW06I-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-MW06I-20120918	WG	Chloromethane	1	1.0	µg/L	U	be
FT-MW06S-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-MW08I-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-MW08I-20120918	WG	Chloromethane	1	1.0	µg/L	U	be
FT-MW08S-20120918	WG	Acetone	2.5	2.5	µg/L	UJ	c
FT-MWDUP01-20120917	WG	Acetone	2.5	2.5	µg/L	UJ	c
FT-MWDUP01-20120917	WG	Chloroform	0.66	0.50	µg/L	J	s
FT-PZ460I-20120918	WG	Chloromethane	1	1.0	µg/L	U	be
SA-MW131D-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MW131I-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MW132I-20120918	WG	Chloroethane	12.	1.0	µg/L	J	c
SA-MW132S-20120918	WG	Acetone	2.5	2.5	µg/L	UJ	c
SA-MWDUP04-20120918	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MWDUP04-20120918	WG	Chloromethane	1	1.0	µg/L	U	be
TB04-20120918	WQ	Bromomethane	1.0	1.0	µg/L	UJ	c
TB04-20120918	WQ	Chloromethane	1.1	1.0	µg/L	J	c

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Attachment A

Non Conformance Summary Tables

Table A-1 - Initial and Continuing Calibrations

Calibration	Compound	%RSD
ICAL GCMS-C 9/26/2012	Chloroethane	35
Associated samples: FT-MW01I-20120917, FT-MW06I-20120918, FT-MW06S-20120918, FT-MW08I-20120918, SA-MW131D-20120918, SA-MW131I-20120918, SA-MW132I-20120918, and SA-MWDUP04-20120918		
ICAL GCMS-D 9/26/2012	Acetone	23
Associated samples: FT-MW05I-20120917, FT-MW08S-20120918, FT-MWDUP01-20120917, and SA-MW132S-20120918		
Calibration	**Compound**	**%D**
CCV GCMS-C 9/27/2012	Chloroethane	25
Associated samples: FT-MW01I-20120917, FT-MW06I-20120918, FT-MW06S-20120918, FT-MW08I-20120918, SA-MW131D-20120918, SA-MW131I-20120918, SA-MW132I-20120918, and SA-MWDUP04-20120918		
CCV GCMS-D	Chloromethane	26
	Bromomethane	49
Associated sample: TB04-20120918		

Table A-2 - Trip Blank

Blank ID	Compound	Result	LOQ	Units	Action Level	Associated Samples
TB04-20120918	Chloromethane	1.1	1.0	µg/L	1.1	All

Table A-3 – Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
FT-MW02S-20120917	Tetrachloro-m-xylene	126.	36	123
FT-MW05I-20120917	1,2-Dichloroethane-d4	124.	70	120
FT-MW05I-20120917	Dibromofluoromethane	125.	85	115
FT-MW05I-20120917	Toluene-d8	130.	85	120
FT-MW05I-20120917	4-Bromofluorobenzene	127.	75	120
FT-MW08S-20120918	1,2-Dichloroethane-d4	126.	70	120
FT-MW08S-20120918	Dibromofluoromethane	125.	85	115
FT-MW08S-20120918	Toluene-d8	129.	85	120
FT-MW08S-20120918	4-Bromofluorobenzene	129.	75	120
FT-MWDUP01-20120917	1,2-Dichloroethane-d4	123.	70	120
FT-MWDUP01-20120917	Dibromofluoromethane	124.	85	115
FT-MWDUP01-20120917	Toluene-d8	128.	85	120
FT-MWDUP01-20120917	4-Bromofluorobenzene	126.	75	120
SA-MW132S-20120918	1,2-Dichloroethane-d4	126.	70	120
SA-MW132S-20120918	Dibromofluoromethane	125.	85	115
SA-MW132S-20120918	Toluene-d8	130.	85	120
SA-MW132S-20120918	4-Bromofluorobenzene	126.	75	120

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Level of quantitation raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical
Service Request:	SF6472
Analyses/Method:	EPA SW-846 Method 6010B for Trace Elements and Metals (ICP-AES) / 6010B
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Andrea Mischel/AECOM — Completed on: 10/30/2012
Reviewed by:	NA/AECOM — File Name: SF6472_6010B

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 19, 2012 and September 20, 2012.

