Second Quarter 2013 Groundwater Monitoring Report
April - June 2013
Claremont Polychemical Corporation Site
505 Winding Road
Old Bethpage, Nassau County, NY 11804
Site Code: 130015
WA# D006130-19

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by:

HRP Engineering, P.C.
1 Fairchild Square Suite 110
Clifton Park, New York 12065
518.877.7101

Tom Sicilia
Project Geologist

Jennifer Koch
Senior Project Geologist

Nancy Garry, P.E.
Project Manager

Submitted: July 19, 2013

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April - June 2013
Claremont Polychemical Corporation Site
Old Bethpage, New York 11804
Site Code: 130015
WA# D006130-19

Report Submittal Date: July 19, 2013
Prepared by: Nancy Garry, Jennifer Kotch, Tom Sicilia
HRP Engineering, Inc
1 Fairchild Square, Suite 110
Clifton Park, New York 12065
Phone: (518) 877-7101 / Fax: (518) 877-8561

Project Address: Claremont Polychemical Corporation Site, 505 Winding Rd, Old Bethpage, New York

CERTIFICATION

I, Nancy Garry, PE, certify that I am currently a Qualified Environmental Professional as defined in 6 Part NYCRR Part 375 and that this report, 2013 Second Quarter Groundwater Monitoring Report, was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER -10).

Environmental Contractor: HRP Engineering, P.C.

By:

Nancy Garry, PE

Second Quarter 2013 Groundwater Monitoring Report
April-June 2013
Claremont Polychemical Corporation Site
Old Bethpage, New York 11804

1.0 INTRODUCTION

HRP Engineering, P.C. (HRP) is pleased to submit this report containing groundwater quality data, discussions and data deliverables related to the Second Quarter 2013 (April – June 2013) groundwater monitoring event conducted at the Claremont Polychemical Corporation Site (hereinafter referred to as the "Site") (Figure 1). The groundwater monitoring event and the preparation of this deliverable are part of the routine groundwater monitoring program being conducted at the Site. This report has been prepared for submittal to the New York State Department of Environmental Conservation (NYSDEC) and includes the following:

- Brief overview of historical Site activities;
- Discussion of the on-site groundwater treatment system;
- Brief description of the scope of the field activities;
- Groundwater elevation contours;
- Tetrachloroethylene (PCE) and trichloroethylene (TCE) contaminant concentration profiles in groundwater;
- Maximum groundwater PCE and TCE contaminant concentrations discussion;
- Brief discussion of the groundwater quality data;
- Comparison of data from this monitoring period to data from previous periods; and
- Recommendations and Conclusions.

2.0 SITE BACKGROUND

2.1 Site Overview

The Claremont Polychemical Corporation (Claremont), a former manufacturer of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers, operated on-site from 1966 to 1980. The Site was proposed for inclusion on the Environmental Protection Agency (EPA) National Priorities List (NPL) in October 1984 and was listed as a superfund site in June 1986. A Comprehensive Remedial Investigation/ Feasibility Study (RI/FS) for the Site was initiated in March 1988 by the EPA. Under this RI/FS, the EPA sampled the surface and subsurface soil, the groundwater, underground storage tanks, and collected samples associated with the building. The EPA RI/FS reports were released to the public in August 1990. The EPA RI/FS findings indicated that on-site soils contaminated with PCE, located in the former "spill area", constituted a potential threat to groundwater resources. A comprehensive remedy for the Site was completed and documented in several EPA Records of Decisions (RODs) issued in 1989-1990. The Site was divided into six operable units (OU), each with a specific remedial activities. Operable Unit No.4 (OU IV) is designated “Remedial Program” and involves the treatment of the on-site volatile organic compounds (VOC) that have contaminated the groundwater treatment system.

A groundwater treatment system was installed on-site by the EPA and Army Corp of Engineers (ACOE) to control Operable Unit No.4 (OU IV). Full-scale operation of the groundwater remedial system began in February 2000, reportedly pumping and treating 470 gpd (gallons per day). SAIC Inc. operated and maintained the treatment system from 2000 to May 2011. During that period SAIC monitored the treatment system operation on a regular basis by collecting system discharge and quarterly groundwater samples. In May 2011, the operation, maintenance, and sampling of the remediation system was relinquished from the ACOE/EPA to the NYSDEC, who subsequently retained HRP to operate, maintain and sample the remediation system.

During the work responsibility transition from the EPA to the NYSDEC, the NYSDEC requested copies of reports and analytical results generated during the EPA’s operations of the remediation system, including but not limited to quarterly groundwater sampling data from SAIC, EPA Region 2 and the ACOE. Previous groundwater monitoring reports were not available for HRP’s review. Therefore, the historical groundwater data was not reviewed by HRP and incorporated into this report.

2.2 Location

The Site is located on a 9.5-acre parcel located in an industrial section of Old Bethpage, Nassau County, New York (see Figure 1 for location). The property formerly had a two-story building, covering approximately 35,000 square feet (the former processing plant) which was removed in 2012 and the current water treatment building, covering approximately 5,200 square feet. The Site lies approximately 800 feet east of the border between Nassau and Suffolk County and the Site is accessed via Winding Road on the property's western border. Adjacent properties include:

South and Southeast - Bethpage State Park and a golf course;
East - State University of New York-Farmingdale Campus;
West - Oyster Bay Solid Waste Disposal Complex; and
North - Commercial and light industrial.

The Oyster Bay Solid Waste Disposal Complex is a NYSDEC Superfund Site with the Town of Oyster Bay as the responsible party. The Nassau County Fireman's Training Center, which has also contributed to soil and groundwater contamination in the area, is located approximately 500 feet south of the Oyster Bay Solid Waste Disposal Complex. The Oyster Bay Solid Waste Disposal Complex and Fireman's Training Center have groundwater extraction and treatment systems in operation. In addition, the Bethpage State Park golf course has a number of pump/irrigation wells, which are used for watering their fairways. The closest residences are approximately one-half mile from the Site immediately west of the Old Bethpage Landfill Superfund site. The nearest public supply well is located 3,500 feet northwest of the Site and nearly 47,000 people are drawing water from private-use wells located within three miles of the site.

2.3 Site History

According to the "Five - Year Review Report for Claremont Polychemical Corporation" prepared by EPA Region 2, dated September 2008, the Claremont Polychemical Corporation manufactured pigments for plastics and inks, coated metal flakes, and vinyl stabilizers operated from 1966 to 1980. During its operation, Claremont disposed of liquid waste in three leaching basins and deposited solid wastes and treatment sludges in drums or in old, aboveground metal tanks. The principal wastes generated were organic solvents, resins and wash wastes (mineral spirits). Located inside the process building were a solvent recovery system (steam distillation), two pigment dust collectors and a sump. To the west of the building, there were five concrete treatment basins, each with a capacity of 5,000 gallons, which contained sediments and water. Six aboveground tanks, three of which contained wastes, were located east of the process building. Other features included an underground tank farm, construction and demolition debris, dry wells and a water supply well.

2.4 Site Geological Setting

The "Claremont Polychemical Superfund Site Long-term Groundwater Monitoring Old Bethpage, New York" report prepared by SAIC and dated December 2001 reported that site-specific subsurface investigations from a variety of soil borings and monitoring/injection/extraction well installations to a maximum depth of 250 feet below ground surface (bgs) identified "well-stratified fine to medium sand with silt lenses, abundant peat laminae, and discontinuous sand layers" (Ebasco, 1990). Borings in the northern portion of the Site also encountered numerous interbedded silt and clay horizons. A comparison of Site logs with municipal supply well logs to the north suggest that the Site is located within a transitional area between the predominately sandy southern portion of the Magothy Formation and an interbedded clayey-sand portion to the north (Ebasco, 1990).

Further the report indicated that historically groundwater flow is generally to the south-southeast with historical gradients ranging from 0.001-0.002 ft/ft (feet) and horizontal flow velocities of 0.43 ft/day or 157 ft/yr (Ebasco, 1990). Groundwater elevations are depressed in the areas of the extraction wells while the system is in operation. Hydraulic permeability (slug) tests performed during the EPA RI calculated hydraulic conductivities ranging between 200 and 400 gdp/ft^2 which is significantly lower than historical data from actual pump tests. The vertical component of flow was historically less than 0.5 ft/ft and lacked any consistency or pattern. It was thus determined to be insignificant with respect to contaminant movement (Ebasco, 1990).

The report also indicated that the direction of groundwater flow from the western portion of the Site is to the east, south and southeast and reverses on the eastern and southeastern portions of the Site. The gradient was reported to be approximately 0.024 ft/ft as measured between monitoring wells SW-1 and SW-2 over a distance of approximately 500 ft. The semi-radial component of flow and steep gradient are indicative of the groundwater extraction system's capture zone. However, groundwater levels were recorded from five sets of clustered monitoring wells, or 13 data points, in and around the source area. Hence, the report concluded that the capture zone is not realistically defined as it tends to center around monitoring well cluster SW-2/DW-2 instead of the three extraction wells slightly to the southeast.

3.0 GROUNDWATER TREATMENT SYSTEM

A description of the groundwater treatment system and a review of its effectiveness of contamination recovery and hydraulic control are provided below.

3.1 Groundwater Treatment System Description

The groundwater treatment system, which is designed to treat metals, organic contaminants, and provide final pH adjustment consists of an extraction system, above-ground treatment, and a reinjection system. Each of the system components is discussed below.

Groundwater Treatment System Extraction Wells

The groundwater collection system consists of three extraction wells (EXT-1, EXT-2, and EXT-3) installed approximately 150 feet apart south of the Site oriented in a southwest-northeast line. The wells are screened from approximately 60 feet mean sea level (MSL) (just below the water table) to approximately 30 feet MSL and are outfitted with 10 horsepower pumps. Each extraction well pump is capable of pumping up to 200 gpm. However, historically, EXT-1, EXT-2, and EXT-3 extract 190 gpm, 188 gpm, and 175 gpm for a total of approximately 553 gpm, respectively. The average flow rate over the course of a month is approximately 350 to 390 gpm. This average pumping rate translates to approximately 500,000 to 560,000 per day which meets the on-site remedy goal of treating 500,000 gallons per day.

It is important to note that in April/May 2011, SAIC replaced the Equalization tank level controllers, which formerly controlled the extraction well pumps, with level transducers located in the extraction wells. The level transducers allow the extraction pumps to maintain a static water level in the extraction wells and a more consistent capture zone. Each well pump is controlled by a well transducer that maintains a groundwater elevation of 38.3 to 46.7 feet MSL.

Based on discussions with the NYSDEC and HRP regarding the 2012 Remedial System Optimization (2012 RSO), the pumping of the extraction wells were temporarily suspended on December 5, 2012 to allow for groundwater sampling and analysis to evaluate contaminant profiles across the screened intervals. Based on this evaluation, extraction wells EXT-1 and EXT-2 were retrofitted with packers to focus groundwater removal to shallow groundwater from the Site with the remaining contamination. Therefore, the screen level for EXT-1 and EXT-2 were adjusted as described in Section 5. Following completion of the retrofit, pumps were reinstalled and the treatment system was re-activated on May 15, 2013. A Pumping step-test was conducted on each well to ensure that capture is being achieved. The results of this test are being evaluated and will be included in the August 2013 Quarterly Report.

Groundwater Treatment System Path of Remediation

Groundwater pumped from the extraction wells enters an approximate 60,000-gallon equalization tank situated adjacent to the treatment building. Water from the equalization tank flows through two parallel metals-removal trains that are each rated for 250 gpm. Each train includes a reaction tank, a flocculation tank, a clarifier, and a filter and is followed by air-stripper feed tanks. The feed tanks divert the water through a single packed tower air stripper rated at an average rate of 500 gpm and then through parallel liquid phase carbon units each rated at 250 gpm. The air emission from the air stripper is treated with vapor phase carbon. The treated water is then stored in two 42,000-gallon vessels prior to reinjection to the subsurface via four butterfly valve injection wells and/or two infiltration galleries located on the adjacent SUNY Farmingdale campus. The extraction wells are equipped with high-level alarms and are regularly gauged. However, the infiltration galleries are not equipped with level sensors or alarms, but are periodically visually assessed.

In 2001, after the first nine months of operation, the addition of oxidizing chemicals (potassium permanganate) to the metals removal system was discontinued as the influent metals analytical concentration to the plant met EPA discharge standards for metals. Water continues to flow through the metals portion of the treatment system.

The remediation system is manned by two operators working 40- to 50-hour weeks, and an autodialer (telemetry unit) is installed to contact the operators in case of plant alarms. The operators typically respond to alarms within 30 minutes.

<u>Groundwater Treatment System Operating Permits</u>

Water Permit

The plant was issued a water discharge permit dated January 1, 1998. According to Brian Baker, NYSDEC Section Chief, Western Section, Bureau of Water Permits the permit was extended to the end of calendar year 2013. A permit renewal application was submitted this quarter to the NYSDEC project manager for submission to the Bureau of Water permits to review the application and complete a permit reauthorization. It is important to note that the NYSDEC Bureau of Water does not have regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. Therefore, Effluent Limitations and Monitoring Requirements outlined in the permit must be submitted to the NYSDEC Division of Environmental Remediation, Remedial Bureau E.

Air Permit

An air permit is not required for the remediation system operation. In particular, NYSDEC regulation 6 NYCRR Part 375-1.7 states that “no permit is required when the substantive compliance is achieved as indicated by the NYSDEC approval of the workplan”. Based on a review of the information pertaining to the remediation system, volatile organic compounds (VOCs) air emissions from the remediation system historically have been negligible.

3.2 Groundwater Treatment System Performance Evaluation

3.2.1 Flow Rate

The volume of treated water discharged by the treatment plant to the injection well field is determined daily from readings of the magnetic flow meter on the plant effluent line. Since startup, the system has treated more than 1.87 billion gallons of groundwater. During the second quarter of 2013 (April 2013 - June 2013), the treatment system resumed operation, treating 21.2 million gallons of water.

Flow to infiltration galleries IG-1 and IG-3 is restricted so that flow to IW-1 and IW-3 is maximized. The plant's effluent discharge is limited by injection pump system capacity.

3.2.2 Groundwater Treatment System Contaminant Removal

To evaluate the treatment system's contaminate removal rate, HRP reviewed available treatment system inlet (Charts 1, 1a, 1b, 1c and 2) and effluent analytical results from monthly operation and mainatence (O&M) sampling when the system is operational. A plot of historic mass removal rates and cumulative PCE and TCE mass removal is presented as Chart 5. In addition, HRP prepares and submits monthly Groundwater Treatment System O&M Activities reports which discusses monthly O&M activities, technical support, remediation system sample results and project goals meet.

3.2.3 Groundwater Treatment System Discharge Monitoring

Effluent data for select VOC compounds (PCE, TCE, and 1,1-DEC) and metals (Iron and Manganese) are analyzed to evaluate compliance with established effluent discharge limits. Charts 3 and 4 show that the past effluent concentrations remained below permissible levels. Refer to the monthly O&M and the Significant Events reports for additional information on remediation system performance and daily operations.

