

Letter of Transmittal

To: NYSDEC Date: January 28, 2010

File No.: 4445335 (13c)

Subject: Hyde Park Facility, Fall 2009 Annual Groundwater Monitoring Report
(NYSDEC Site No. 932036)

Attn: Mr. Michael Hinton

We are sending you ☒ Enclosed ☐ Under Separate Cover
the following items:

1. Summary Report for the Fall 2009 Groundwater Monitoring Event: Former Carborundum Company, Hyde Park Facility, Town of Niagara, New York, January 2010.

These are transmitted as checked below:

☐ For Your Information ☐ For Your Use ☐ Approved as Noted

☐ As Requested ☒ For Approval ☒ For Review

Remarks: This is the required 2009 annual monitoring report. The raw laboratory data package is available upon request. If you have any questions, please contact William B. Barber of the Atlantic Richfield Company at (216) 271-8038.

Signed:

Mark S. Raybuck

Mark S. Raybuck
Project Manager

Copy to: M. Forcucci, NYSDOH
Document Repository (Town of Niagara Town Hall)
William B. Barber, Atlantic Richfield Company
File (4453335 No. 13c)

Annual Summary Report

SUMMARY REPORT FOR THE FALL 2009 GROUNDWATER MONITORING EVENT

Former Carborundum Company, Hyde Park Facility
(Site No. 932036)

Town of Niagara, Niagara County, NY

SUBMITTED TO:



**NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION**

**DIVISION OF HAZARDOUS
WASTE REMEDIATION**

SUBMITTED BY:

Atlantic Richfield Company

A BP affiliated company

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PARSONS

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JANUARY 2010

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SECTION 1 INTRODUCTION

1.1 PURPOSE

This annual report summarizes the groundwater monitoring activities completed at the Former Carborundum Company Hyde Park Facility (Site) in the Town of Niagara, New York (Figure 1.1). Groundwater and sewer sampling were completed between October 26 and November 3, 2009. This report provides the data from the Fall 2009 sampling event and includes a comparison of the recent data against historic sample results.

This work was completed in accordance with the groundwater monitoring work plan (DE&S, 2000a) for Operable Unit 2 (OU2), approved by the New York State Department of Environmental Conservation (NYSDEC), and correspondence from NYSDEC dated September 28, 2005 (NYSDEC 2005), directing BP to continue groundwater monitoring at the Site on an annual basis.

This document describes the methodology and results from the groundwater monitoring event completed in the Fall of 2009 as a continuation of the OU2 groundwater monitoring program. The scope of work for the Fall 2009 groundwater monitoring event included:

- Collection of water level measurements from overburden and bedrock monitoring wells;
- Purging of overburden and bedrock monitoring wells and collecting field measurements of pH, temperature, specific conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO), total dissolved solids (TDS), and turbidity;
- Collection of groundwater samples from monitoring wells for volatile organic compound (VOC) analyses;
- Collection of groundwater samples from selected overburden and bedrock monitoring wells for analysis of natural attenuation parameters; and
- Collection of sewer water samples from the sanitary sewer beneath Rhode Island Avenue, for volatile organic compound (VOC) analyses.

Previous rounds of groundwater sampling indicated that the chemicals of concern (COCs) are VOCs that exceeded NYSDEC Class GA Water Quality Regulations/Standards in groundwater, and included the following:

- vinyl chloride
- cis- and trans-1,2-dichloroethene
- trichloroethene
- 1,1-dichloroethane
- benzene

Semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and pesticides were not detected in groundwater samples collected during previous investigations. Metals and inorganic compounds were analyzed during previous investigations and were not found to be COCs. These compounds are not analyzed as part of the ongoing groundwater monitoring program.