Sample ID	Matrix/Sample Type
EB02-20120920	Equipment blank
SA-PZDUP03-20120919	Field Duplicate of SA-PZ161I-20120919
SA-PZ157I1-20120919	Ground water
SA-PZ157I-20120919	Ground water
SA-PZ161I-20120919	Ground water

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846,* specifically SW-846 methods 6010B (Rev. 2 December 1996), 6020A (Rev. 1 January 1998), and 7470A/7471A (Rev. 1 September 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

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REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness (chain-of-custody (COC)/sample integrity
✓	Holding times and sample preservation
NA	ICP/MS Instrument tuning
✓	Initial calibration/continuing calibration verification
✗	Laboratory blanks/equipment blanks
✓	ICP interference check standards
✓	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
NA	Laboratory duplicate results
✓	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
✓	Field duplicates
✓	ICP serial dilution results
NA	ICP/MS internal standard performance
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- all criteria were met for the calibration curves
- the initial calibration verification (ICV) percent recovery (%R) criteria were met;
- the continuing calibration verification standard (CCV) method percent difference (%Ds) were met; and
- the low level check standards (CRI or CRA) %R criteria were met.

The QC acceptance criteria were met.

Laboratory Blanks/Equipment Blanks

Laboratory method blanks and equipment rinsate blanks were evaluated as to whether there were contaminants detected above the detection limit (DL). Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method and equipment rinsate results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Nonconformances are summarized in Attachment A in Table A-1. Sample results were qualified as follows:

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB (Positive)	≥IDL/DL but ≤ LOQ	Nondetect	No action
		≥IDL/DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use AECOM professional judgment (see below [1])
	>LOQ	≥IDL/DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ but < ICB/CCB Result	Qualify at level of Blank Result with a "U" or Qualify result as unusable (R)
		>ICB/CCB but <10x the ICB/CCB result	Qualify as estimated (J)
		≥10x ICB/CCB	No action is taken based on AECOM professional judgment
ICB/CCB (Negative)	< (-LOQ)	Nondetect	Use AECOM professional judgment and qualify as estimated (UJ)
		≥IDL/DL but < LOQ	Use AECOM professional judgment and qualify results < LOQ as estimated (J)
		< 10x LOQ	Qualify results >LOQ but <10x LOQ as estimated (J)
		≥10x LOQ	No action is taken based on AECOM professional judgment
	≤ -IDL/DL and ≥ -LOQ	Nondetect	Use AECOM professional judgment, qualify as estimated (UJ)
		≥IDL/DL and <5x |neg. blank|	Use AECOM professional judgment, qualify results as estimated (J)
PB / EB/ FB (Positive)	> LOQ	≥IDL/DL but ≤ LOQ	Qualify as nondetect (U) at the LOQ
		>LOQ but < 10x Blank Result	Qualify results as unusable (R)
		≥10x Blank Result	No action

Blank Type	Blank Result	Sample Result	Action for Samples
	≥IDL/DL but ≤LOQ	Nondetect	No action
		≥IDL/DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use AECOM professional judgment (see below [1])
PB (Negative)	< (-LOQ)	< 10x LOQ	Qualify positive results <10x LOQ as estimated (J) and nondetects as estimated (UJ)
		≥10x LOQ	No action

[1] Establish an action level (AL) at 5x the blank contamination. If sample result is <AL, qualify the reported result with a U.

If positive and negative blanks are reported for an analyte in the calibration blanks, pick the highest blank (absolute value) and use the table above with the following modifications:

Blank Type	Blank Results	Actions in Table to Use	Modifications
ICB/CCB	Positive > Negative	ICB/CCB (Positive)	Estimate nondetects (UJ)
	Negative > Positive	ICB/CCB (Negative)	Estimate J

Qualified sample results are shown in Table 1.

ICP Interference Check Standards

The ICP interference check standards (ICSA, ICSAB) were reviewed for conformance.

All criteria were met for the ICSA and ICSAB.

MS/MSD Results

The MS and/or MSD %Rs and/or RPDs were reviewed for conformance with the QC acceptance criteria.

The MS and/or MSD %Rs and/or RPDs were within the QC acceptance criteria

Laboratory Duplicate Results

There were no laboratory duplicate samples analyzed with this data set. MS/MSD analyses were performed instead. There were no validation qualifications made on this basis.

LCS/LCSD Results

The LCS/LCSD %Rs and/or RPDs were reviewed for conformance with the QC acceptance criteria.

The LCS and LCSD %Rs and RPDs were within the QC acceptance criteria.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC acceptance criterion of ≤50% for solid matrices and ≤30% for aqueous matrices. This criterion applies if both results were greater than 10 times the limit of quantitation (LOQ).

All field duplicate precision criteria were met.

ICP Serial Dilution Results

The serial dilution percent differences (%Ds) were reviewed for conformance with the QC acceptance criteria.

The serial dilution %Ds were within the QC acceptance criteria.

Sample Results/Reporting Issues

All analytes detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

There were no dilutions made to samples.