4.0 GROUNDWATER MONITORING PROGRAM

On June 17 and 18, 2013 HRP sampled a total of 41 on-site and off-site monitoring wells. On-site monitoring wells included DW-1, DW-2, EW-5, EW-7C, EW-7D, EW-8D, EW-9D, and SW-1. Off-site wells included BP-3A, BP-3B, BP-3C, EW-1A, EW-1B, EW-1C, EW-2A, EW-2B, EW-2C, EW-2D, EW-3A, EW-3B, EW-3C, EW-4A, EW-4B, EW-4C, EW-4D, EW-6A, EW-6C, EW-10C, EW-11D, EW-12D, EW-13D, EW-14D, LF-02, MW-6D, MW-8A, MW-8B, MW-8C, MW-10B, MW-10C, MW-10D, and WT-01. In addition, the three extraction wells were sampled by isolating each recovery well pumps production water. The monitoring well locations are depicted in Figure 2a. A description of the groundwater sampling event is provided below.

4.1 Hydrological Data

At the time of sample collection, static groundwater levels were measured at all 41 locations on June 13, 2013. Depths to groundwater in March 2013 when the PDBs were installed ranged from 41.51 ft (EW-14D) to 100.56 ft (EW-11D) below ground surface (bgs). Depths to groundwater in June 2013 when the PDB were retrieved ranged from 58.28 ft (BP-3C) to 118.32 ft (MW-8C) bgs. The inferred groundwater flow direction is to south-southeast. Overall, groundwater elevations (Table 1) and inferred groundwater flow direction based on groundwater elevation contours (Figure 2b) were generally consistent with previous data.

4.2 Groundwater Sample Collection

The second quarter 2013 monitoring event samples were collected utilizing passive diffusion bags (PDBs), inserted into the monitoring wells. PDBs were first utilized for sample collection during the May 2012 sample event. PDBs were placed at predetermined, fixed depths in the screened interval (Appendix A) on March 25 and 26, 2013 following the first quarter 2013 sampling event. On, June 17 and 18, 2013 HRP collected and sampled the PDBs. At the time of sample collection, the PDB bag is retrieved, pierced with a decontaminated item, and the water inside is collected in VOA vials with septum caps, preserved with HCl. The VOA vials are labeled and placed in a cooler with ice.

The samples were submitted to Test America Laboratory, of Edison, New Jersey, an NYSDOH ELAP approved laboratory, to be analyzed for VOCs via EPA Method 8260. A list of wells sampled and analytical results are presented in Table 2. Based on the historic analytical results of metals, groundwater sampling for metals was discontinued by the NYSDEC following the July 2011 sampling event.

4.3 Groundwater Analytical Results

To assess the status of groundwater quality at the Site and adjacent area which has monitoring wells, HRP compared collected analytical data from the June 2013 sampling event to historical conditions and to applicable NYSDEC water quality criteria. Compounds detected above criteria during the June 2013 sampling event include tetrachloroethylene, trichloroethylene, cis-1,2-dichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,2-dichloroethane, and benzene. See Table 2 for complete results. The measured VOC concentrations during this event are generally consistent with results from the March 2013 sampling event results, during which the extraction wells were also shut off for the entire PDB contact time.

However, the sampling results since the third quarter of 2012, including the second quarter 2013 sampling results, remain slightly higher in then historical analytical sample results. With the groundwater treatment system operation temporarily suspended to complete the analysis of contaminated intervals and the optimization study to limit pumping intervals, the previous unsaturated intervals around the extraction wells were allowed to return to equilibrium and became saturated. It is assumed that the contamination desorbed from the recently saturated soil into the groundwater. Comparisons to applicable criteria facilitated evaluation of compliance with water quality standards (Table 2).

4.3.1 Comparison to Historical Groundwater Quality

The attached charts (Chart 6a through Chart-6c) illustrate the historical concentration trends for PCE and/or TCE in three wells (EW-1a, EW-4c, SW-1). These wells were selected due to consistent elevated VOC analytical results and the presence of sufficient historical data. In all cases, the results indicate a general downward trend in VOC concentrations.

4.3.2 Plume Evaluation

An assessment of groundwater contamination distribution was conducted by creating contaminant isopleth charts depicting PCE and TCE concentrations versus time (Charts 6a through 6c). In addition, cross sections and plume footprint maps (Figures 3a and 3b) were generated for this sampling event. Monitoring wells not associated with the Claremont Site monitoring program, but with the Former American Louvre site and the Old Bethpage Landfill site are also represented on the map as these sites are located hydraulically upgradient from the Claremont Site.

<u>PCE Contamination (Figure 3a)</u>

PCE has historically been present above groundwater criteria in two zones of the monitored area. Cross section A-A’ east of the Site shows an on-site migrating PCE plume with maximum observed concentrations of 25 ug/l at EW-7d. A separate plume appears to originate on-site, with maximum concentrations of 140 ug/l in SW-1 (cross section C-C’). These plumes seem to be separate (Cross section B-B’). Additional exceedances were noted in MW-10D (5.4 ug/L) and in the southern portion of the study area, centered on wells BP-3b and BP-3c (150 ug/l).

TCE Contamination (Figure 3b)

TCE contamination is predominant to the east of the Site building (Cross section A-A'), and is at its highest concentration (490 ug/l) in well EW-7c, upgradient of the Site. This plume appears to be separate from an on-site generated plume (Cross section B-B'), and may extend to the southeast towards EW-14d (320 ug/l). The on-site generated plume has maximum observed concentrations of 13 ug/l in SW-1 (Cross section C-C'). As with PCE contamination, additional exceedances were noted in the southern portion of the study area, centered on well BP-3c (19 ug/l).

5.0 EXTRACTION WELL CONTAMINANT PROFILE AND MODIFICATION

On December 5, 2012, the recovery pumps were removed from the extraction wells and a series of PDBs were deployed in each extraction well at several predetermined depths described below to evaluate the contributing zones of contamination in each extraction well. Previous to this sample event, the extraction wells had not been sampled utilizing PDBs, they were sampled in a single stream through the use of the extraction system utilizing the pumps. Analysis of this data was used to optimize recovery pump placements and determine depths to install packers to limit groundwater flow from clean screened intervals in the extraction wells.

Contaminated groundwater was observed in EXT-1 and EXT-2 in the shallowest samples, and throughout both screened intervals in EXT-3. To concentrate remedial efforts, on May 31, 2013 with final packer placement on June 12, 2013, packers were installed in EXT-1 and EXT-2 at 115 fbg and 125 fbg, with the recovery pumps set at 94 fbg and at 115 fbg, respectively. The packers limited the water column to concentrate groundwater removal to the remaining impacted depths. Following installation of the packers, normal system operation resumed with a limited decrease of groundwater recovery on EXT-1. Step-Test pumping tests on each of the recovery wells were conducted on June 26 and 27, 2013 in each recovery well to determine optimal flow rates to ensure optimal contaminant capture. The pump test data is currently under evaluation, and results will be presented under separate cover.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

HRP completed a groundwater monitoring event in June 2013 at the Claremont Polychemical Corporation Site, in which groundwater samples from 41 groundwater wells and 3 recovery wells were collected. Analysis of the data has resulted in the following conclusions:

- A groundwater plume of VOCs, primarily PCE and TCE, originates from the south of the former main Site building;
- Additional co-mingled plumes (potentially former American Louvre site, Old Bethpage Landfill, Trilite Site, and/or the Fireman's Training Center) migrate into the study area, and are marked by TCE predominance. This conclusion is based on the contamination noted in the upgradient and sidegradient monitoring wells observed at the Site. The upgradient wells and southeastern wells are out of the radius of influence of the remediation system, however they are upgradient of the radios of influence;
- Some or all of the TCE plume originating northeast of the site is not being captured by the current treatment system;

- Two plumes identified southeast of the site may be related to the northernmost plume, although based on the current monitoring network, data gaps between the plumes exist;

- The VOC data collected through PDB sampling is generally consistent with historically observed concentrations in samples collected via low flow sampling protocols; and

- Data gaps reported in the 2012 RSO have been confirmed. Additional subsurface data information is needed to evaluate potential source areas in the southern and eastern portions of the site and their contributions to shallow groundwater contamination observed in EXT-2 and EXT-3.

6.2 Recommendations

Based on analysis of data collected during this and historical events, HRP has the following recommendations for the Claremont Polychemical Corporation Site:

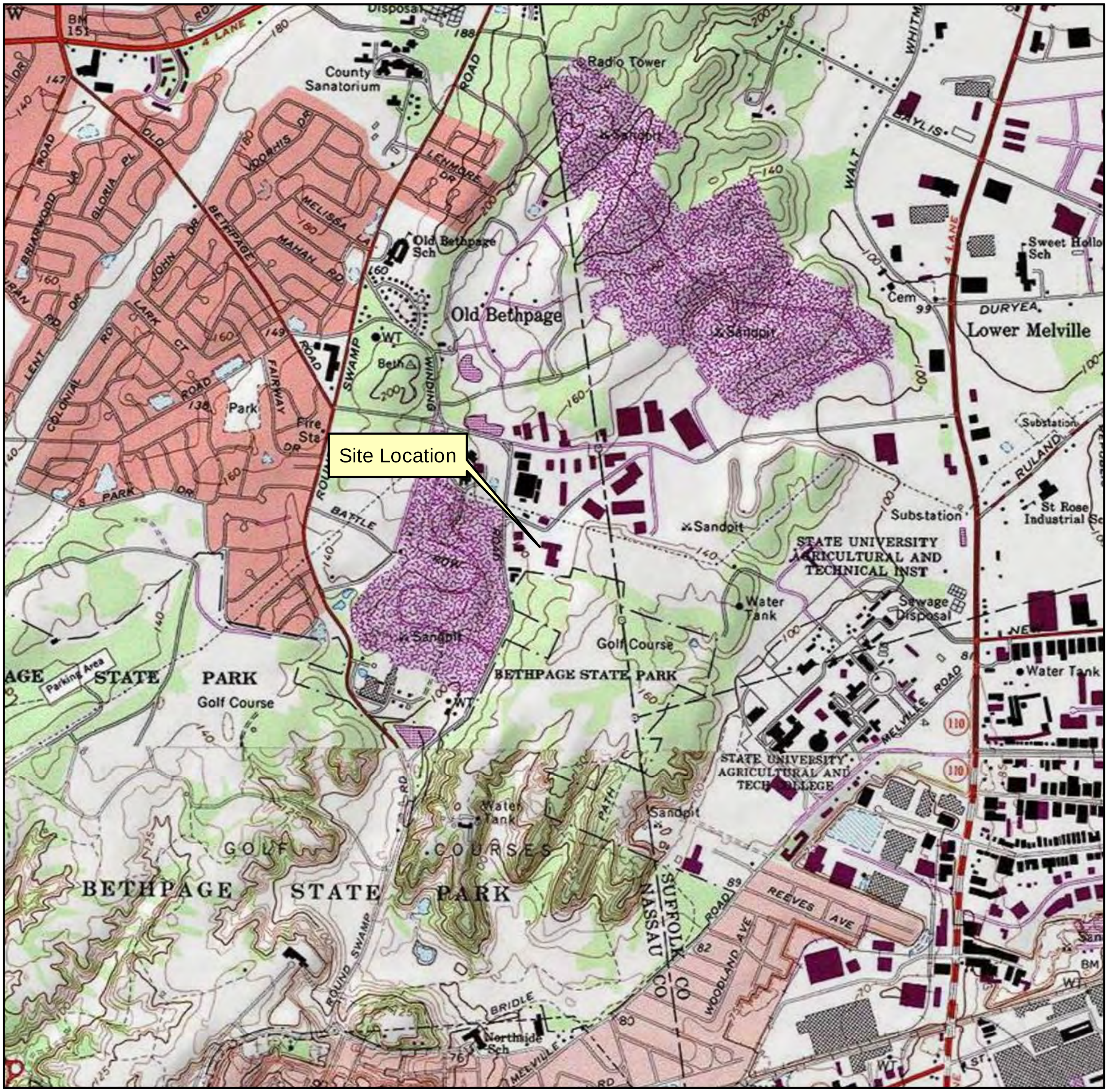
- Resample the groundwater in the three extraction wells quarterly for VOC to observe any contamination concentrations changes due to remediation system remediation or plume migration as compared to historical analytical results;

- Continued quarterly VOC monitoring of 41 observation wells using PDBs;

- Investigation of shallow groundwater and soils in the southern and eastern portions of the site to evaluate shallow groundwater impact observed in EXT-2 and EXT-3, and

- Additional investigation to identify the source and connectivity of the plumes or elevated concentrations identified in the MW-10 well cluster, the BP-3 well cluster and specifically at EW-14D (Figure 3d).

FIGURES



USGS Quadrangle Information
Quad ID: 40073-G4
Name: Huntington, New York
Date Rev: 1977
Date Pub: 1979

0 1,000 2,000 4,000 6,000 8,000 Feet

1 inch = 2,000 feet

N

Figure 1
Site Location
Claremont Polychemical Corporation
Old Bethpage, New York
HRP # NEW9625.OM
Site Code 130015
Scale 1" = 2,000'

HRP Associates, Inc.
Environmental/Civil Engineering & Hydrogeology
Creating the Right Solutions Together
Offices in CT, SC, NY, FL, MA, and TX
197 Scott Swamp Road
Farmington, Connecticut 06032
Ph:(860)674-9570 Fax:(860)674-9624
www.hrpassociates.com

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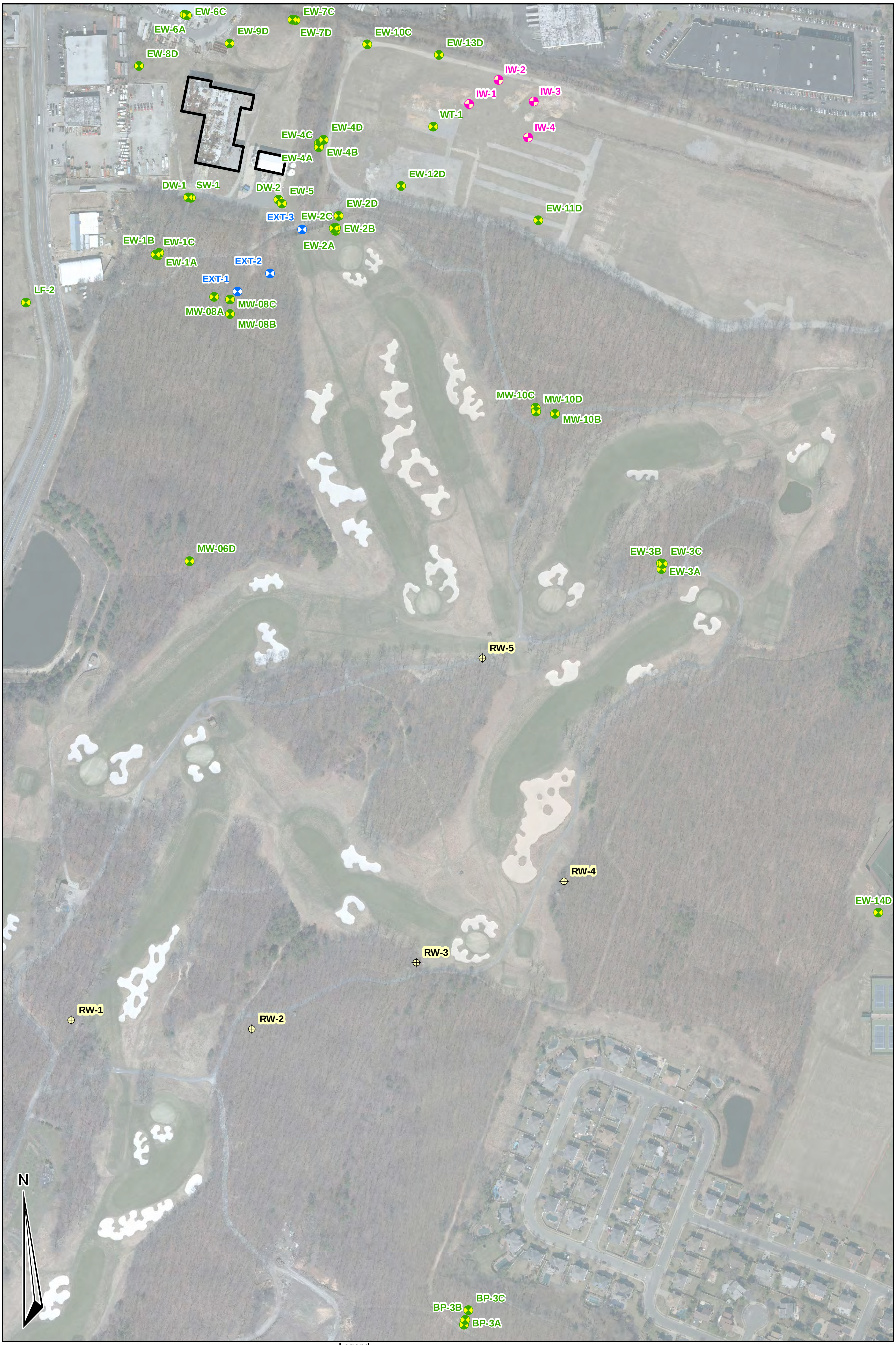