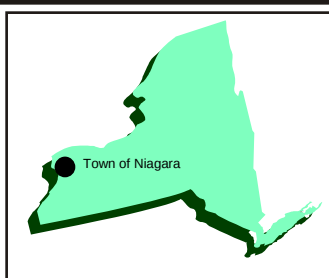
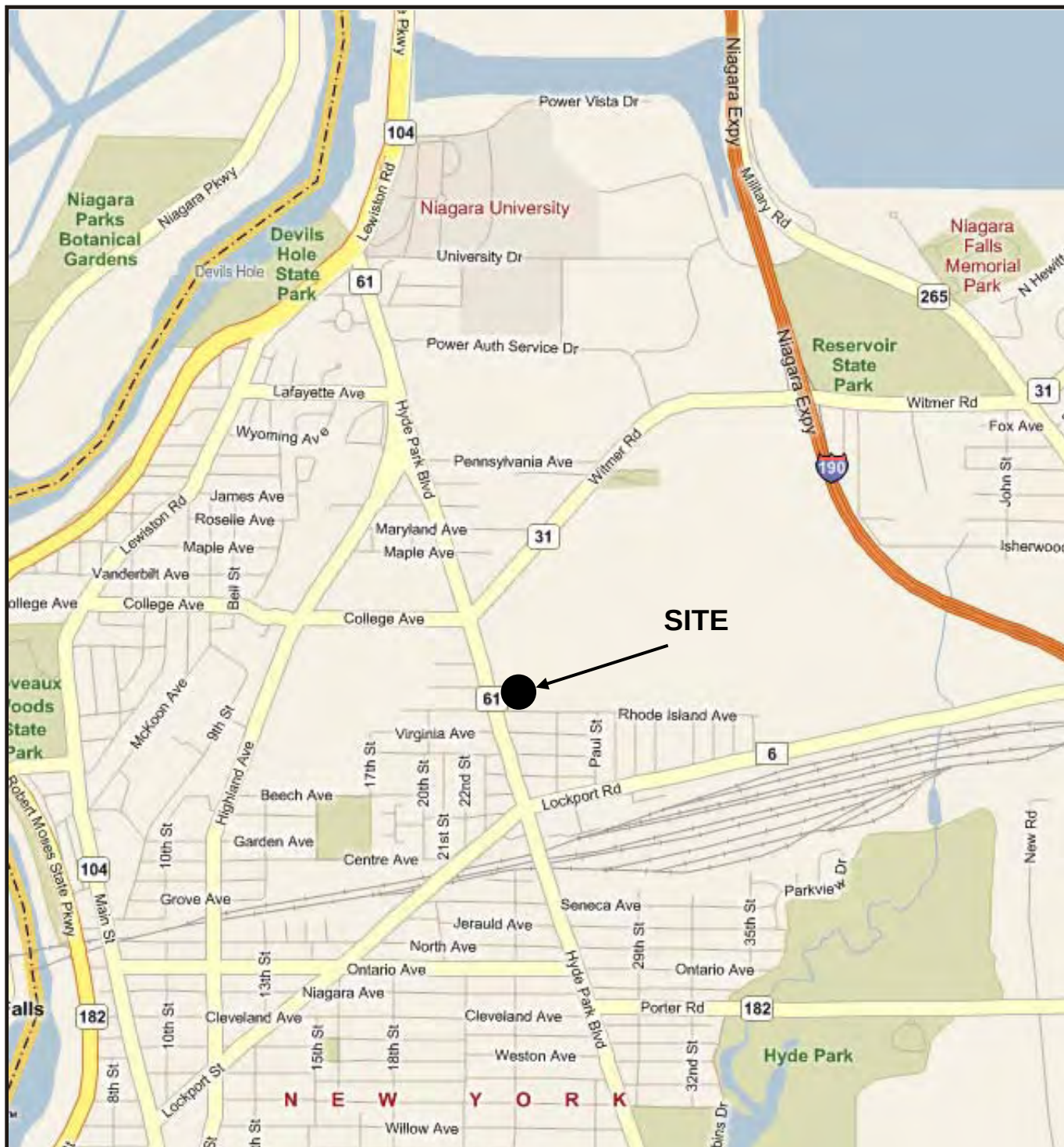
1.2 BACKGROUND

The Site is listed on the NYSDEC list of Inactive Hazardous Waste Disposal Sites, and is currently listed as a Class 2 site. A Site location map is provided as Figure 1.1, and a Site Plan is included as Figure 1.2.

Since 1993, a series of investigations has been completed to identify the extent of soil and groundwater contamination resulting from historical operations. In 2000, the NYSDEC completed a Record of Decision (ROD), which segmented the Site into the following three Operable Units:

- OU1 – On-site soil,
- OU2 – Groundwater beneath the Site, and
- OU3 – Off-site soil east of the Site.

The ROD identified the need for continued groundwater monitoring with semi-annual reporting for a minimum 5-year period. Following their review of the initial 5-year groundwater monitoring summary report (INTERA, 2005a), the NYSDEC requested that groundwater monitoring be continued for another five years, but on an annual basis. This annual groundwater monitoring is conducted on an alternating spring/fall schedule, and includes the collection of groundwater samples for the chemical analysis of VOCs and natural attenuation parameters.