All criteria were met.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Analyte	Result	LOQ	Units	Validation Qualifiers	Validation Reason
EB02-20120920	WH	IRON	80	80	µg/L	U	bl

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Attachment A

Non Conformance Summary Tables

Table A-1- Lab Blanks

Blank ID	Analyte	Result	LOQ	Units	Associated Samples
PBWFI25ICW2	IRON	14.200	80	UG_L	EB02-20120920 SA-PZ157I-20120919 SA-PZ157I1-20120919 SA-PZ161I-20120919 SA-PZDUP03-20120919

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical Services/Scarborough, ME
Service Request:	SF6472
Analyses/Method:	Volatile organic compounds / SW-846 8260B
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Waverly Braunstein/AECOM — Completed on: October 30, 2012
Reviewed by:	Andrea Mischel/AECOM — File Name: SF6472_VOCs_wb.docx

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 19 and 20, 2012.

Sample ID	Matrix/Sample Type
EB02-20120920	Equipment blank
FT-PZ451S-20120920	Groundwater
FT-PZ454S-20120920	Groundwater
SA-MW126D-20120919	Groundwater
SA-MW126I-20120919	Groundwater
SA-MW126S-20120919	Groundwater
SA-PZ134I-20120920	Groundwater
SA-PZ138I1-20120920	Groundwater
SA-PZ139I-20120920	Groundwater
SA-PZ157I-20120919	Groundwater
SA-PZ157I1-20120919	Groundwater
SA-PZ161I-20120919	Groundwater
SA-PZ163I-20120919	Groundwater
SA-PZDUP03-20120919	Groundwater (Field duplicate of SA-PZ161I-20120919)
TB05-20120919	Trip blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (COC)/sample integrity
✓ Holding times and sample preservation
✓ Instrument tuning
✗ Initial calibration/continuing calibration verification
✓ Laboratory blanks/trip blanks/equipment blanks
✗ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
✓ Field duplicates
✓ Internal standards
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the BFB tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

CCV Linearity Nonconfomances:

Criteria	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

Qualified sample results are shown in Table 1.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

Surrogate Spike Recoveries

Nonconformances are summarized in Attachment A in Table A-2. Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-3. Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	**Action**	
	Detected Compounds	**Nondetected Compounds**
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:
1. Based on NFG 2008 VOC guidance, AECOM professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, AECOM professional judgment is used to estimate (UJ) rather the reject sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of ≤50% for solid matrices and ≤30% for aqueous matrices. This criteria applies if both results were greater than five times the limit of quantitation (LOQ).

All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

All compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
EB02-20120920	WH	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-PZ451S-20120920	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
FT-PZ454S-20120920	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MW126D-20120919	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MW126I-20120919	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-MW126S-20120919	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-PZ138I1-20120920	WG	1,1,1-Trichloroethane	43.	0.50	µg/L	J	s
SA-PZ138I1-20120920	WG	1,1-Dichloroethene	14.	0.50	µg/L	J	s
SA-PZ138I1-20120920	WG	1,2,4-Trichlorobenzene	0.49	0.50	µg/L	J	s
SA-PZ138I1-20120920	WG	1,2-Dichlorobenzene	0.64	0.50	µg/L	J	s
SA-PZ138I1-20120920	WG	1,4-Dichlorobenzene	0.89	0.50	µg/L	J	s
SA-PZ138I1-20120920	WG	Chloroethane	54.	1.0	µg/L	J	c,s
SA-PZ138I1-20120920	WG	Isopropylbenzene	0.61	0.50	µg/L	J	s
SA-PZ157I-20120919	WG	Chloroethane	2.2	1.0	µg/L	J	c
SA-PZ157I1-20120919	WG	1,1,1-Trichloroethane	130	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,1-Dichloroethene	40.	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,2,4-Trichlorobenzene	4.4	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,2-Dichlorobenzene	4.6	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,2-Dichloroethane	0.55	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,2-Dichloroethene, total	0.47	1.0	µg/L	J	s
SA-PZ157I1-20120919	WG	1,3-Dichlorobenzene	4.1	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	1,4-Dichlorobenzene	16.	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	Benzene	1.0	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	Chlorobenzene	1.9	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	cis-1,2-Dichloroethene	0.47	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	Cyclohexane	1.2	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	Isopropylbenzene	1.8	0.50	µg/L	J	s
SA-PZ157I1-20120919	WG	Trichloroethene	0.34	0.50	µg/L	J	s

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-PZ161I-20120919	WG	Acetone	2.2	2.5	µg/L	J	l
SA-PZ161I-20120919	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
SA-PZ163I-20120919	WG	Chloroethane	1.0	1.0	µg/L	UJ	c
TB05-20120919	WQ	Chloroethane	1.0	1.0	µg/L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Continuing Calibrations