Figure 2A - Monitoring Well Network
Claremont Polychemical Corporation
Old Bethpage, New York
HRP # NEW9625.OM Site Code 130015
Scale 1" = 300'

Legend

- Monitoring Well
- Extraction Well
- Injection Well
- Oyster Bay Extraction Well
- Site Buildings

300 150 0 300 Feet

1 inch = 300 feet

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Environmental/Civil Engineering & Hydrogeology
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Offices in CT, SC, NY, FL, MA and TX
197 Scott Swamp Road
Farmington, Connecticut 06032
Ph:(860)674-9570 Fax:(860)674-9624
www.hrpassociates.com

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N

200 100 0 200 400 Feet

1 inch = 200 feet

Figure 2b
Shallow Groundwater
Elevation Contours
June 2013
Claremont Polychemical Corporation
Old Bethpage, New York
HRP # NEW9625.OM
Site Code 130015
Scale 1" = 200'

Legend

- Monitoring Well
- Extraction Well
- Injection Well
- Oyster Bay Extraction Well
- June 2013 Groundwater Contours

Note: Contours dashed where inferred.

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Offices in CT, SC, NY, FL, MA and TX
197 Scott Swamp Road
Farmington, Connecticut 06032
Ph:(860)674-9570 Fax:(860)674-9624
www.hrpassociates.com

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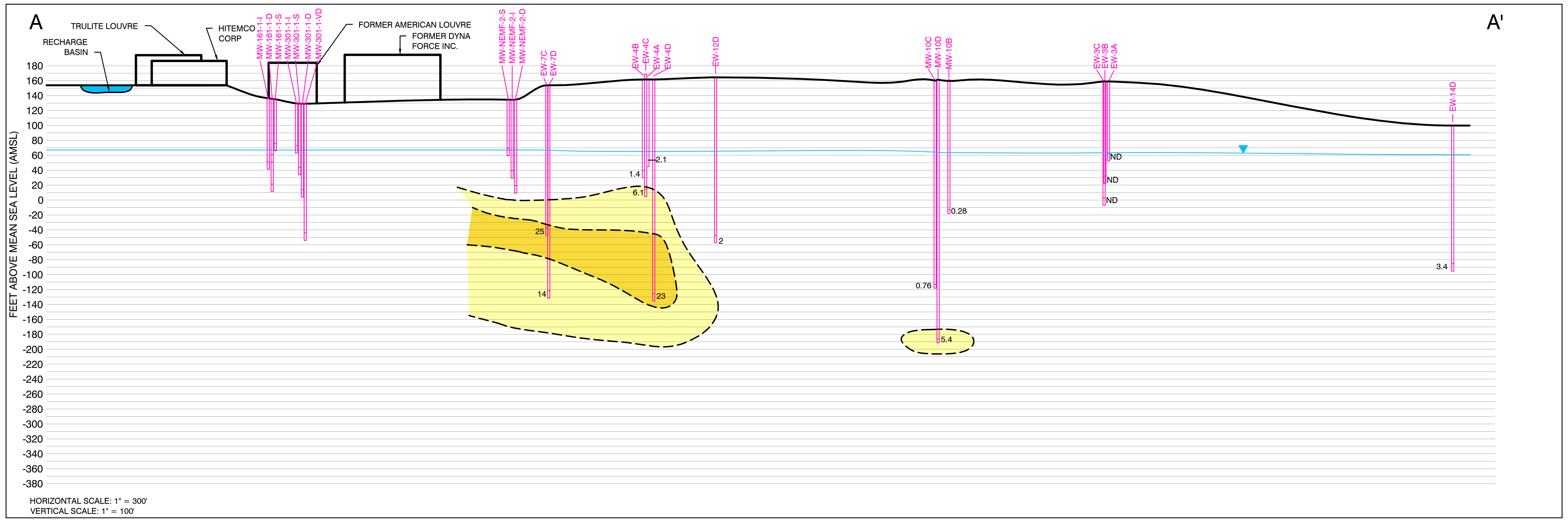
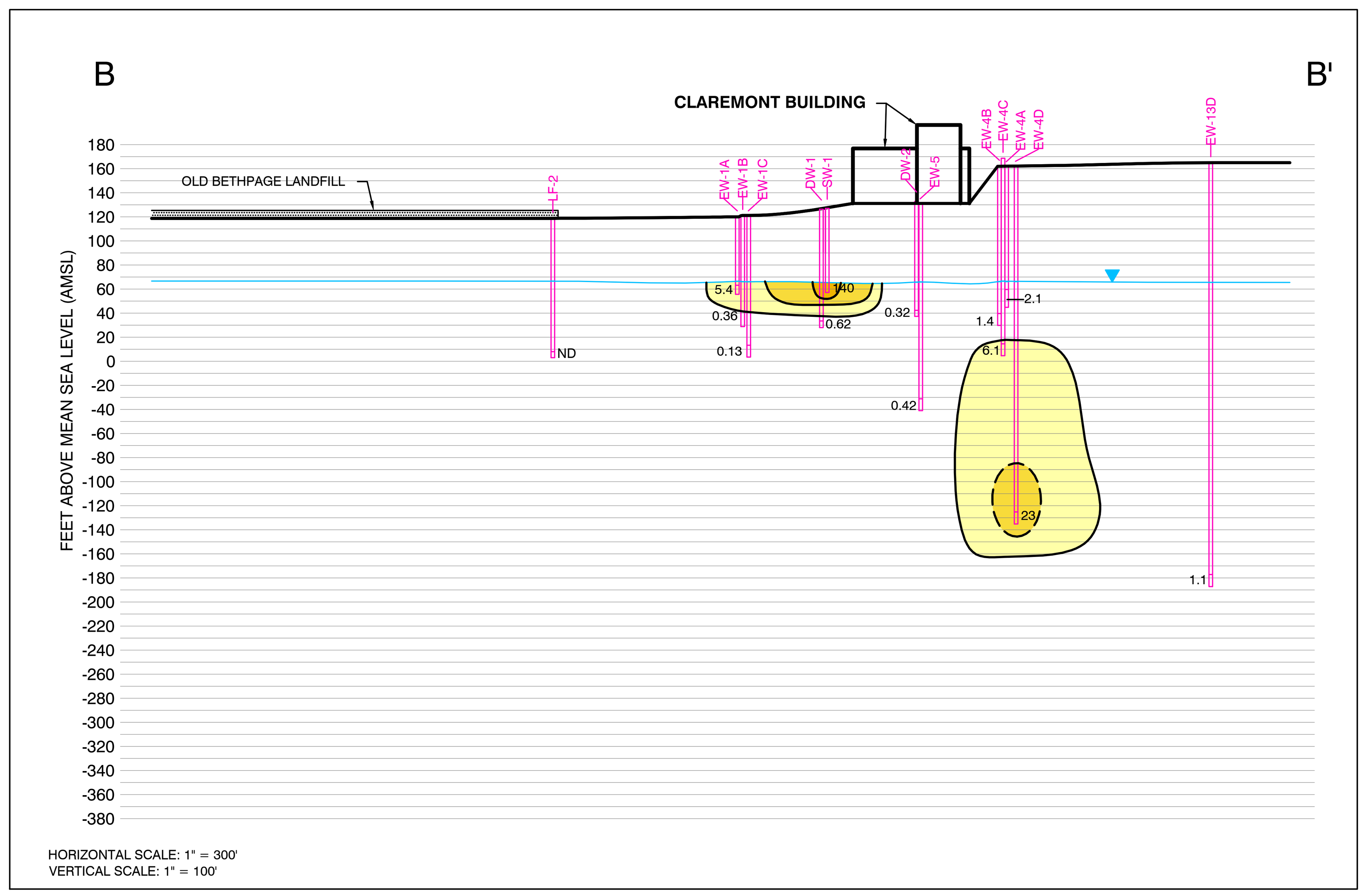




LEGEND

- WATER TABLE

PCE CONCENTRATION ISOPLETHS

- 5 ug/l - 10 ug/l
- 10 ug/l - 100 ug/l
- >100 ug/l
- 3.1 PCE CONCENTRATION IN ug/l

1" = 100'

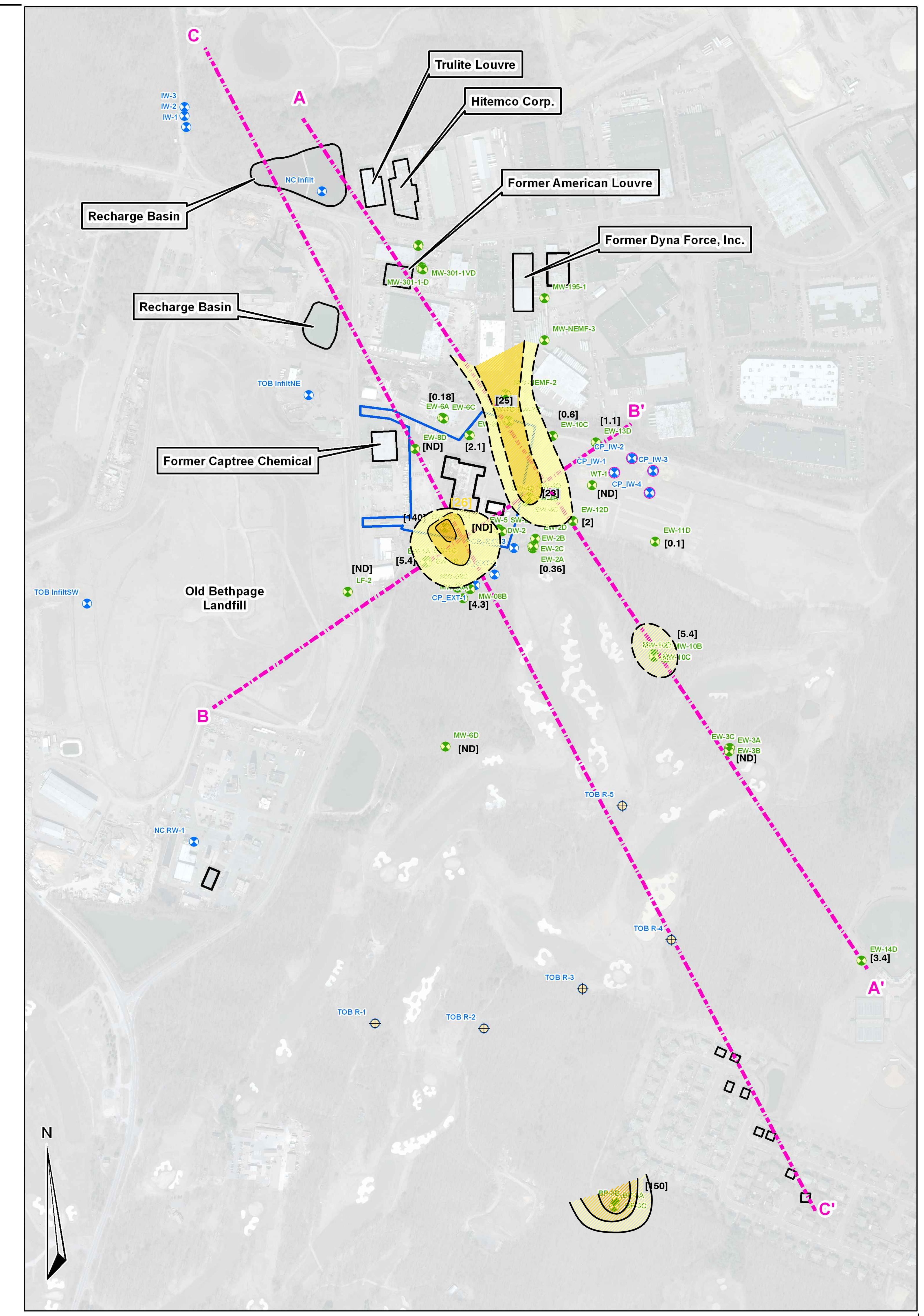
100 0 50 100 200

VERTICAL SCALE IN FEET

1" = 300'

300 200 100 0 150 300 600

HORIZONTAL SCALE IN FEET



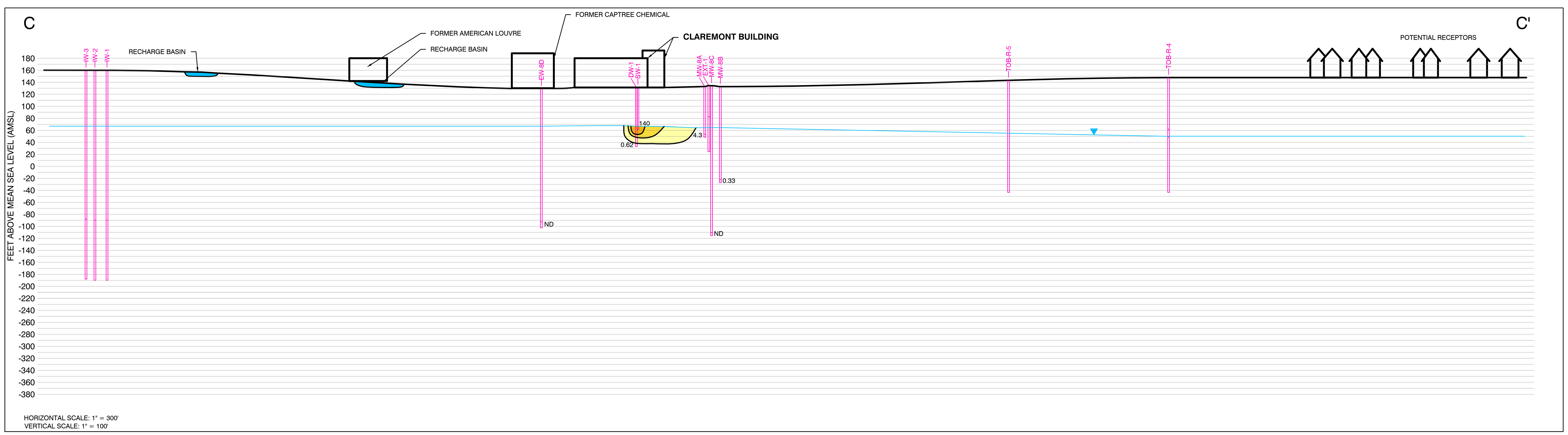
CROSS SECTION LOCATIONS

SCALE 1" = 500'