New York



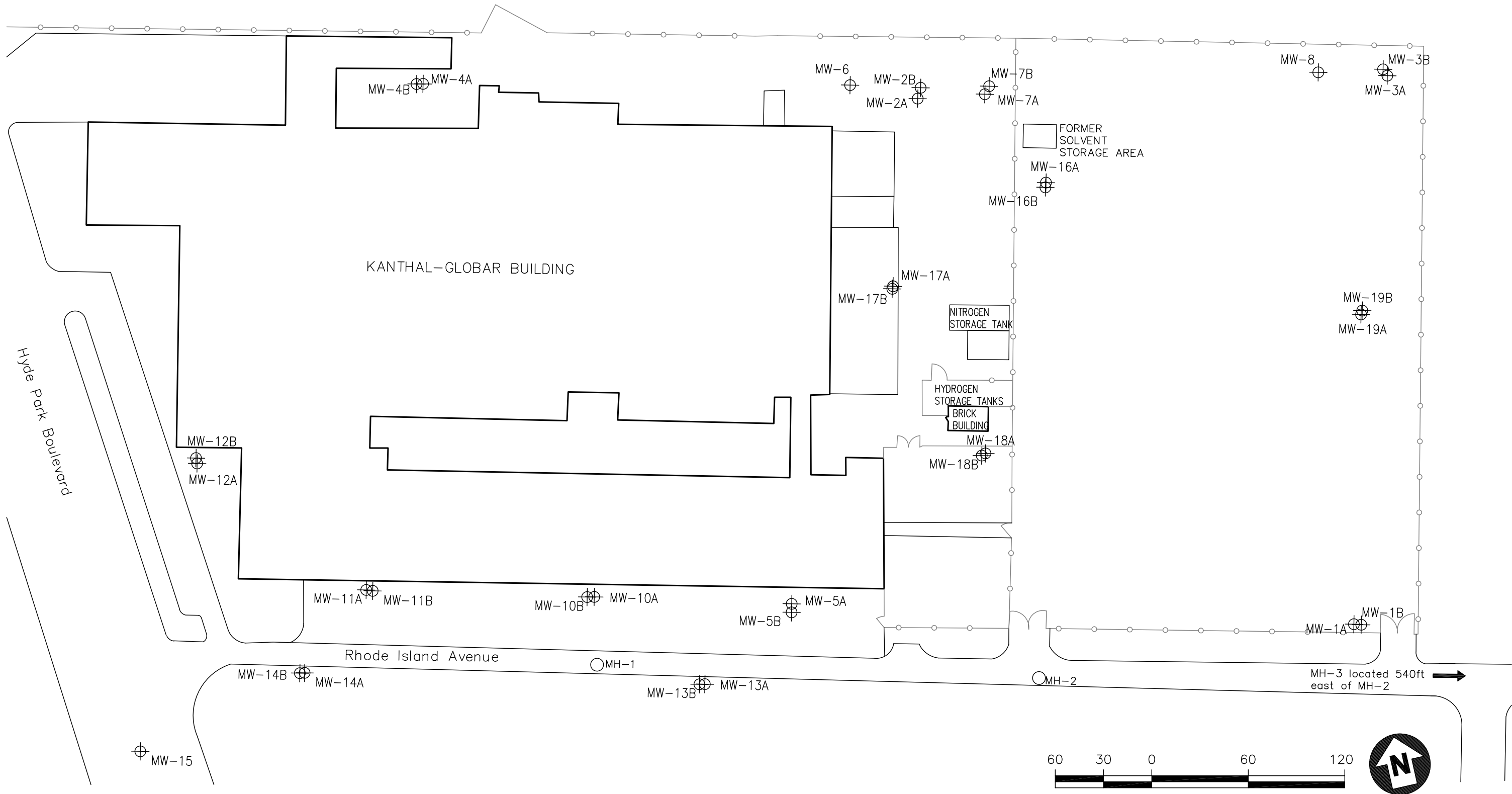
FIGURE 1.1

FORMER CARBORUNDUM CO. ELETRIC
PRODUCTS DIVISION
TOWN OF NIAGARA, NEW YORK

SITE LOCATION MAP

PARSONS

40 La Riviere Dr., Suite 350, Buffalo, NY 14202



HORIZONTAL DATUM: NAD83/96 NEW YORK STATE
 PLANE COORDINATE SYSTEM WEST ZONE.
 VERTICAL DATUM NAVD 88 DATUM

LEGEND:

- | | | |
|---|-------|--|
| ⊕ | MW-5A | MONITORING WELL LOCATION |
| ⊕ | MW-5B | (A=OVERBURDEN, B=BEDROCK) |
| ○ | MH-1 | MANHOLE / SANITARY SEWER SAMPLE LOCATION |

SOURCE: INTERA, 2006

FIGURE 1.2

FORMER CARBORUNDUM COMPANY
 ELECTRIC PRODUCTS DIVISION
 TOWN OF NIAGARA, NEW YORK

SITE PLAN

PARSONS

40 LA RIVIERE DRIVE, SUITE 350, BUFFALO, NEW YORK 14202 PHONE: 716-541-0730

SECTION 2

PROGRAM METHODOLOGY

On-site activities were conducted according to protocols outlined in the Project Safety Plan (Parsons, 2008).