Calibration	Compound	%D or %Drift
WG114214	Chloroethane	24.7
Associated samples: EB02-20120920, FT-PZ451S-20120920, FT-PZ454S-20120920, SA-MW126D-20120919, SA-MW126I-20120919, SA-MW126S-20120919, SA-PZ138I1-20120920, SA-PZ157I-20120919, SA-PZ161I-20120919, SA-PZ163I-20120919, and TB05-20120919		

Table A-2 – Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
SA-PZ138I1-20120920	1,2-Dichloroethane-d4	123.	70	120
SA-PZ138I1-20120920	Dibromofluoromethane	118.	85	115
SA-PZ157I1-20120919	Dibromofluoromethane	119.	85	115
FT-PZ454S-20120920	Dibromofluoromethane	116.	85	115

Table A-3 - Lab Control Sample

LCS ID	Compound	LCS % Recovery	LCSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit	Associated Samples
WG114214-1	Acetone	154		40	140			PREP: WG114214
WG114257-1	Chloromethane	128		40	125			PREP: WG114257
WG114257-1	Dichlorodifluoromethane	163		30	155			PREP: WG114257

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Level of quantitation raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
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Data Validation Report

Project:	Basewide Investigation Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, NY
Laboratory:	Katahdin Analytical Services/Scarborough, ME
Service Request:	SF6515
Analyses/Method:	Volatile organic compounds/8260B Total organic carbon/Walkley-Black
Validation Level:	Limited
AECOM Project Number:	60264489.300
Prepared by:	Waverly Braunstein/AECOM — Completed on: November 1, 2012
Reviewed by:	NA/AECOM — File Name: SF6515 VOC_TOC_wb.docx

SUMMARY

The samples listed below were collected by Resolution Consultants from the NWIRP site in Calverton, NY on September 21, 2012.

Sample ID	Matrix/Sample Type
SA-SD124-20120921	Sediment
SA-SD125-20120921	Sediment
SA-SD201-20120921	Sediment
SA-SD204-20120921	Sediment
SA-SDDUP05-20120921	Sediment
TB07-20120921	Trip Blank (Solid)
EB03-20120921	Equipment blank
SA-PZ124-20120921	Groundwater
SA-PZ125-20120921	Groundwater
SA-PZ147-20120921	Groundwater
SA-PZ148-20120921	Groundwater
SA-PZDUP05-20120921	Groundwater
SA-SW124-20120921	Surface water
SA-SW125-20120921	Surface water
SA-SW201-20120921	Surface water
SA-SW204-20120921	Surface water
SA-SWDUP05-20120921	Surface water
TB06-20120921	Trip Blank (Aqueous)

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and the Sampling and Analysis Plan, Basewide Investigation, Naval Weapons Industrial Reserve Plant (NWIRP); Calverton, NY, Resolution Consultants, Revision 0, August 15, 2012.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (COC)/sample integrity
✗ Holding times and sample preservation
✓ Instrument tuning
✗ Initial calibration/continuing calibration verification
✗ Laboratory blanks/trip blanks/equipment blanks
✗ Surrogate spike recoveries
✗ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
✓ Field duplicates
✓ Internal standards
✗ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

<u>Data Completeness</u>

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

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Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

Sample preservation and preparation/analysis holding times were reviewed for conformance to the QAPP. The sediment samples were collected in the field using Terra Core samplers and placed in vials containing methanol. When these samples were received at the laboratory, the sample labels were illegible, so the laboratory could not verify the initial weight of the sample containers. Therefore the volatile organics samples were taken from the percent solids jar. The method specifies that bulk samples should be frozen within 48 hours of sampling. The samples were received at the laboratory within 48 hours, but since they were received on a Saturday, they were not processed until the following Monday. Therefore, all detected and non-detected results reported from the sediment samples were qualified as estimated (J/UJ).

Qualified sample results are shown in Table 1.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the BFB tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

CCV Linearity Nonconfomances:

Criteria	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

Qualified sample results are shown in Table 1.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Nonconformances are summarized in Attachment A in Tables A-2 and A-3. Sample results were qualified as follows:

For common lab contaminants (methylene chloride, acetone, 2-butanone):

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and ≤ 4x the LOQ	Report the sample result with a U**
		≥ 4x the LOQ	No qualifications
	> 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and < blank contamination	Report the sample result with a U
		≥ 2x LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on AECOM professional judgment			

For all other compounds:

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and ≤ 2x the LOQ	Report the sample result with a U**
		≥ 2x the LOQ	No qualifications
	> LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and < blank contamination	Report the sample result with a U or reject the sample result as unusable R
		≥ LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
	TIC detected	Detects	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on AECOM professional judgment			

LOQ (Level of quantitation) is equivalent to the lowest calibration standard.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

Nonconformances are summarized in Attachment A in Table A-4. Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-5. Data qualification to the analytes associated with the specific MS/MSD nonconformances was as follows:

Criteria	Action	
	Detected Compounds	**Nondetected Compounds**
%R> UL	J	No qualification
20% ≤ %R < LL	J	UJ
%R <20% (see note 1)	J	R*
%RPD > UL (see note 2)	J	No qualification
Note: Actions are applied to the native unspiked sample only (see note 3) *When the native sample concentration is >4X the concentration of the spike added (based on Region I criteria), evaluate the MS, MSD, and native sample with regards to %RSD rather than %R (AECOM professional judgment)		

Notes:

1. Based on NFG 2008 VOC guidance, AECOM professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, AECOM professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.
2. In the absence of Region 2 guidance, RPD actions are based on AECOM professional judgment.
3. If a field duplicate sample was also collected for the native sample chosen for MS/MSD analysis, professional judgment is used to apply MS/MSD actions to the corresponding field duplicate sample as well as the native sample.

Qualified sample results are shown in Table 1.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of ≤50% for solid matrices and ≤30% for aqueous matrices. This criteria applies if both results were greater than five times the limit of quantitation (LOQ).

All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

Sample Results/Reporting Issues

All compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific LOQs were adjusted accordingly by the laboratory.

The percent solids data were reviewed to ensure that NFG 2008 specified criteria were met.

Nonconformances are summarized in Attachment A in Table A-6. Data qualification on the basis of percent solids was as follows:

Actions:

Criteria	Action	
	Detected Results	**Nondetect Results**
% Solids ≥ 30%	No qualification	No qualification
10% ≤% Solids <30%	J	UJ
% Solids < 10%	J	R

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
EB03-20120921	WH	Bromomethane	1.0	1.0	µG/L	UJ	c
EB03-20120921	WH	Chloromethane	1.0	1.0	µg/L	UJ	c
SA-PZ124-20120921	WG	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-PZ124-20120921	WG	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-PZ125-20120921	WG	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-PZ125-20120921	WG	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-PZ147-20120921	WG	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-PZ147-20120921	WG	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-PZ148-20120921	WG	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-PZ148-20120921	WG	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-PZDUP05-20120921	WG	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-PZDUP05-20120921	WG	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-SW124-20120921	WS	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-SW124-20120921	WS	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-SW125-20120921	WS	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-SW125-20120921	WS	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-SW201-20120921	WS	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-SW201-20120921	WS	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-SW204-20120921	WS	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-SW204-20120921	WS	Chloromethane	1.0	1.0	µG/L	UJ	c
SA-SWDUP05-20120921	WS	Bromomethane	1.0	1.0	µG/L	UJ	c
SA-SWDUP05-20120921	WS	Chloromethane	1.0	1.0	µG/L	UJ	c
TB06-20120921	WQ	Bromomethane	1.0	1.0	µG/L	UJ	c
TB06-20120921	WQ	Chloromethane	0.39	1.0	µG/L	J	c
SA-SD124-20120921	SE	Carbon	0.16	0.020	PCT	J	x
SA-SD124-20120921	SE	1,1,1-trichloroethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,1,2,2-tetrachloroethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,1,2-trichloro-1,2,2-trichfluoroethane	3.2	3.2	µG/Kg	UJ	c,h,t
SA-SD124-20120921	SE	1,1,2-trichloroethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,1-dichloroethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,1-dichloroethene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2,4-trichlorobenzene	3.2	3.2	µG/Kg	UJ	bl,h,t
SA-SD124-20120921	SE	1,2-dibromo-3-chloropropane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2-dibromoethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2-dichlorobenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2-dichloroethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2-dichloroethene, total	6.5	6.5	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,2-dichloropropane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,3-dichlorobenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	1,4-dichlorobenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	2-butanone	16.	16.	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	2-hexanone	16.	16.	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	4-methyl-2-pentanone	16.	16.	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Acetone	11.	16.	µG/Kg	J	h,t
SA-SD124-20120921	SE	Benzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Bromodichloromethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Bromoform	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Bromomethane	6.5	6.5	µG/Kg	UJ	c,h,t
SA-SD124-20120921	SE	Carbon disulfide	3.2	3.2	µG/Kg	UJ	h,t