1" = 500'

500 0 250 500 1000

PLAN VIEW SCALE IN FEET



NO.	DATE	DESCRIPTION

PCE CONTAMINATION - JUNE 2013

CLAREMONT POLYCHEMICAL CORP. OLD BETHPAGE, NEW YORK

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dba HRP Engineering P.C.
Environmental/Civil Engineering & Hydrogeology
Creating the Right Solutions Together
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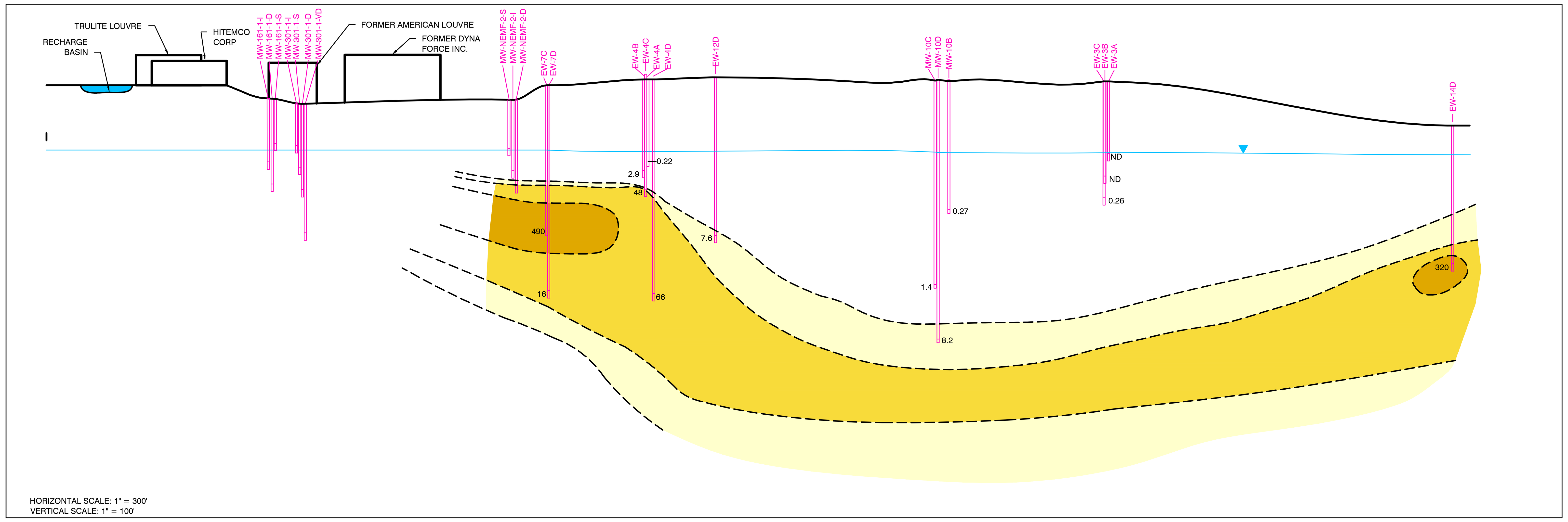
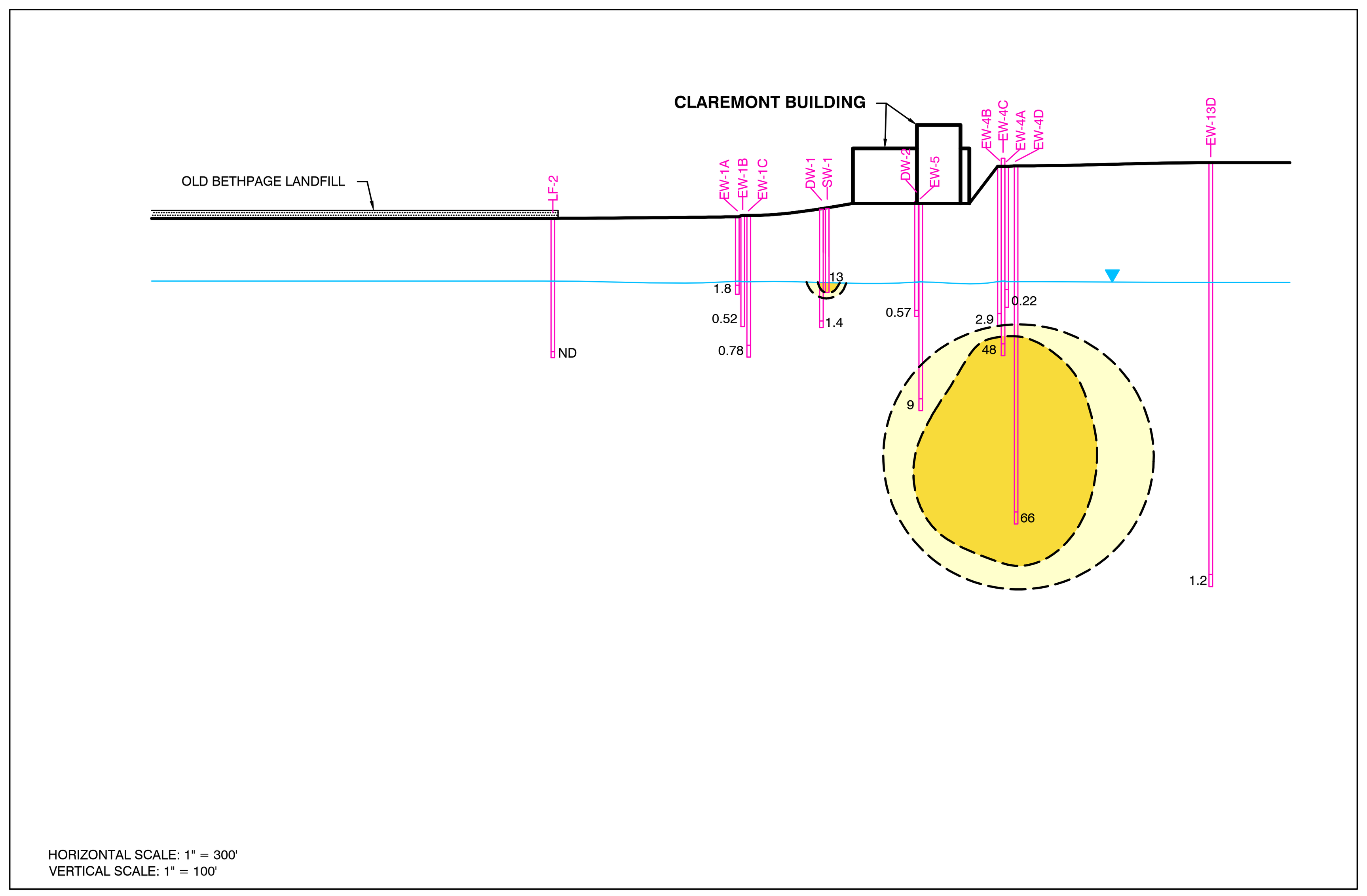
197 Scott Swamp Road
Farmington, Connecticut 06032
Ph:(860)674-9570 Fax:(860)674-9624
www.hrpassociates.com

JMP DESIGNED	BPW APPROVED	AS NOTED SCALE
DML DRAWN	7/16/2013 DATE	
GTS CHECKED	NEW9625.OM PROJECT NO.	FIG. 3A SHEET NO.





LEGEND

-WATER TABLE

TCE CONCENTRATION ISOPLETHS

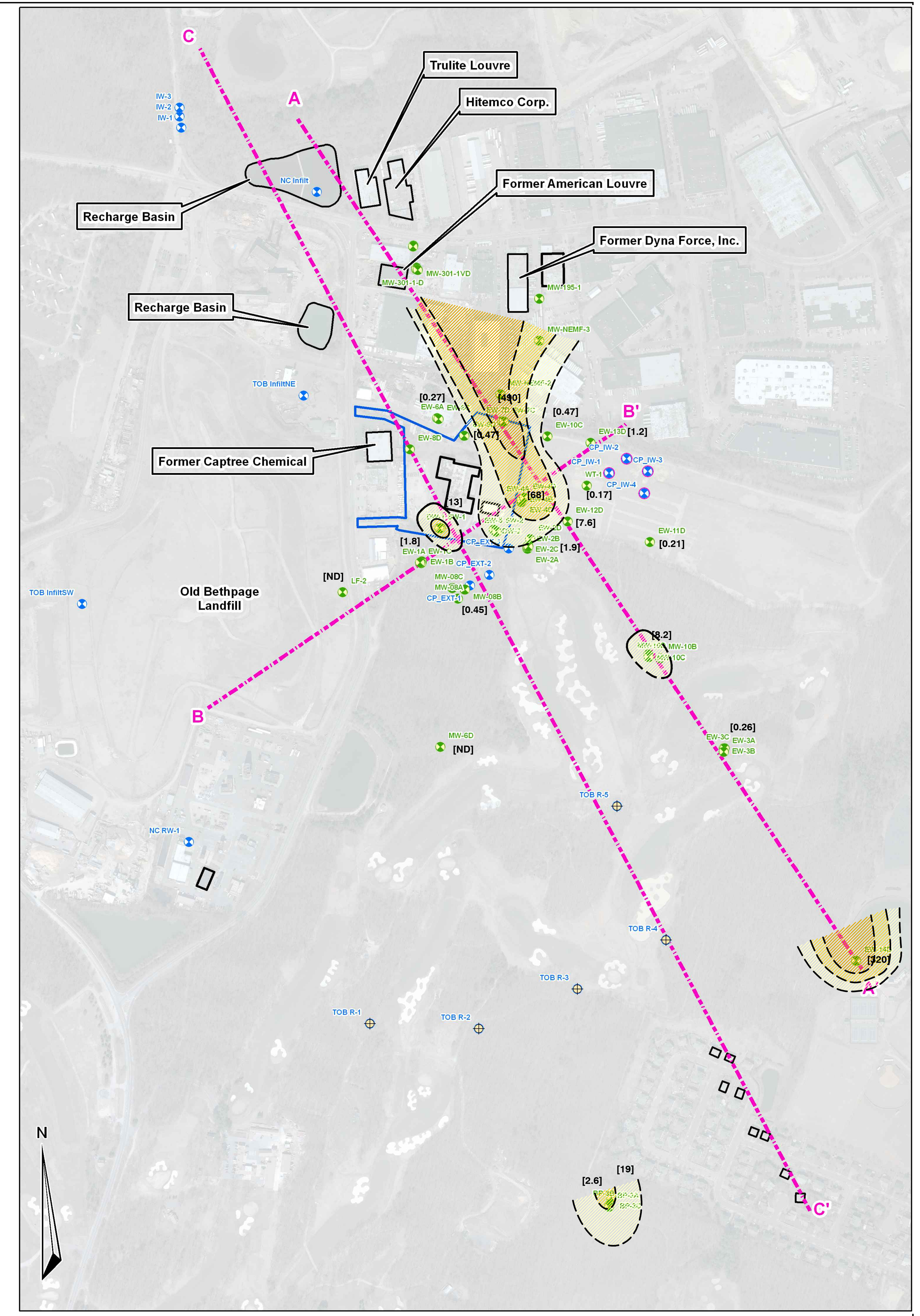
- 5 ug/l - 10 ug/l
- 10 ug/l - 100 ug/l
- >100 ug/l

0.53 -TCE CONCENTRATION IN ug/l

-DASHED WHERE INFERRED

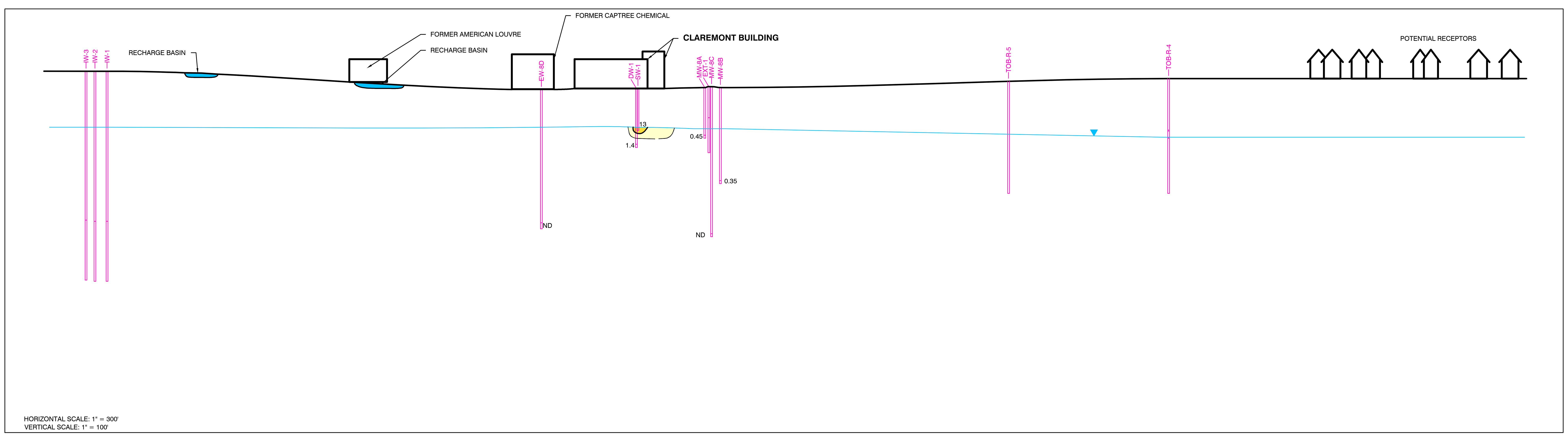
1" = 100'
100 0 50 100 200
VERTICAL SCALE IN FEET

1" = 300'
300 200 100 0 150 300 600
HORIZONTAL SCALE IN FEET



CROSS SECTION LOCATIONS
SCALE 1" = 500'

1" = 500'
500 0 250 500 1000
PLAN VIEW SCALE IN FEET



NO.	DATE	DESCRIPTION

TCE CONTAMINATION - JUNE 2013

CLAREMONT POLYCHEMICAL CORP.
OLD BETHPAGE, NEW YORK

HRP Associates, Inc.
dba HRP Engineering P.C.
Environmental/Civil Engineering & Hydrogeology
Creating the Right Solutions Together
Offices in CT, SC, NY, FL, MA, TX and PA
197 Scott Swamp Road
Farmington, Connecticut 06032
Ph:(860)674-9570 Fax:(860)674-9624
www.hrpassociates.com

JMP DESIGNED	BPW APPROVED	AS NOTED SCALE	
DML DRAWN	7/16/2013 DATE		
GTS CHECKED	NEW9625.0M PROJECT NO.	FIG. 3B SHEET NO.	