The groundwater monitoring program included water level monitoring, groundwater sampling from wells, and submission of groundwater samples for analysis of VOCs. Samples from nine monitoring well couplets were also analyzed for natural attenuation parameters. Sewer water sampling was conducted for analysis of VOCs. Quality assurance/quality control (QA/QC) samples, including matrix spike/matrix spike duplicates, field duplicates, and trip blanks, were also submitted for analysis.

In September 2008, an *in situ* bioremediation pilot test was initiated, which featured the addition of vegetable oil-based substrate into the overburden groundwater. In November 2009, a similar injection was conducted in bedrock groundwater in addition to a second injection in the overburden. These data were presented in a separate deliverable to the NYSDEC (Parsons, 2009).

The samples discussed herein were collected after the first overburden injection and prior to the bedrock vegetable oil application and the second overburden application completed in November 2009.

2.1 WATER LEVEL MONITORING

Water level monitoring was conducted on October 26, 2009. Water levels were measured relative to the top of the inner well casing using an electronic water level tape accurate to 0.01 ft. The depth to water was measured in each well from a surveyed point on the casing. The water levels were then converted to elevations presented as feet above mean sea level (ft AMSL, NAVD 88 datum). The groundwater elevations were then used to construct groundwater flow contours, and to calculate vertical and horizontal hydraulic gradients.

2.2 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from monitoring wells in the network that was established in October 2000 (MW-1 through MW-8 and MW-10 through MW-19). The locations of the monitoring wells are shown on Figure 1.2. Wells were sampled following the methodology outlined in the groundwater monitoring work plan (DE&S, 2000a). Associated QA/QC samples were collected, including two field duplicates, two matrix spike/matrix spike duplicate samples and six trip blanks. A list of wells, dates sampled, sample IDs, and purge volumes is provided in Table 2.1. A copy of the groundwater sampling logs is provided in Appendix D.

During purging, groundwater was monitored for pH, specific conductivity, turbidity, DO, temperature, TDS, and ORP. An aliquot of the groundwater sample was tested in the field for the presence of ferrous iron.

Following collection, the samples were packed in ice and shipped via same-day or overnight delivery to an approved laboratory in accordance with chain-of-custody procedures. Groundwater sample analyses were performed by Columbia Analytical Services in Rochester, New York. Table 2.2 provides a summary of analytical specifications, including analysis type, sample containers, analytical methods, and other information.

In addition to monitoring concentrations of COCs, several wells were selected for the monitoring of natural attenuation evaluation parameters. The nine well clusters chosen for these additional analyses are located along the groundwater flow path in upgradient, cross-gradient, and downgradient locations and in source areas, as suggested in the *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (USEPA, 1998). The well couplets selected for natural attenuation monitoring included MW-1, MW-3, MW-4, MW-5, MW-10, MW-11, MW-14, MW-16, MW-17, and MW-18.

Purge water and decontamination water were contained and staged in 55-gallon drums for disposal. Following receipt of sample results, the water was disposed of in the sanitary sewer under a permit with the Niagara Falls Water Board.

2.3 SEWER WATER SAMPLING AND ANALYSIS

Sewer water sampling was conducted from the Town of Niagara sanitary sewer located south of the Site beneath Rhode Island Avenue. One sewer water sample was collected from a manhole in Rhode Island Avenue east of Panama Street, two blocks east of the eastern site boundary (MH-3). This served as an “upgradient” sampling location. One sewer water sample was also collected from each of two manholes, located immediately south of the Site on Rhode Island Avenue. One was collected from the manhole located closest to Hyde Park Boulevard (MH-1). A second sample was collected from the manhole east of MH-1 (MH-2). Sewer sampling locations are indicated in Figure 1.2.

The sewer water samples were collected by removing manhole covers and lowering a clean sampling device attached to the end of a telescopic pole, into flowing wastewater in the sewer. Grab samples were then transferred to laboratory-prepared sample containers. Three sewer samples were submitted to the laboratory for VOC analysis.