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-SD124-20120921	SE	Carbon tetrachloride	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Chlorobenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Chloroethane	6.5	6.5	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Chloroform	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Chloromethane	6.5	6.5	µG/Kg	UJ	c,h,t
SA-SD124-20120921	SE	Cis-1,2-dichloroethene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Cis-1,3-dichloropropene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Cyclohexane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Dibromochloromethane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Dichlorodifluoromethane	6.5	6.5	µG/Kg	UJ	c,h,t
SA-SD124-20120921	SE	Ethylbenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Isopropylbenzene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	M- and p-xylene	6.5	6.5	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Methyl acetate	3.9	3.9	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Methyl cyclohexane	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Methyl tert-butyl ether	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Methylene chloride	16.	16.	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	O-xylene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Styrene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Tetrachloroethene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Toluene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Trans-1,2-dichloroethene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Trans-1,3-dichloropropene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Trichloroethene	3.2	3.2	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Trichlorofluoromethane	6.5	6.5	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Vinyl chloride	6.5	6.5	µG/Kg	UJ	h,t
SA-SD124-20120921	SE	Xylenes, total	9.8	9.8	µG/Kg	UJ	h,t
SA-SD125-20120921	SE	1,1,1-trichloroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,1,2,2-tetrachloroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,1,2-trichloro-1,2,2-trichfluoroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,1,2-trichloroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,1-dichloroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,1-dichloroethene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2,4-trichlorobenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dibromo-3-chloropropane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dibromoethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dichlorobenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dichloroethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dichloroethene, total		55.	µG/Kg	R	x
SA-SD125-20120921	SE	1,2-dichloropropane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,3-dichlorobenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	1,4-dichlorobenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	2-butanone		140	µG/Kg	R	x
SA-SD125-20120921	SE	2-hexanone		140	µG/Kg	R	x
SA-SD125-20120921	SE	4-methyl-2-pentanone		140	µG/Kg	R	x
SA-SD125-20120921	SE	Acetone	160	140	µG/Kg	J	h,s,t
SA-SD125-20120921	SE	Benzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Bromodichloromethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Bromoform		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Bromomethane		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Carbon disulfide		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Carbon tetrachloride		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Chlorobenzene		28.	µG/Kg	R	x

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-SD125-20120921	SE	Chloroethane		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Chloroform		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Chloromethane		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Cis-1,2-dichloroethene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Cis-1,3-dichloropropene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Cyclohexane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Dibromochloromethane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Dichlorodifluoromethane		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Ethylbenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Isopropylbenzene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	M- and p-xylene		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Methyl acetate		33.	µG/Kg	R	x
SA-SD125-20120921	SE	Methyl cyclohexane		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Methyl tert-butyl ether		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Methylene chloride		140	µG/Kg	R	x
SA-SD125-20120921	SE	O-xylene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Styrene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Tetrachloroethene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Toluene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Trans-1,2-dichloroethene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Trans-1,3-dichloropropene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Trichloroethene		28.	µG/Kg	R	x
SA-SD125-20120921	SE	Trichlorofluoromethane		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Vinyl chloride		55.	µG/Kg	R	x
SA-SD125-20120921	SE	Xylenes, total		82.	µG/Kg	R	x
SA-SD201-20120921	SE	1,1,1-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,1,2,2-tetrachloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,1,2-trichloro-1,2,2-trichfluoroethane	3.0	3.0	µG/Kg	UJ	c,h,t
SA-SD201-20120921	SE	1,1,2-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,1-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,1-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2,4-trichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dibromo-3-chloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dibromoethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dichloroethene, total	6.0	6.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,2-dichloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,3-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	1,4-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	2-butanone	15.	15.	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	2-hexanone	15.	15.	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	4-methyl-2-pentanone	15.	15.	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Acetone	15.	15.	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Benzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Bromodichloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Bromoform	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Bromomethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD201-20120921	SE	Carbon disulfide	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Carbon tetrachloride	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Chlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Chloroethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Chloroform	3.0	3.0	µG/Kg	UJ	h,t