TABLES

Table 1: Groundwater Elevations
Claremont Polychemical Superfund Site
June 2013 (2Q13) Groundwater Sampling Event
Old Bethpage, NY
HRP#NEW9625.OM
Site Code: 130015
WA# D006130-19

	Jun-13		
Well ID	Measurement Date	Depth to Water Below Ref El[b] (ft)	Water Elevation (ft AMSL)
EW-1A	13-Jun-13	65.72	64.28
EW-1B	13-Jun-13	66.30	64.23
EW-1C	13-Jun-13	65.98	64.46
EW-2A	13-Jun-13	94.10	63.26
EW-2B	13-Jun-13	94.15	63.58
EW-2C	13-Jun-13	94.50	63.16
EW-2D	13-Jun-13	94.20	64.04
EW-3A	13-Jun-13	96.95	62.00
EW-3B	13-Jun-13	97.43	61.66
EW-3C	13-Jun-13	97.30	61.65
EW-4A	13-Jun-13	97.42	64.36
EW-4B	13-Jun-13	97.50	64.30
EW-4C	13-Jun-13	97.18	64.36
EW-4D	13-Jun-13	97.20	64.57
EW-5	13-Jun-13	72.00	64.98
EW-6A	13-Jun-13	64.10	66.22
EW-6B	abandoned		
EW-6C	13-Jun-13	64.20	66.20
EW-7C	13-Jun-13	88.35	65.44
EW-7D	13-Jun-13	88.32	65.39
EW-8D	13-Jun-13	72.15	59.39
EW-9D	13-Jun-13	66.18	71.35
EW-10C	13-Jun-13	95.60	65.34
EW-11D	13-Jun-13	101.50	63.83
EW-12D	13-Jun-13	100.38	64.04
EW-13D	13-Jun-13	100.25	64.48
EW-14D	13-Jun-13	41.81	60.32
SW-2	dry		
DW-2	13-Jun-13	73.28	63.14
SW-1	13-Jun-13	67.09	64.40
DW-1	13-Jun-13	66.95	64.43
LF-02	13-Jun-13	51.90	66.80
PPW-1	Permanently closed Oct. 2008		
WT-01	13-Jun-13	99.05	65.52
MW-6D	13-Jun-13	96.78	63.61
MW-8A	13-Jun-13	71.75	61.43
MW-8B	13-Jun-13	70.10	64.14
MW-8C	13-Jun-13	17.40	118.32
MW-10B	13-Jun-13	98.34	62.78
MW-10C	13-Jun-13	97.38	62.89
MW-10D	13-Jun-13	98.10	63.07
BP-3A	13-Jun-13	63.66	60.88
BP-3B	13-Jun-13	65.20	58.37
BP-3C	13-Jun-13	65.40	58.28
RW-01	abandoned		

Table 2: Summary of Analytical Results

June 2013 (2Q13) Sampling Event
Claremont Polychemical Superfund Site
Old Bethpage, NY
HRP#NEW9625.OM
Site Code: 130015
WA# D006130-19

Note
values in blue italics are "J" flagged
Values in shaded cells exceed criteria

Sample Description	Date Collected	Lab Report No	Lab Sample No	Tetrachloroethylene	Trichloroethylene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	1,1-Dichloroethylene	Vinyl chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane (freon 113)	1,1-Dichloroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Acetone	Benzene	Chlorobenzene	Chloroform	Cyclohexane	Isopropylbenzene	m/p-Xylenes	Methyltertbutyl ether	o-Xylene	Toluene
			CAS	127-18-	79-01-6	156-59-2	156-60-5	75-35-4	75-01-4	71-55-6	79-00-5	76-13-1	75-34-3	95-50-1	107-06-2	541-73-1	106-46-7	67-64-1	71-43-2	108-90-7	67-66-3	110-82-7	98-82-8	179601-23-	1634-04-4	95-47-6	108-88-3
			Unit	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
			NYSDEC Class GA Criteria	5	5	5	5	5	2	5	1	5	5	3	5	5	5	50	1	5	7	NS	5	5	10	5	5
BP-3a	6/17/13	460-58383-1	460-58383-1SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.85*	<1	<1	<2	<1	<1	<1
BP-3b	6/17/13	460-58383-1	460-58383-2SITE	**26**	2.6	**15**	*0.15*	<1	<1	<1	<1	<1	1.2	<1	<1	<1	<1	<5	<1	<1	*0.29*	<1	<1	<2	<1	<1	<1
BP-3c	6/17/13	460-58383-1	460-58383-3SITE	**150**	**19**	**130**	*0.66*	*0.74*	1.2	<1	*0.21*	2.2	3.4	<1	<1	<1	<1	<5	*0.15*	<1	*0.36*	*0.21*	<1	<2	<1	<1	<1
DW-1	6/17/13	460-58383-1	460-58383-4SITE	*0.62*	1.4	*0.32*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	*0.17*	<1	<2	<1	<1	<1
DW-2	6/18/13	460-58383-1	460-58383-5SITE	*0.32*	*0.57*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	11	<1	<1	5.5	<1	<1	<2	<1	<1	<1
EW-10c	6/18/13	460-58383-1	460-58383-28SITE	*0.6*	*0.75*	<1	<1	1.5	<1	1.8	<1	<1	*0.28*	<1	<1	<1	<1	<5	<1	<1	*0.21*	*0.19*	<1	<2	*0.25*	<1	<1
EW-11d	6/18/13	460-58383-1	460-58383-29SITE	*0.1*	*0.21*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-12d	6/18/13	460-58383-1	460-58383-30SITE	2	**7.6**	2	<1	*0.97*	<1	<1	<1	<1	*0.14*	<1	<1	<1	<1	<5	<1	<1	*0.14*	<1	<1	<2	<1	<1	<1
EW-13d	6/18/13	460-58383-1	460-58383-31SITE	1.1	1.2	<1	<1	*0.57*	<1	<1	<1	<1	*0.35*	<1	<1	<1	<1	<5	<1	<1	*0.11*	<1	<1	<2	<1	<1	<1
EW-14d	6/17/13	460-58383-1	460-58383-32SITE	3.4	**320**	2.4	<1	**36**	<1	**37**	*0.7*	3.7	*0.82*	<1	**7.5**	<1	<1	9.6	<1	<1	1.6	<1	<1	<2	<1	<1	<1
EW-1a	6/18/13	460-58383-1	460-58383-6SITE	**5.1**	1.7	4.1	*0.13*	<1	<1	<1	<1	<1	*0.14*	<1	<1	<1	<1	9.3	<1	<1	3	<1	<1	<2	<1	<1	<1
EW-1a dup	6/18/13	460-58383-1	460-58383-7SITE	**5.4**	1.8	4.6	*0.13*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	1.5	<1	<1	<2	<1	<1	<1
EW-1b	6/18/13	460-58383-1	460-58383-8SITE	*0.36*	*0.52*	*0.3*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.1	<1	<1	*0.65*	<1	<1	<2	<1	<1	<1
EW-1c	6/18/13	460-58383-1	460-58383-9SITE	*0.13*	*0.78*	*0.27*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-2a	6/17/13	460-58383-1	460-58383-10SITE	*0.34*	*0.14*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.41*	<1	<1	<2	<1	<1	<1
EW-2b	6/17/13	460-58383-1	460-58383-11SITE	*0.23*	*0.21*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-2c	6/17/13	460-58383-1	460-58383-12SITE	*0.17*	1.9	*0.18*	<1	*0.43*	<1	*0.43*	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-2d	6/17/13	460-58383-1	460-58383-13SITE	<1	*0.44*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.33*	<1	<1	<2	<1	<1	<1
EW-3a	6/17/13	460-58383-1	460-58383-14SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.34*	<1	<1	<2	<1	<1	<1
EW-3b	6/17/13	460-58383-1	460-58383-15SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-3c	6/17/13	460-58383-1	460-58383-16SITE	<1	*0.26*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-4a	6/18/13	460-58383-1	460-58383-17SITE	2.1	*0.22*	*0.44*	<1	*0.16*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-4b	6/18/13	460-58383-1	460-58383-18SITE	1.4	2.9	<1	<1	<1	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	5.7	<1	<1	<2	<1	<1	<1
EW-4c	6/18/13	460-58383-1	460-58383-19SITE	**6.1**	**48**	1.6	1	1.9	<1	2.5	<1	<1	*0.46*	<1	<1	<1	<1	<5	<1	<1	*0.24*	*0.16*	<1	<2	<1	<1	<1
EW-4d	6/18/13	460-58383-1	460-58383-20SITE	**23**	**66**	*0.27*	<1	*0.51*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.15*	<1	<1	<2	<1	<1	<1
EW-5	6/18/13	460-58383-1	460-58383-21SITE	*0.42*	**9**	1	*0.27*	<1	<1	<1	<1	<1	<1	<1	*0.23*	<1	<1	<5	<1	<1	*0.093*	*0.18*	<1	<2	<1	<1	<1
EW-6a	6/17/13	460-58383-1	460-58383-22SITE	*0.18*	*0.27*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.6	<1	<1	<1	<1	<1	<2	<1	<1	<1
EW-6c	6/17/13	460-58383-1	460-58383-23SITE	<1	*0.18*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	13	<1	<1	<1	<1	<1	<2	<1	<1	*0.18*
EW-7c	6/17/13	460-58383-1	460-58383-24SITE	**25**	**490**	**9.5**	<1	*0.78*	<1	1.4	<1	<1	*0.24*	<1	<1	<1	<1	9.1	<1	<1	*0.2*	<1	<1	<2	1.6	<1	<1
EW-7d	6/17/13	460-58383-1	460-58383-25SITE	**14**	**16**	<1	<1	<1	<1	*0.16*	<1	<1	<1	<1	<1	<1	<1	9.7	<1	<1	*0.1*	<1	<1	<2	<1	<1	<1
EW-8d	6/18/13	460-58383-1	460-58383-26SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	8.5	<1	<1	*0.11*	<1	<1	<2	<1	<1	<1
EW-9d	6/17/13	460-58383-1	460-58383-27SITE	2.1	*0.47*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.1	<1	<1	*0.27*	<1	<1	<2	<1	<1	<1
LF-2	6/18/13	460-58383-1	460-58383-33SITE	<1	<1	*0.4*	<1	<1	<1	<1	<1	<1	<1	1.5	<1	*0.14*	3.6	<5	**2.8**	3.6	<1	<1	4.4	*0.91*	<1	*0.56*	<1
MW-10b	6/17/13	460-58383-1	460-58383-38SITE	*0.28*	*0.27*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.7	<1	<1	*0.14*	<1	<1	<2	<1	<1	<1
MW-10c	6/17/13	460-58383-1	460-58383-39SITE	*0.76*	1.4	<1	<1	*0.17*	<1	<1	<1	<1	<1	<1	<1	<1	<1	11	<1	<1	<1	<1	<1	<2	<1	<1	<1
MW-10d	6/17/13	460-58383-1	460-58383-40SITE	**5.4**	**8.2**	*0.89*	<1	*0.82*	<1	<1	<1	<1	*0.83*	<1	*0.22*	<1	<1	<5	<1	<1	*0.16*	<1	<1	<2	<1	<1	<1
MW-6d	6/17/13	460-58383-1	460-58383-34SITE	<1	*0.18*	*0.23*	<1	<1	<1	<1	<1	<1	*0.31*	*0.33*	<1	<1	*0.59*	<5	*0.25*	*0.35*	<1	*0.26*	<1	<2	1.8	<1	<1
MW-8a	6/17/13	460-58383-1	460-58383-35SITE	4.3	*0.45*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.16*	<1	<1	<2	<1	<1	<1
MW-8b	6/17/13	460-58383-1	460-58383-36SITE	*0.33*	*0.35*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
MW-8c	6/17/13	460-58383-1	460-58383-37SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.4	<1	<1	<1	<1	<1	<2	<1	<1	<1
SW-1	6/17/13	460-58383-1	460-58383-41SITE	**140**	**13**	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	*0.15*	<1	<1	<2	<1	<1	<1
WT-1	6/18/13	460-58383-1	460-58383-42SITE	*0.38*	*0.17*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1
WT-1 dup	6/18/13	460-58383-1	460-58383-43SITE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<2	<1	<1	<1

CHARTS

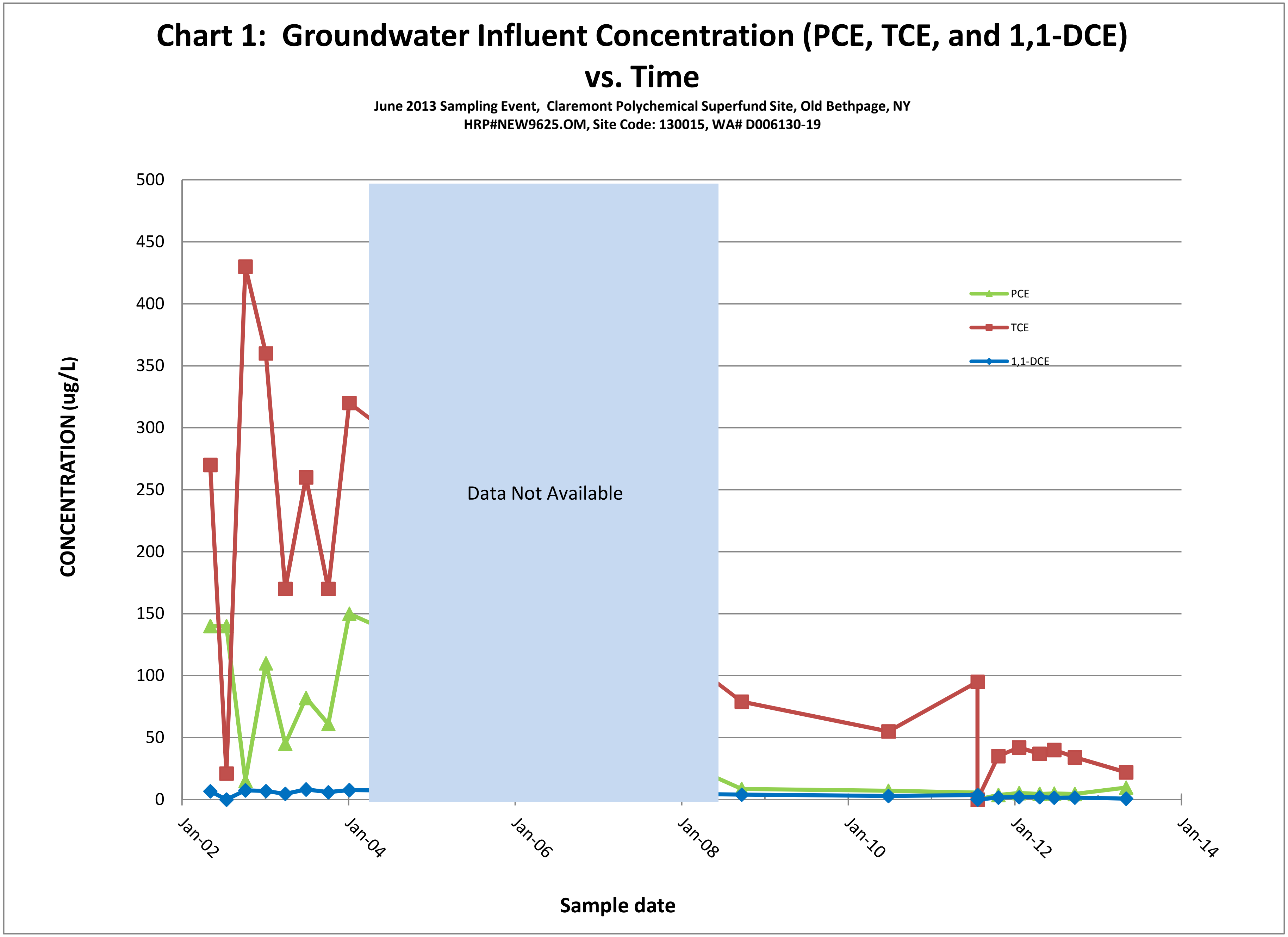


Chart 1: Groundwater Influent Concentration (PCE, TCE, and 1,1-DCE) vs. Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
CONCENTRATION (ug/L)
500
450
400
350
300
250
200
150
100
50
0
Data Not Available
PCE
TCE
1,1-DCE
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Sample date