Table 2.1
Summary of Groundwater Sampling
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well ID	Date Sampled	Sample ID	Volume Purged (gallons)
MW-1A	27-Oct-09	MW-1A	2.4
MW-1B	27-Oct-09	MW-1B	2.0
MW-2A	28-Oct-09	MW-2A	2.8
MW-2B	28-Oct-09	MW-2B	2.0
MW-3A	27-Oct-09	MW-3A	1.5
MW-3B	27-Oct-09	MW-3B	2.8
MW-4A	3-Nov-09	MW-4A	6
MW-4B	3-Nov-09	MW-4B	1.5
MW-5A	29-Oct-09	MW-5A	2.4
MW-5B	29-Oct-09	MW-5B	2.4
MW-6	30-Oct-09	MW-6, MW-60	3.0
MW-7A	30-Oct-09	MW-7A	2.0
MW-7B	30-Oct-09	MW-7B, MS, MSD	2.0
MW-8	2-Nov-09	MW-8	1.8
MW-10A	29-Oct-09	MW-10A	2.4
MW-10B	29-Oct-09	MW-10B	2.8
MW-11A	30-Oct-09	MW-11A	2.1
MW-11B	30-Oct-09	MW-11B	2.8
MW-12A	2-Nov-09	MW-12A	2.1
MW-12B	2-Nov-09	MW-12B	2.0
MW-13A	29-Oct-09	MW-13A	1.8
MW-13B	29-Oct-09	MW-13B	2.0
MW-14A	29-Oct-09	MW-14A	1 (dry)
MW-14B	29-Oct-09	MW-14B	1.25
MW-15	3-Nov-09	MW-15	1.5
MW-16A	27-Oct-09	MW-16A	0.75 (dry)
MW-16B	27-Oct-09	MW-16B	2.25
MW-17A	28-Oct-09	MW-17A, MW-171	2.0
MW-17B	28-Oct-09	MW-17B, MS, MSD	6.0
MW-18A	27-Oct-09	MW-18A	1.8
MW-18B	27-Oct-09	MW-18B	2.4
MW-19A	2-Nov-09	MW-19A	2.0
MW-19B	2-Nov-09	MW-19B	2.25
MH-1	28-Oct-09	MH-1	
MH-2	28-Oct-09	MH-2	
MH-3	28-Oct-09	MH-3	

Table 2.2
Summary of Analytical Specifications
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Sample Type	Container Type	Sample Volume	Preservation Method	Max. Holding Time	Analytical Method
Chemicals of Concern (COCs)					
VOCs	40mL glass vial with septum top	4x40 mL	Hydrochloric acid, Cool 4oC	7days	SW846 Method 8260B
Natural Attenuation Parameters					
Methane, Ethene, Ethane, Propane	40mL glass vial with septum top	2x40 mL	Hydrochloric acid, Cool 4oC	7 days	USEPA RSK175
TOC	40mL glass vial with septum top	2x40 mL	Hydrochloric acid, Cool 4oC	7 days	USEPA 415.1
BOD	1L plastic	1L	None	48 hrs	USEPA 405.1
COD	250 mL plastic	250 mL	Sulfuric acid	28 days	USEPA 410.1
Total Iron	250 mL plastic	250 mL	Nitric acid	6 months	USEPA 6010B
Chloride	500 mL plastic	500 mL	None	28 days	Standard Method 325.2
Nitrate	-	-	-	48 hours	USEPA 353.2
Nitrite	-	-	-	28 days	USEPA 354.1
Sulfate	-	-	-	28 days	USEPA 375.4
Sulfide	250 mL plastic	250 mL	Sodium hydroxide and zinc acetate	7 days	USEPA 376.2

Notes:

- = This parameter was analyzed from the above sample container

SECTION 3

GROUNDWATER MONITORING PROGRAM SUMMARY

3.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTIONS

A summary of the groundwater elevations for water level measurements collected during groundwater sampling events completed over the period from August 1992 through November 2009 is provided in Table 3.1. Table 3.1 also includes well location and top of casing and ground surface elevations for the monitoring wells.

Groundwater in the overburden monitoring wells was measured at depths between 4.01 and 11.33 feet below ground surface (bgs). An overburden groundwater contour map was developed based on the October 26, 2009 water levels (Figure 3.1). The overburden groundwater flow direction is to the southwest, towards Hyde Park Boulevard. The overburden groundwater gradient across the Site is approximately 0.008 feet/foot. The direction and gradient are consistent with historical data.