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-SD201-20120921	SE	Chloromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD201-20120921	SE	Cis-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Cis-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Cyclohexane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Dibromochloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Dichlorodifluoromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD201-20120921	SE	Ethylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Isopropylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	M- and p-xylene	6.0	6.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Methyl acetate	3.6	3.6	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Methyl cyclohexane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Methyl tert-butyl ether	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Methylene chloride	15.	15.	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	O-xylene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Styrene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Tetrachloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Toluene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Trans-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Trans-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Trichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Trichlorofluoromethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Vinyl chloride	6.0	6.0	µG/Kg	UJ	h,t
SA-SD201-20120921	SE	Xylenes, total	9.0	9.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1,1-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1,2,2-tetrachloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1,2-trichloro-1,2,2-trichfluoroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1,2-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,1-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2,4-trichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dibromo-3-chloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dibromoethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dichloroethene, total	6.0	6.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,2-dichloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,3-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	1,4-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	2-butanone	15.	15.	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	2-hexanone	15.	15.	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	4-methyl-2-pentanone	15.	15.	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Acetone	25.	15.	µG/Kg	J	h,t
SA-SD204-20120921	SE	Benzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Bromodichloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Bromoform	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Bromomethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD204-20120921	SE	Carbon disulfide	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Carbon tetrachloride	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Chlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Chloroethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Chloroform	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Chloromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD204-20120921	SE	Cis-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-SD204-20120921	SE	Cis-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Cyclohexane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Dibromochloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Dichlorodifluoromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SD204-20120921	SE	Ethylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Isopropylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	M- and p-xylene	6.0	6.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Methyl acetate	3.6	3.6	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Methyl cyclohexane	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Methyl tert-butyl ether	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Methylene chloride	15.	15.	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	O-xylene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Styrene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Tetrachloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Toluene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Trans-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Trans-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Trichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Trichlorofluoromethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Vinyl chloride	6.0	6.0	µG/Kg	UJ	h,t
SA-SD204-20120921	SE	Xylenes, total	9.0	9.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,1,1-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,1,2,2-tetrachloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,1,2-trichloro-1,2,2-trichfluoroethane	3.0	3.0	µG/Kg	UJ	c,h,t
SA-SDDUP05-20120921	SE	1,1,2-trichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,1-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,1-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2,4-trichlorobenzene	3	3.0	µG/Kg	UJ	bl,h,t
SA-SDDUP05-20120921	SE	1,2-dibromo-3-chloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2-dibromoethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2-dichloroethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2-dichloroethene, total	6.0	6.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,2-dichloropropane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,3-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	1,4-dichlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	2-butanone	15.	15.	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	2-hexanone	15.	15.	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	4-methyl-2-pentanone	15.	15.	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Acetone	11.	15.	µG/Kg	J	h,t
SA-SDDUP05-20120921	SE	Benzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Bromodichloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Bromoform	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Bromomethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SDDUP05-20120921	SE	Carbon disulfide	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Carbon tetrachloride	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Chlorobenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Chloroethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Chloroform	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Chloromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SDDUP05-20120921	SE	Cis-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Cis-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Cyclohexane	3.0	3.0	µG/Kg	UJ	h,t

Sample ID	Matrix	Compound	Result	QL	Units	Validation Qualifier	Validation Reason
SA-SDDUP05-20120921	SE	Dibromochloromethane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Dichlorodifluoromethane	6.0	6.0	µG/Kg	UJ	c,h,t
SA-SDDUP05-20120921	SE	Ethylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Isopropylbenzene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	M- and p-xylene	6.0	6.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Methyl acetate	3.6	3.6	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Methyl cyclohexane	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Methyl tert-butyl ether	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Methylene chloride	15.	15.	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	O-xylene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Styrene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Tetrachloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Toluene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Trans-1,2-dichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Trans-1,3-dichloropropene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Trichloroethene	3.0	3.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Trichlorofluoromethane	6.0	6.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Vinyl chloride	6.0	6.0	µG/Kg	UJ	h,t
SA-SDDUP05-20120921	SE	Xylenes, total	9.0	9.0	µG/Kg	UJ	h,t
TB07-20120921	SQ	Acetone	25	12.	µG/Kg	U	bl

Attachment A

Non Conformance Summary Tables

Table A-1 - Continuing Calibrations

Calibration	Compound	%D or %Drift
WG114127	Chloroethane	20.6
	Bromomethane	33.7
Associated samples: EB03-20120921, SA-PZ124-20120921, SA-PZ125-20120921, SA-PZ147-20120921, SA-PZ148-20120921, SA-PZDUP05-20120921, SA-SW124-20120921, SA-SW125-20120921, SA-SW201-20120921, SA-SW204-20120921, SA-SWDUP05-20120921, and TB06-20120921		
WG114083	Dichlorodifluoromethane	20.3
	Chloroethane	30.8
	Bromomethane	39
	Freon 113	20.3
Associated samples: SA-SD124-20120921, SA-SD201-20120921, and SA-SDDUP05-20120921		
WG114220	Dichlorodifluoromethane	26.4
	Chloroethane	28.4
	Bromomethane	24.7
Associated sample: SA-SD204-20120921		

Table A-2 - Field Blank

Blank ID	Compound	Result	QL	Units	Action Level	Associated Samples
TB06-20120921	Acetone	3.2	2.5	µg/L	3.2	EB03-20120921, SA-PZ124-20120921, SA-PZ125-20120921, SA-PZ147-20120921, SA-PZ148-20120921, SA-PZDUP05-20120921, SA-SW124-20120921, SA-SW125-20120921, SA-SW201-20120921, SA-SW204-20120921, SA-SWDUP05-20120921
TB06-20120921	Chloromethane	0.39	1.0	µg/L	0.39	
TB07-20120921	Acetone	12.	12.	µg/Kg	12	All sediment samples
EB03-20120921	TOC	0.29	0.50	mg/L	0.29	All sediment samples