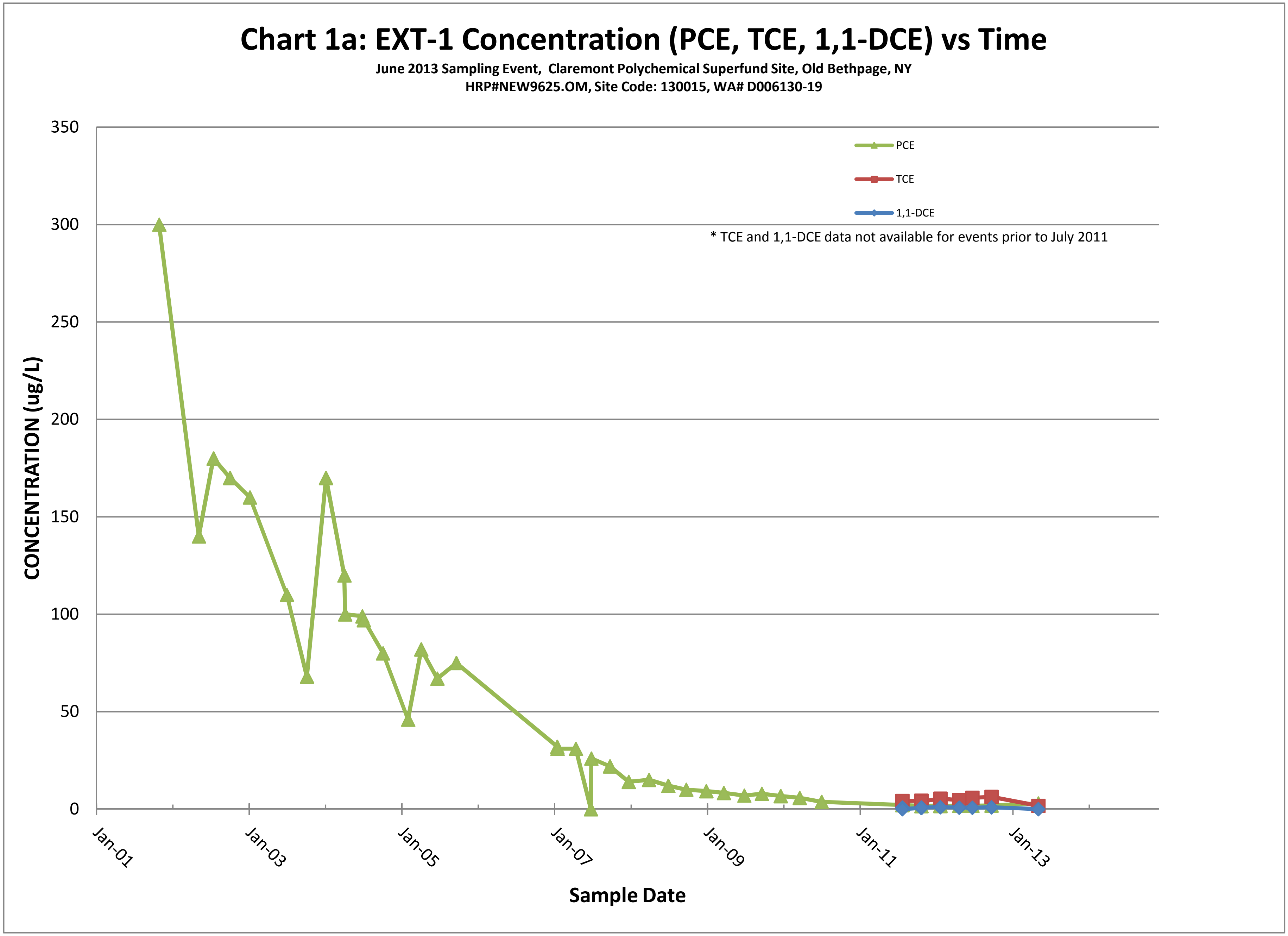


Chart 1a: EXT-1 Concentration (PCE, TCE, 1,1-DCE) vs Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
CONCENTRATION (ug/L)
350
300
250
200
150
100
50
0
PCE
TCE
1,1-DCE
* TCE and 1,1-DCE data not available for events prior to July 2011
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Sample Date

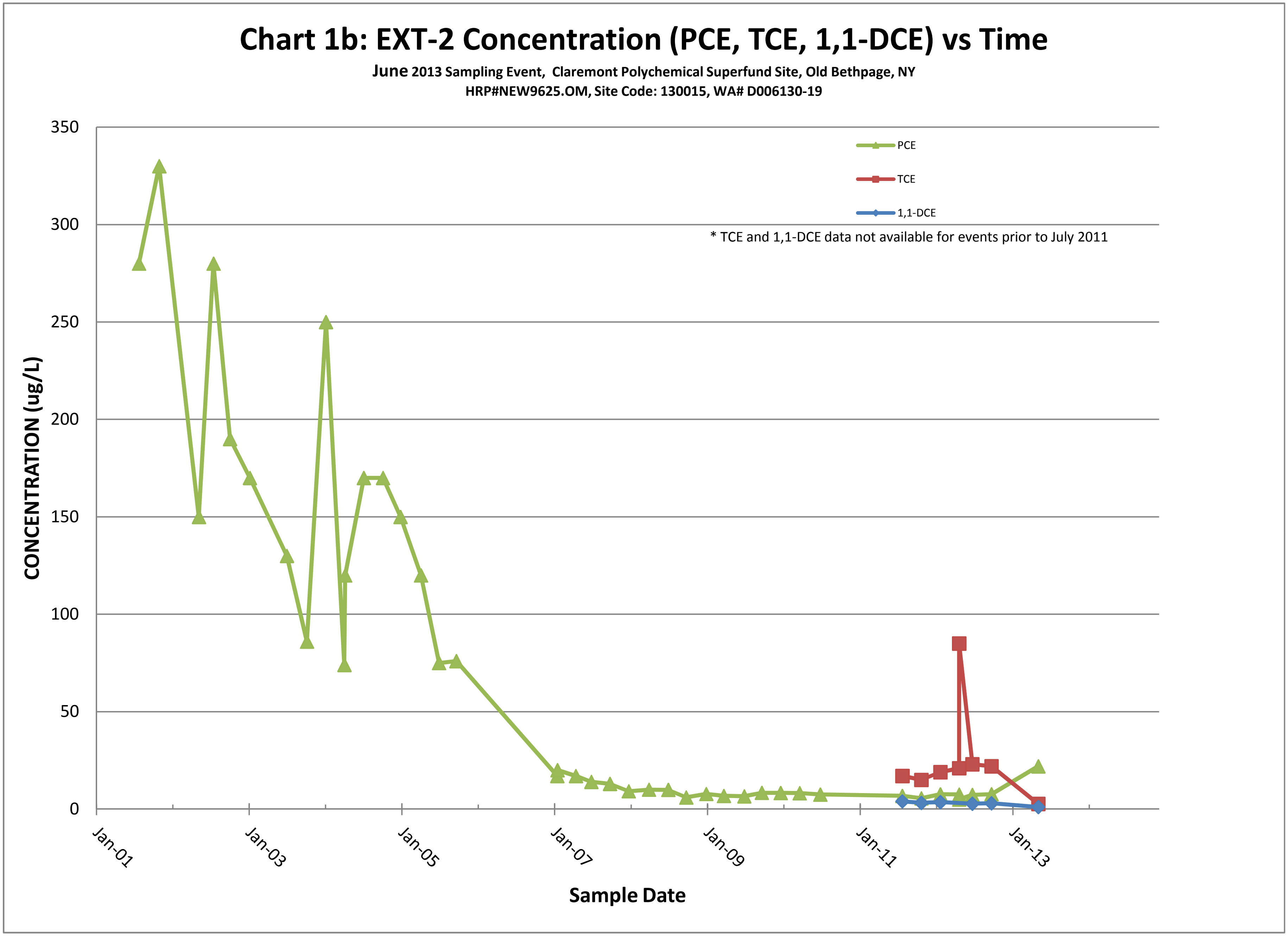


Chart 1b: EXT-2 Concentration (PCE, TCE, 1,1-DCE) vs Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
PCE
TCE
1,1-DCE
* TCE and 1,1-DCE data not available for events prior to July 2011
CONCENTRATION (ug/L)
350
300
250
200
150
100
50
0
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Sample Date

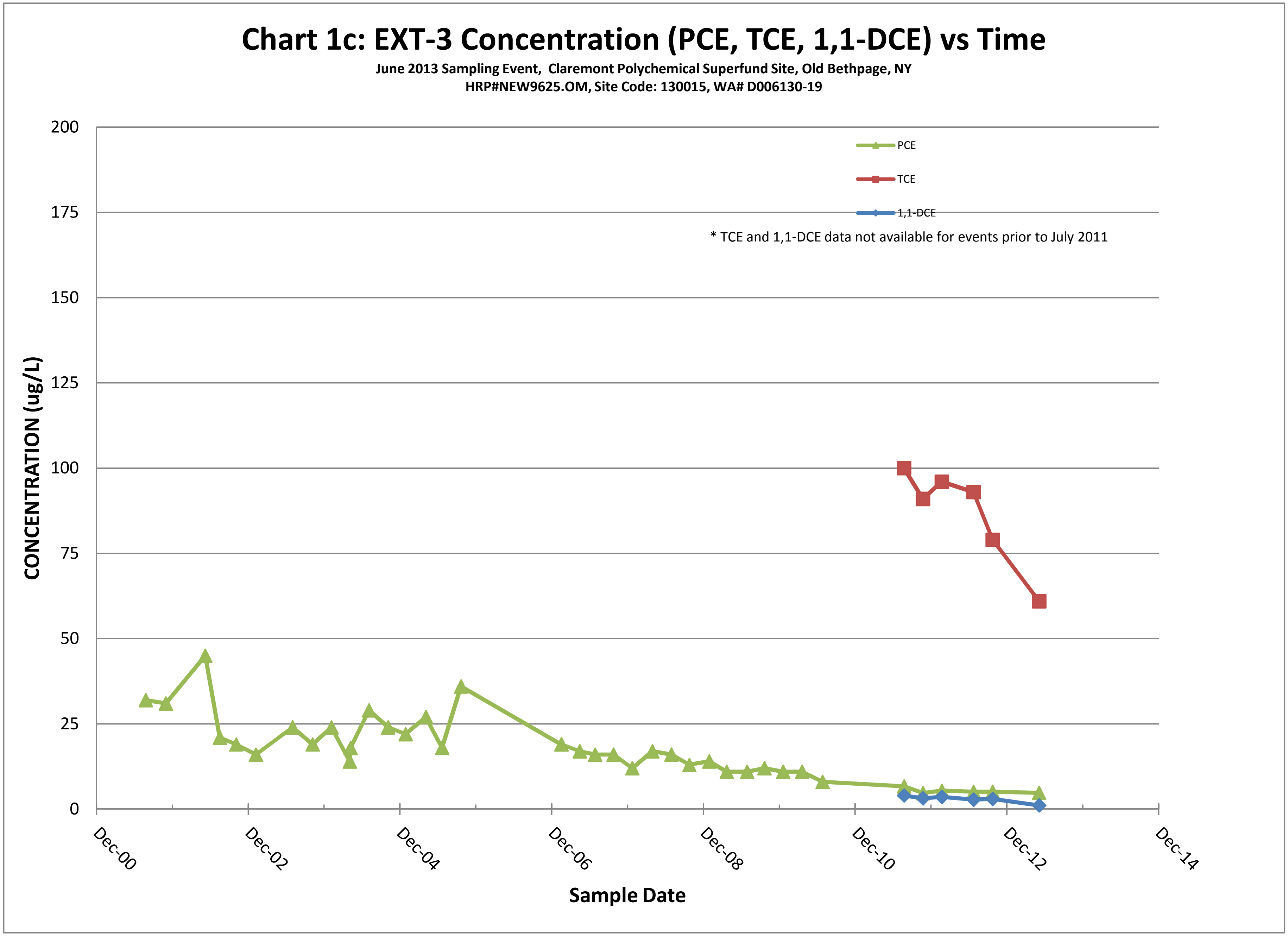
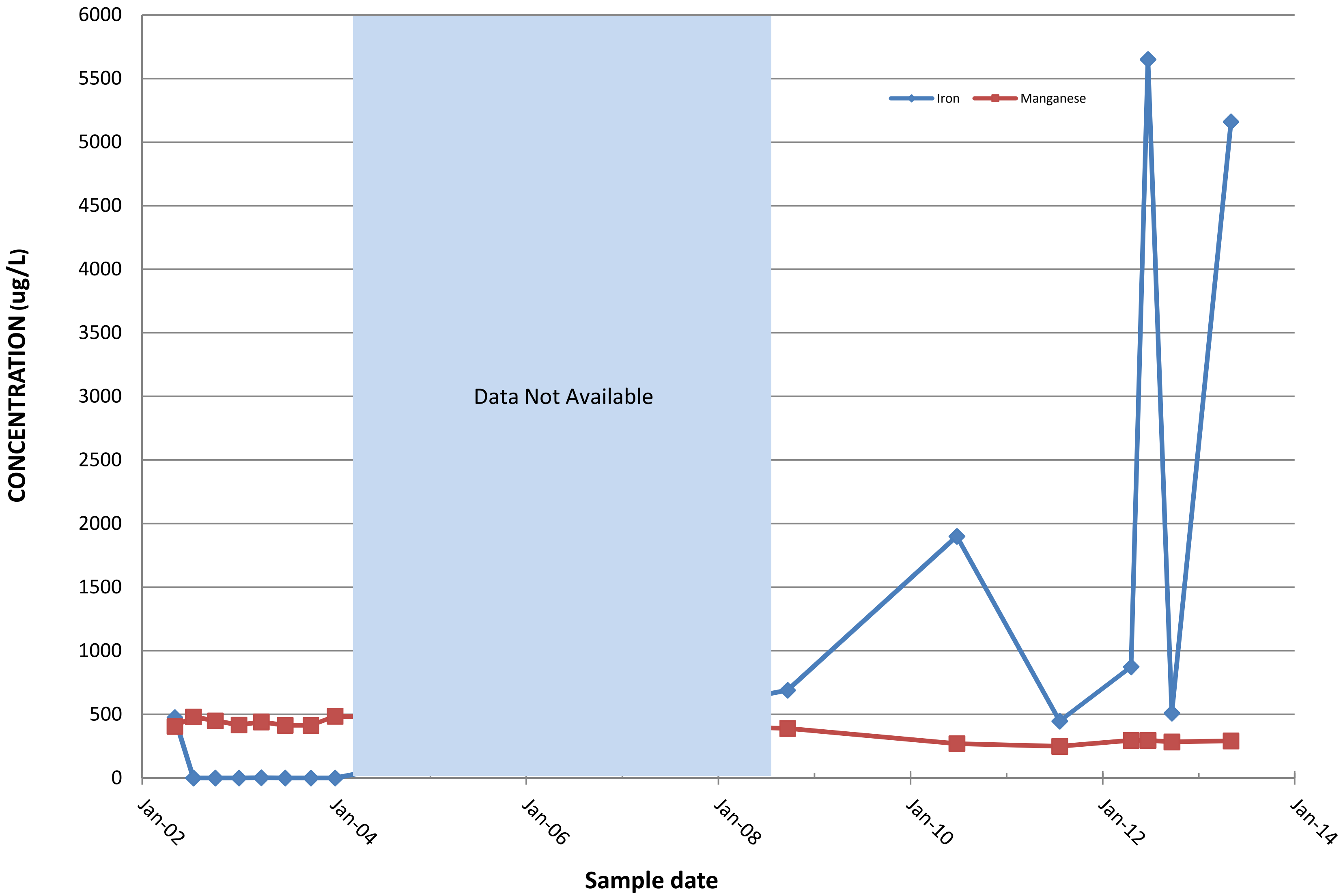