Groundwater in the bedrock monitoring wells was measured at depths between 4.07 and 12.37 feet bgs. A bedrock groundwater potentiometric surface contour map was developed based on the October 26, 2009 water levels (Figure 3.2). Consistent with historical observations of groundwater flow, the bedrock groundwater flow direction is generally west-southwest towards Hyde Park Boulevard. The bedrock groundwater gradient across the Site is approximately 0.002 feet/foot, smaller (shallower) compared to the April 2008 gradient, but similar to October 2007.

Table 3.2 lists the vertical hydraulic gradients calculated for the groundwater levels measured on October 26, 2009. Gradients are upward in the southern and central parts of the site and downward along the northern end of the site.

3.2 GROUNDWATER SAMPLING RESULTS

Field measurements collected for the Fall 2009 sampling event are provided in Table 3.3. Summaries of COCs and natural attenuation parameter results are included in Table 3.4. The complete analytical data results are included as Appendix A, and Appendix B contains a summary of the COC and natural attenuation parameter results from 1999 to 2009.

3.2.1 VOC Results

Groundwater samples from 33 groundwater monitoring wells (15 overburden, 18 bedrock) were collected and analyzed for the presence of VOCs.

For reporting purposes, the analytical results have been compared to the Class GA Groundwater Standards and Guidance provided in the NYSDEC Division of Water

Technical and Operational Guidance Series (TOGS) 1.1.1: Ambient Groundwater Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, 1998). Results are summarized on Table 3.4.

3.2.2 Overburden Results

Figure 3.3 shows a summary of the overburden well COC analytical results from the Fall 2009 sampling event, and from several historical events. The COC results for the 15 overburden groundwater samples were generally consistent with previous rounds of monitoring and long term trends. COCs with concentrations exceeding the Class GA criteria were detected in 11 of the overburden well samples. No COCs were detected in samples from wells MW-1A, MW-3A, MW-11A, and MW-13A. The highest COC concentrations were detected in the samples from wells MW-7A located near the former solvent storage area; and MW-10A (DCE), located south of the Kanthal-Globar building. However, concentrations of TCE and DCE in MW-7A are less than historical levels. MW-7A is in the area of the vegetable oil substrate pilot test injection (September 2008). TCE at MW-7A was 1.8 µg/L, which is appreciably lower than typical values in the last 5 years (up to 730 µg/L). Concentrations across the site continued to decrease, or remain steady in the overburden. TCE was sporadically detected in the overburden (4 of 14 wells) at concentrations that range between 1.8 and 130 µg/L.

Figure 3.4 shows a summary of the bedrock well COC analytical results from the Fall 2009 sampling and several historical sampling events. The COC results for the 18 bedrock groundwater samples were generally consistent with historical concentrations and decreasing COC concentration trends. COC concentrations exceeding the Class GA criteria were detected in 16 of the bedrock groundwater samples. Of the wells sampled, the higher concentrations of COCs were observed in MW-16B and MW-10B (DCE at 511 µg/L and 374 µg/L, respectively). TCE was non-detect in all but well MW-17B (3.1 µg/L).

3.2.3 Attenuation Monitoring Results

As part of the ongoing groundwater monitoring program, natural attenuation parameters were sampled during each monitoring event. The results for 2009 were generally consistent with previous monitoring events, with the exception of an increase in ethene at wells MW-7A, and MW-17B (51 µg/L, 14 µg/L, respectively). Ethene is the final degradation product of TCE. MW-7A is in the area of the vegetable oil substrate pilot test injection (Fall 2008), and MW-17B is downgradient of this area. Site-wide long-term changes in concentrations suggest that natural attenuation is an ongoing, active process. More detailed information regarding the attenuation monitoring and pilot test was presented in the July 30, 2009 pilot test report (Parsons, 2009).

3.3 SEWER WATER SAMPLING RESULTS

Cis-1,2-dichloroethene was detected in all three sewer samples collected in the Fall 2009 event, with concentrations ranging from 1.7 µg/L to 2.1 µg/L. Each result was

qualified with a J following data validation, indicating that the result is estimated, below the method detection limit. Estimated concentrations of TCE were also detected in each of the three sewer samples (1.5 to 1.8 µg/L). Results were comparable to historical data.