Table A-3 - Lab Blank

Blank ID	Compound	Result	QL	Units	Action Level	Associated Samples
WG114083-2	1,2,4-Trichlorobenzene	0.90	2.5	µg/Kg	0.9	SA-SD124-20120921 SA-SDDUP05-20120921

Blank ID	Compound	Result	QL	Units	Action Level	Associated Samples
WG114144-2	Acetone	5.1	12.	µg/Kg	5.1	TB07-20120921

Table A-4 – Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
SA-SD125-20120921	Dibromofluoromethane	53.4	64	130
SA-SD125-20120921	Toluene-d8	61.8	85	115
SA-SD125-20120921	4-Bromofluorobenzene	42.2	85	120
SA-SDDUP05-20120921	4-Bromofluorobenzene	76.2	85	120

Table A-5 - Matrix Spike

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
SA-SD125-20120921	Ethylbenzene	59.2	42.6	75	125	22	20
SA-SD125-20120921	Styrene	6.94	7.18	75	125	14	20
SA-SD125-20120921	cis-1,3-Dichloropropene	38.8	30.2	70	125	14	20
SA-SD125-20120921	trans-1,3-Dichloropropene	40	32.1	65	125	11	20
SA-SD125-20120921	1,4-Dichlorobenzene	40.6	30.5	70	125	17	20
SA-SD125-20120921	1,2-Dibromoethane	55.7	50.2	70	125	1	20
SA-SD125-20120921	m- and p-Xylene	60.2	44.4	80	125	21	20
SA-SD125-20120921	Methyl cyclohexane	51.2	49.5	71	127	8	20
SA-SD125-20120921	Toluene	67.8	53.7	70	125	12	20
SA-SD125-20120921	Chlorobenzene	58.6	44.4	75	125	17	20
SA-SD125-20120921	Cyclohexane	79.4	68.6	75	128	4	20
SA-SD125-20120921	1,2,4-Trichlorobenzene	20.4	14.9	65	130	20	20
SA-SD125-20120921	Dibromochloromethane	29.6	21.4	80	120	21	20
SA-SD125-20120921	Tetrachloroethene	70.6	50	65	140	23	20
SA-SD125-20120921	Xylenes, total	58.7	42.2	81	114	20	20
SA-SD125-20120921	Methyl tert-butyl ether	84.2	78.7	81	125	3	20
SA-SD125-20120921	1,2-Dichloroethene, total	76.2	68.7	82	120	1	20
SA-SD125-20120921	1,3-Dichlorobenzene	42.2	32.6	70	125	14	20
SA-SD125-20120921	Carbon tetrachloride	67.8	55.1	65	135	10	20
SA-SD125-20120921	2-Hexanone	37.6	37.9	45	145	12	20
SA-SD125-20120921	Benzene	78.4	69.6	75	125	1	20

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
SA-SD125-20120921	Chloromethane	42	43.5	50	130	15	20
SA-SD125-20120921	Carbon disulfide	20.8	18.4	45	160	1	20
SA-SD125-20120921	Bromoform	19.5	13.6	55	135	25	20
SA-SD125-20120921	Bromodichloromethane	41.4	31.9	70	130	15	20
SA-SD125-20120921	1,2-Dichloropropane	73.9	66.1	70	120	0	20
SA-SD125-20120921	1,1,2-Trichloroethane	63.5	58.6	60	125	3	20
SA-SD125-20120921	Trichloroethene	85.5	67.2	75	125	13	20
SA-SD125-20120921	Methyl acetate	17.2	16.2	72	133	6	20
SA-SD125-20120921	1,1,2,2-Tetrachloroethane	61.6	51.2	55	130	7	20
SA-SD125-20120921	o-Xylene	54.7	40.4	75	125	19	20
SA-SD125-20120921	1,2-Dichlorobenzene	37.6	29.6	75	120	13	20
SA-SD125-20120921	1,2-Dibromo-3-chloropropane	40.8	34.2	40	135	6	20
SA-SD125-20120921	Isopropylbenzene	73.9	48.6	75	130	30	20
SA-SW125-20120921	Methyl cyclohexane	126	127	73	125	1	30
SA-SW125-20120921	1,1,2-Trichloro-1,2,2-trichfluoroethane	127	129	73	126	2	30

Table A-6 - Percent Solids

Sample ID	Percent Solids (%)	Status
SA-SD124-20120921	78.3	ok @30%
SA-SD125-20120921	8.9	<30%
SA-SD201-20120921	82.2	ok @30%
SA-SD204-20120921	81.1	ok @30%
SA-SDDUP05-20120921	77.2	ok @30%
TB07-20120921	100	ok @30%

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Level of quantitation raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results