Chart 1c: EXT-3 Concentration (PCE, TCE, 1,1-DCE) vs Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
PCE
TCE
1,1-DCE
* TCE and 1,1-DCE data not available for events prior to July 2011
CONCENTRATION (ug/L)
200
175
150
125
100
75
50
25
0
Dec-00
Dec-02
Dec-04
Dec-06
Dec-08
Dec-10
Dec-12
Dec-14
Sample Date

Chart 2: Groundwater Influent Concentration (Iron and Manganese) vs. Time

June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19



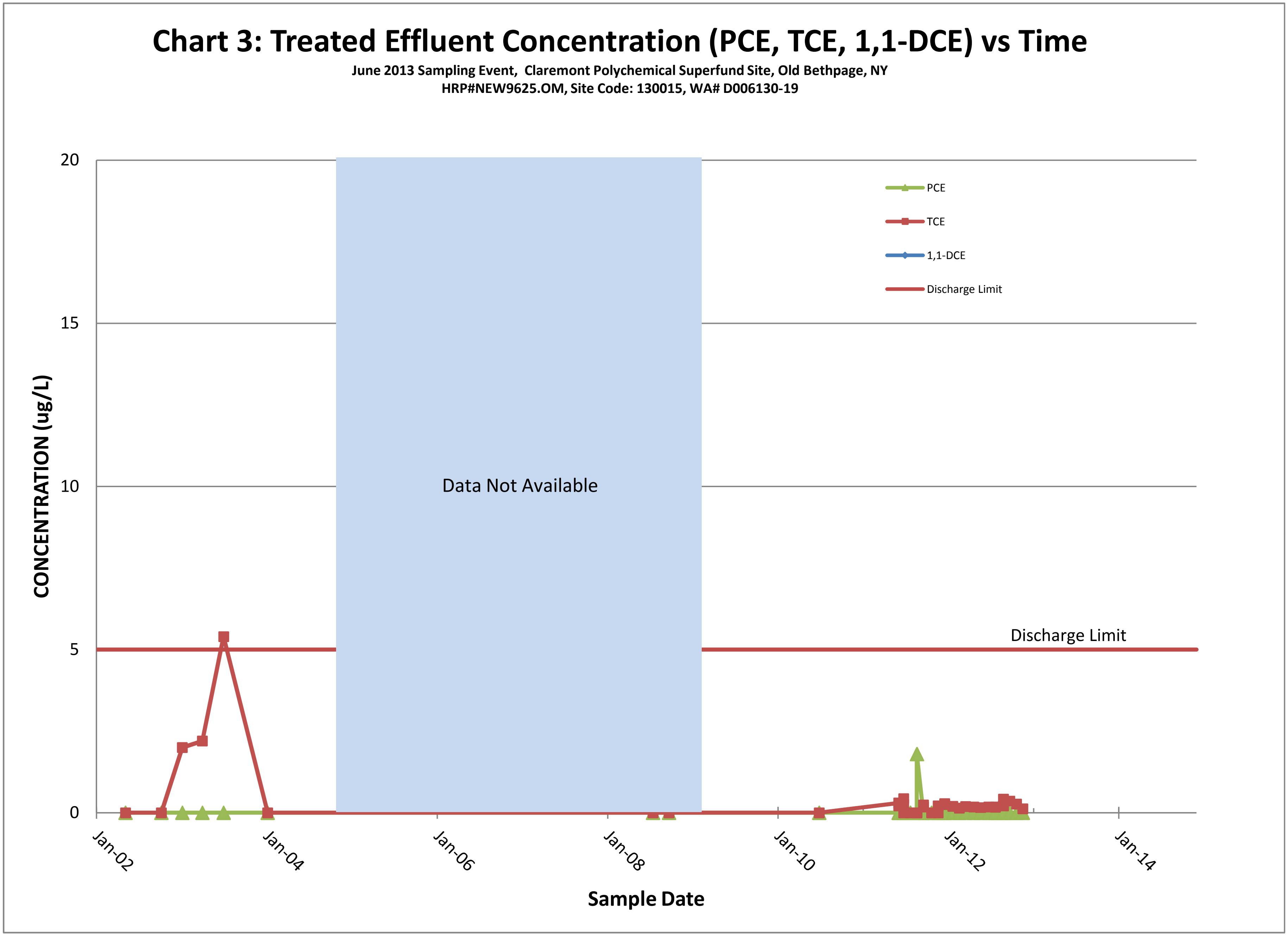


Chart 3: Treated Effluent Concentration (PCE, TCE, 1,1-DCE) vs Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
20
15
10
5
0
CONCENTRATION (ug/L)
PCE
TCE
1,1-DCE
Discharge Limit
Data Not Available
Discharge Limit
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Sample Date

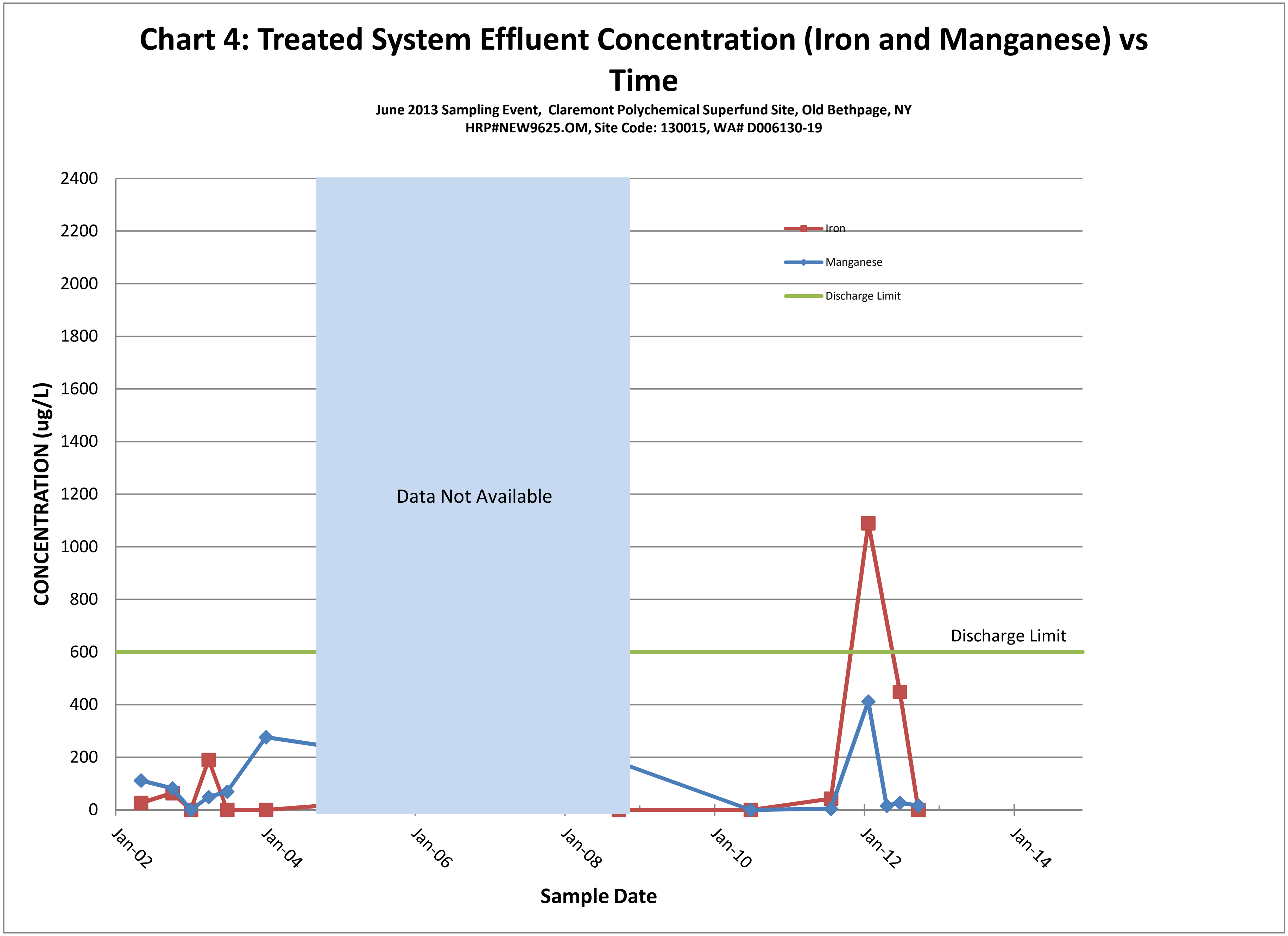


Chart 4: Treated System Effluent Concentration (Iron and Manganese) vs Time
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
Iron
Manganese
Discharge Limit
Data Not Available
Discharge Limit
CONCENTRATION (ug/L)
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Sample Date

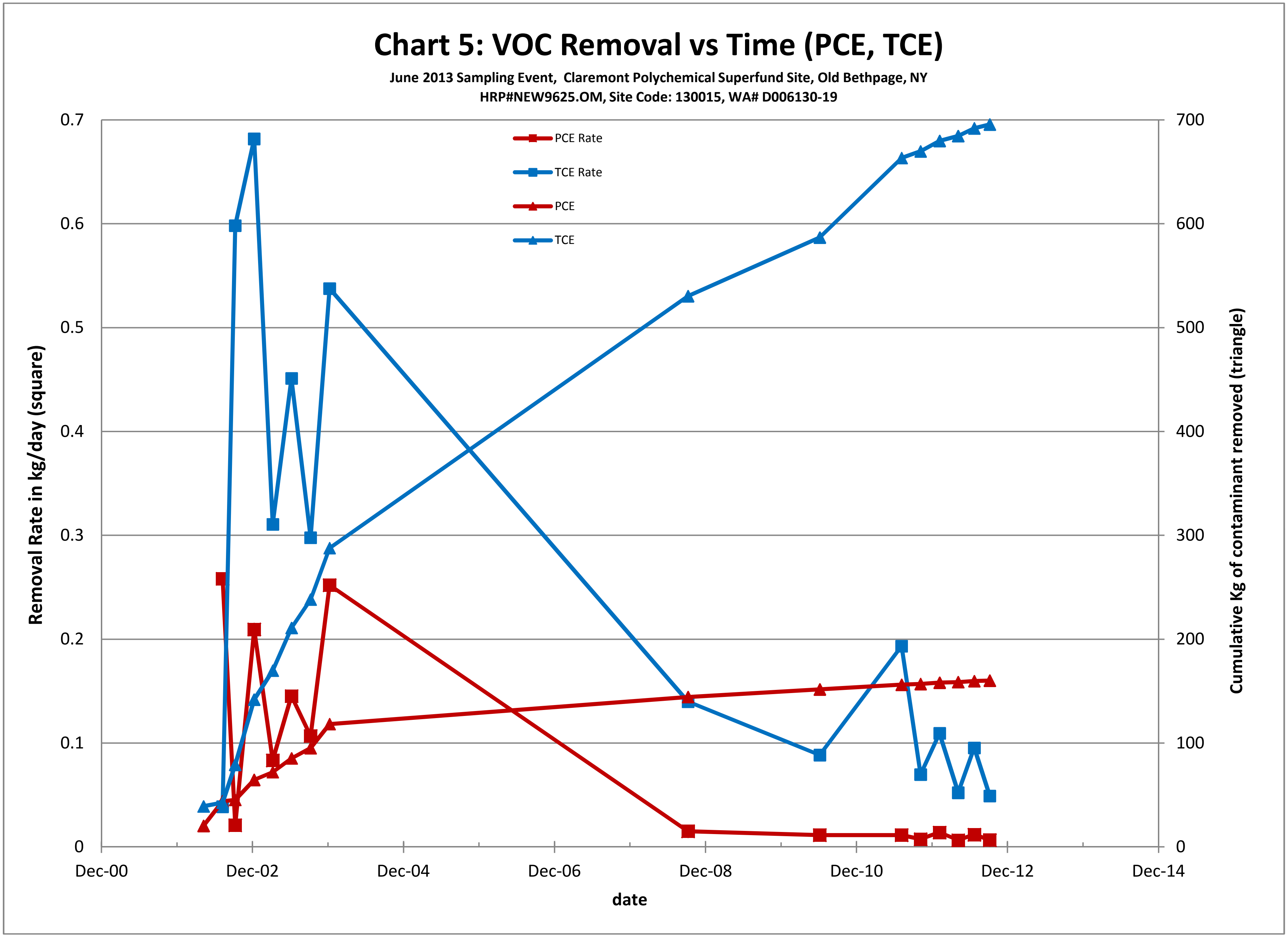


Chart 5: VOC Removal vs Time (PCE, TCE)
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
PCE Rate
TCE Rate
PCE
TCE
Removal Rate in kg/day (square)
Cumulative Kg of contaminant removed (triangle)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
100
200
300
400
500
600
700
Dec-00
Dec-02
Dec-04
Dec-06
Dec-08
Dec-10
Dec-12
Dec-14
date