3.4 DATA VALIDATION

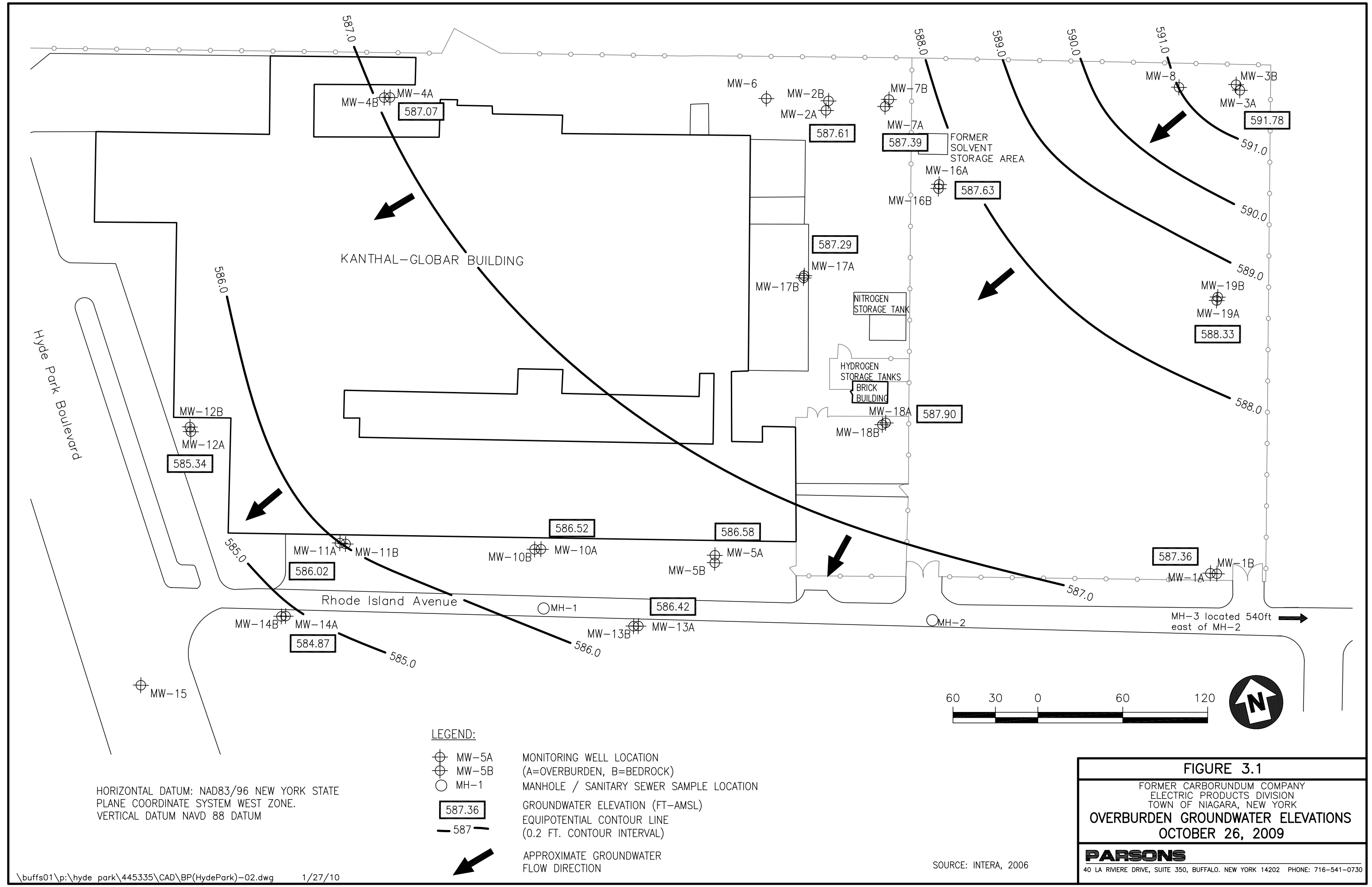
Groundwater samples were collected from the Hyde Park Site in the Town of Niagara, New York from October 26, 2009 through November 3, 2009. Analytical results from these samples were reviewed by Parsons for usability with respect to the following requirements:

- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs).

The analytical laboratory for this project was Lancaster Laboratories. This laboratory is approved to conduct project analyses through the New York Department of Health (NYDOH) Environmental Laboratory Approval Program (ELAP).

The data submitted by the laboratory have been reviewed and validated. The analytical data were found to be acceptable in terms of deliverable completeness, accuracy, precision, representativeness, completeness and comparability. Data validation was performed for all samples in accordance with the most current editions of the USEPA Region II SOPs and the NYSDEC ASP for organic and inorganic data review.

A copy of the data usability summary report (DUSR) for groundwater samples is included in Appendix C.