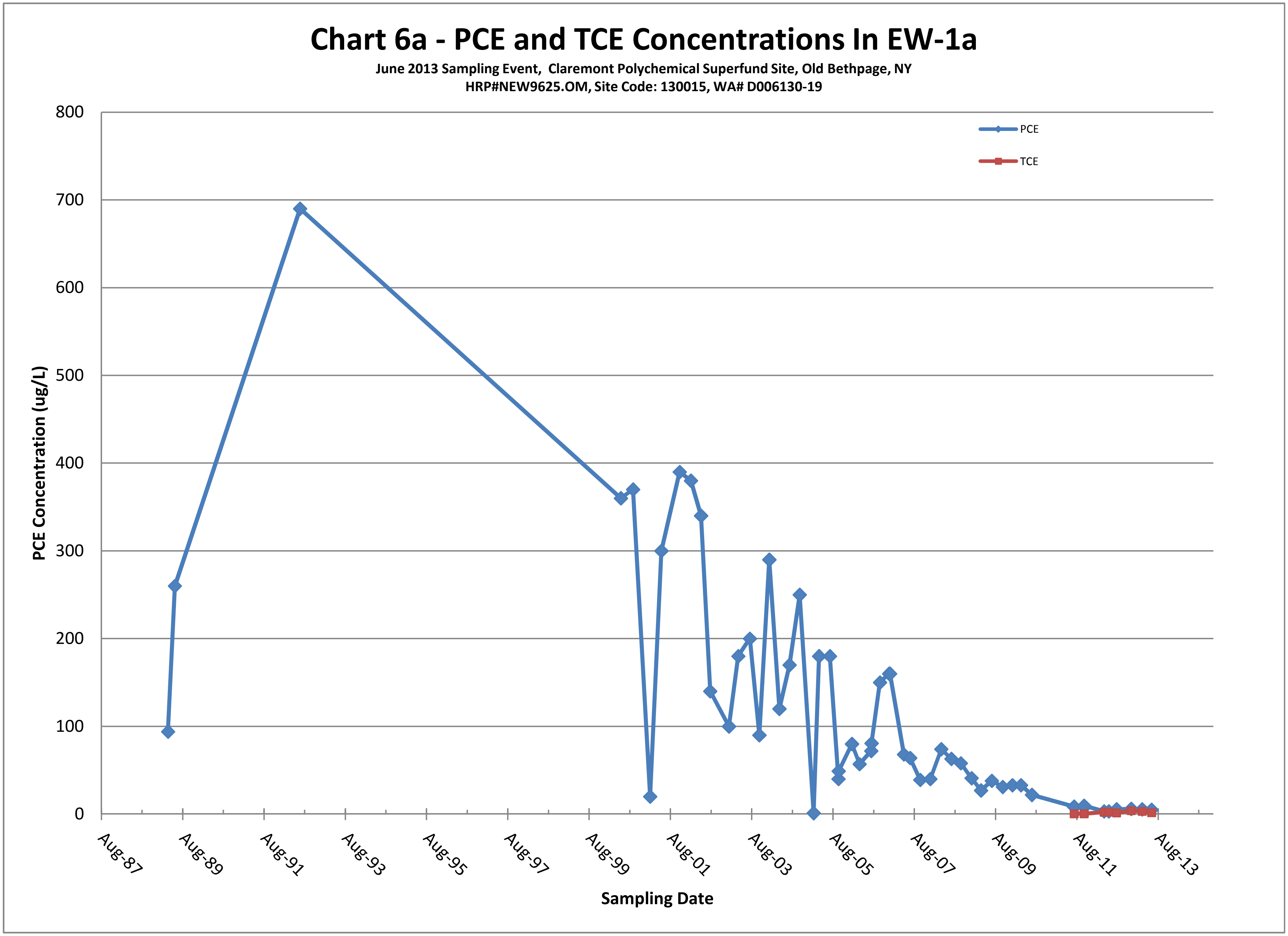


Chart 6a - PCE and TCE Concentrations In EW-1a
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
PCE
TCE
PCE Concentration (ug/L)
800
700
600
500
400
300
200
100
0
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Aug-07
Aug-09
Aug-11
Aug-13
Sampling Date

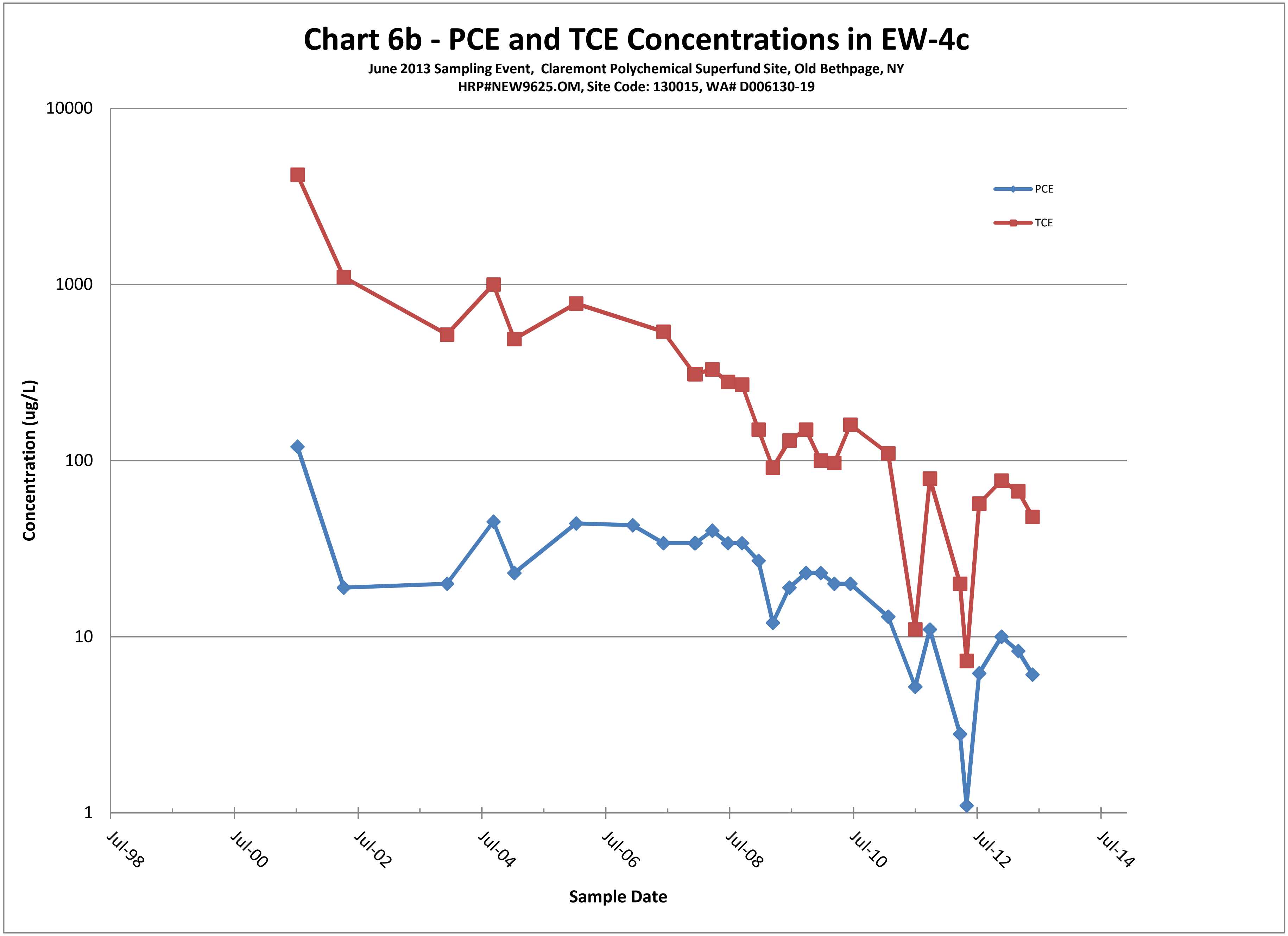


Chart 6b - PCE and TCE Concentrations in EW-4c
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
10000
1000
100
10
1
Concentration (ug/L)
PCE
TCE
Jul-98
Jul-00
Jul-02
Jul-04
Jul-06
Jul-08
Jul-10
Jul-12
Jul-14
Sample Date

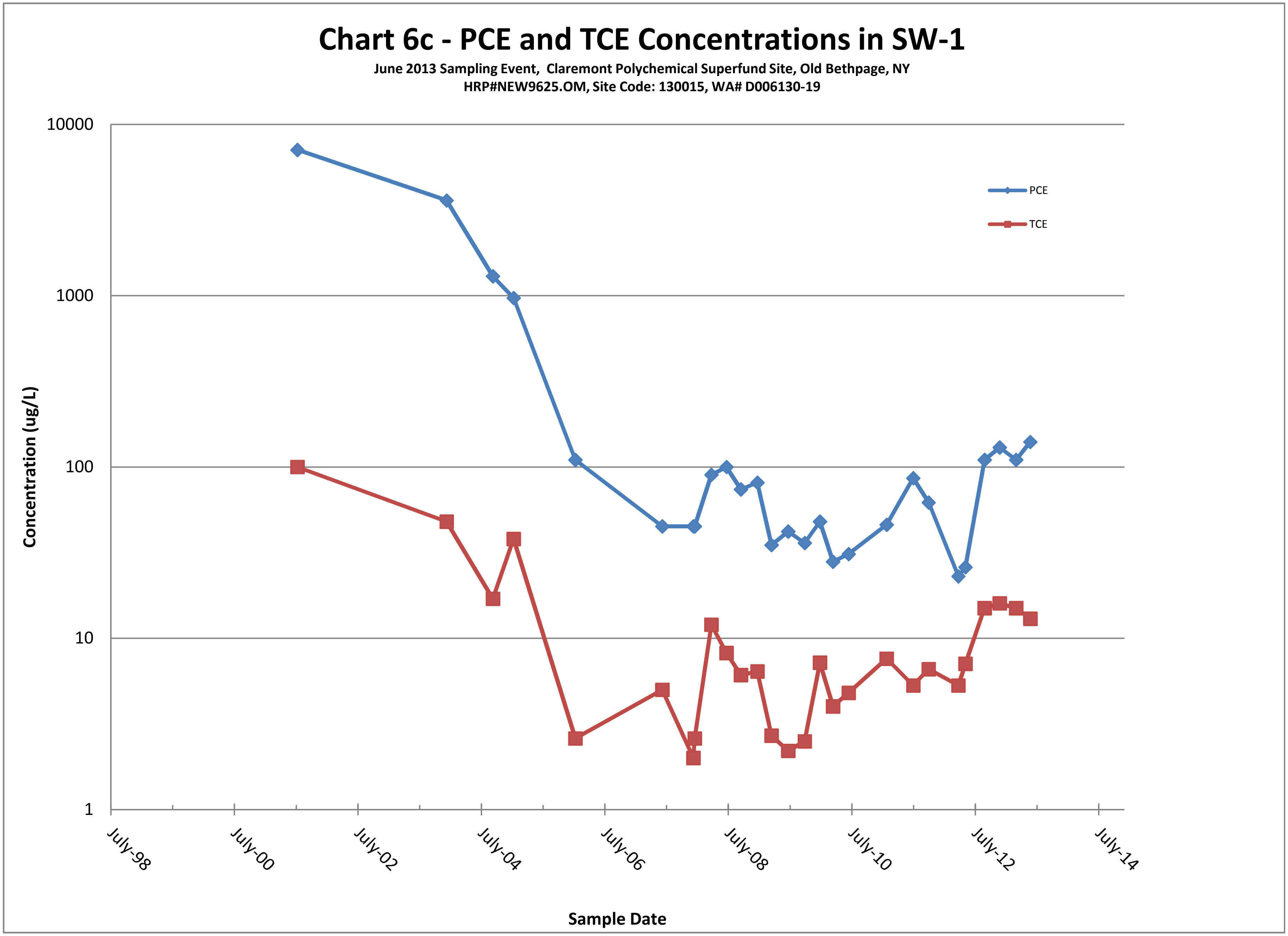


Chart 6c - PCE and TCE Concentrations in SW-1
June 2013 Sampling Event, Claremont Polychemical Superfund Site, Old Bethpage, NY
HRP#NEW9625.OM, Site Code: 130015, WA# D006130-19
10000
1000
100
10
1
Concentration (ug/L)
PCE
TCE
July-98
July-00
July-02
July-04
July-06
July-08
July-10
July-12
July-14
Sample Date

APPENDIX A

Groundwater Sample Log

WELL	TOC-PDB	Date Bag Installed	DTW at Install	Sample Date	Sample Time	DTW at sample	TOB Split	Notes:
BP3A	65	26-Mar	63.85	17-Jun	9:20	63.10	2VOA	
BP3B	225	26-Mar	65.00	17-Jun	9:25	65.05	2VOA	
BP3C	390	26-Mar	65.20	17-Jun	9:32	65.20	2VOA	
DW1	94	25-Mar	65.10	17-Jun	11:11	66.85		
DW2	100	25-Mar	70.85	18-Jun	10:36	72.25		
EW01A	72	26-Mar	64.00	18-Jun	8:23	65.65	2VOA	
EW01B	96	26-Mar	64.39	18-Jun	8:19	66.15	2VOA	
EW01C	122	26-Mar	64.44	18-Jun	8:29	65.30	2VOA	
EW02A	95	25-Mar	92.30	17-Jun	7:34	94.05	2VOA	
EW02B	124	25-Mar	92.30	17-Jun	7:47	94.25	2VOA	
EW02C	143	25-Mar	92.30	17-Jun	7:41	94.35	2VOA	
EW02D	295	25-Mar	92.73	17-Jun	7:51	94.10		tob voas
EW03A	100	25-Mar	96.42	17-Jun	8:18	97.25	2VOA	
EW03B	130	25-Mar	96.57	17-Jun	8:22	97.30	2VOA	
EW03C	159	25-Mar	96.46	17-Jun	8:26	97.20	2VOA	
EW04A	108	26-Mar	96.03	18-Jun	8:52	97.25		
EW04B	126	26-Mar	96.20	18-Jun	8:57	97.25		
EW04C	151	26-Mar	95.89	18-Jun	9:01	96.60		
EW04D	291	26-Mar	95.90	18-Jun	8:46	96.45		
EW05	170	25-Mar	70.40	18-Jun	10:28	71.75		
EW06A	66	25-Mar	63.00	17-Jun	13:52	64.05		
EW06C	165	25-Mar	63.35	17-Jun	13:46	64.50		
EW07C	198	25-Mar	86.95	17-Jun	14:19	87.85		
EW07D	279	25-Mar	87.05	17-Jun	14:05	87.80		
EW08D	239	25-Mar	64.70	18-Jun	10:16	65.45		
EW09D	251	25-Mar	70.80	17-Jun	14:32	71.65		
EW10C	146	26-Mar	94.65	18-Jun	9:18	94.85		
EW11D	277	26-Mar	100.56	18-Jun	9:52	101.20		
EW12D	216	26-Mar	99.20	18-Jun	10:04	100.15		
EW13D	346	26-Mar	95.21	18-Jun	9:27	99.75		
EW14D	191	26-Mar	41.55	17-Jun	8:56	41.65		tob voas
LF02	112	26-Mar	52.43	18-Jun	7:58	51.90	2VOA	
MW06D	187	25-Mar	95.90	17-Jun	10:31	96.65	2VOA	
MW08A	87	25-Mar	69.30	17-Jun	10:42	71.30	2VOA	
MW08B	157	25-Mar	68.85	17-Jun	10:44	70.35	2VOA	
MW08C	248	25-Mar	70.25	17-Jun	10:58	70.25	2VOA	
MW10B	175	25-Mar	97.60	17-Jun	8:06	98.50	2VOA	
MW10C	273	25-Mar	96.65	17-Jun	9:57	97.25	2VOA	
MW10D	347	25-Mar	97.15	17-Jun	10:03	98.05	2VOA	
SW1	68	25-Mar	65.15	17-Jun	11:15	66.90		
WT01	102	26-Mar	98.90	18-Jun	9:38	98.35		