HORIZONTAL DATUM: NAD83/96 NEW YORK STATE
PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

- LEGEND:**
- MW-5A
 - MW-5B
 - MH-1
 - 587.36
 - 587
 - MONITORING WELL LOCATION
(A=OVERBURDEN, B=BEDROCK)
 - MANHOLE / SANITARY SEWER SAMPLE LOCATION
 - GROUNDWATER ELEVATION (FT-AMSL)
 - EQUIPOTENTIAL CONTOUR LINE
(0.2 FT. CONTOUR INTERVAL)
 - APPROXIMATE GROUNDWATER
FLOW DIRECTION



FIGURE 3.1

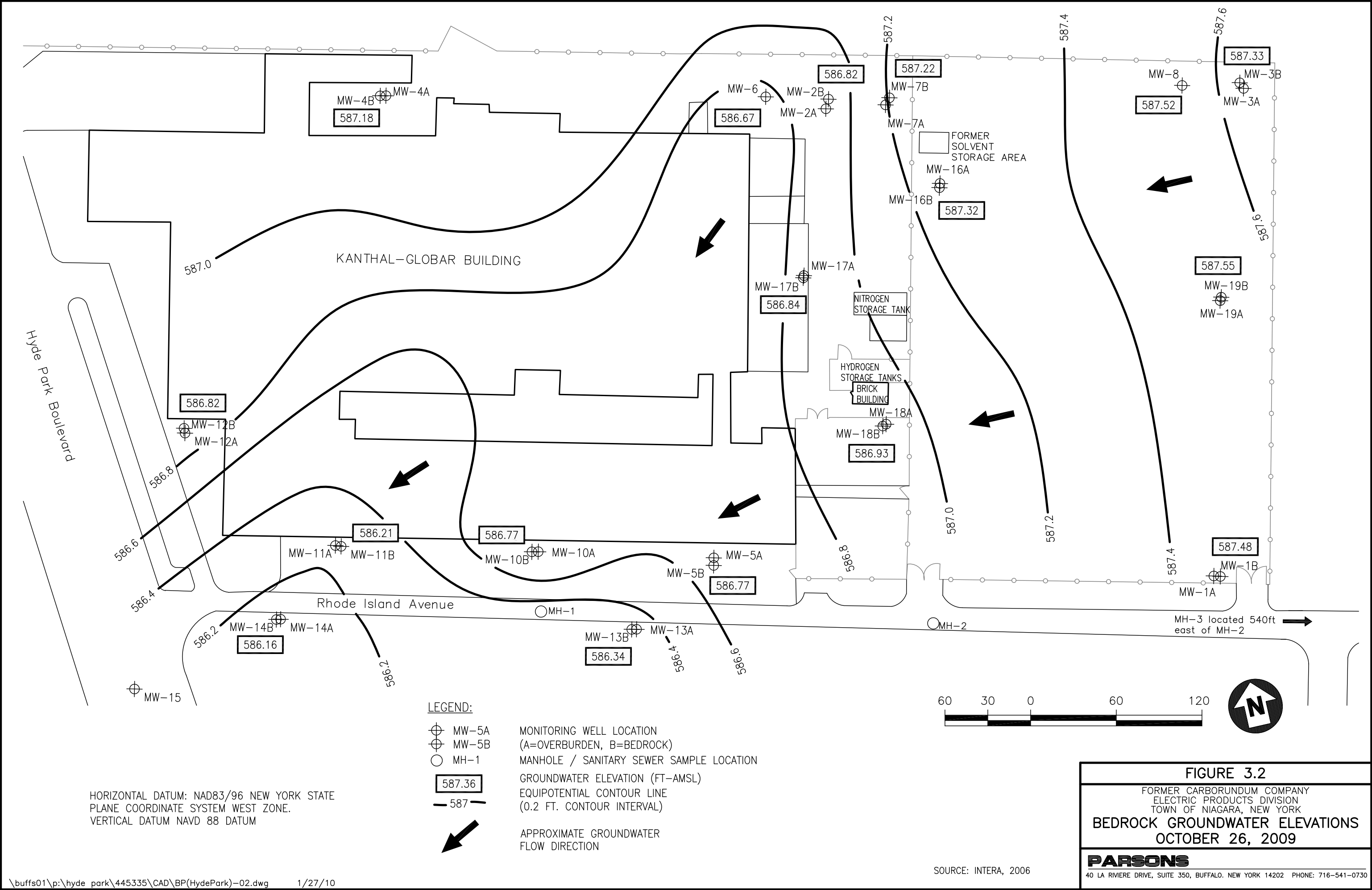
FORMER CARBORUNDUM COMPANY
ELECTRIC PRODUCTS DIVISION
TOWN OF NIAGARA, NEW YORK

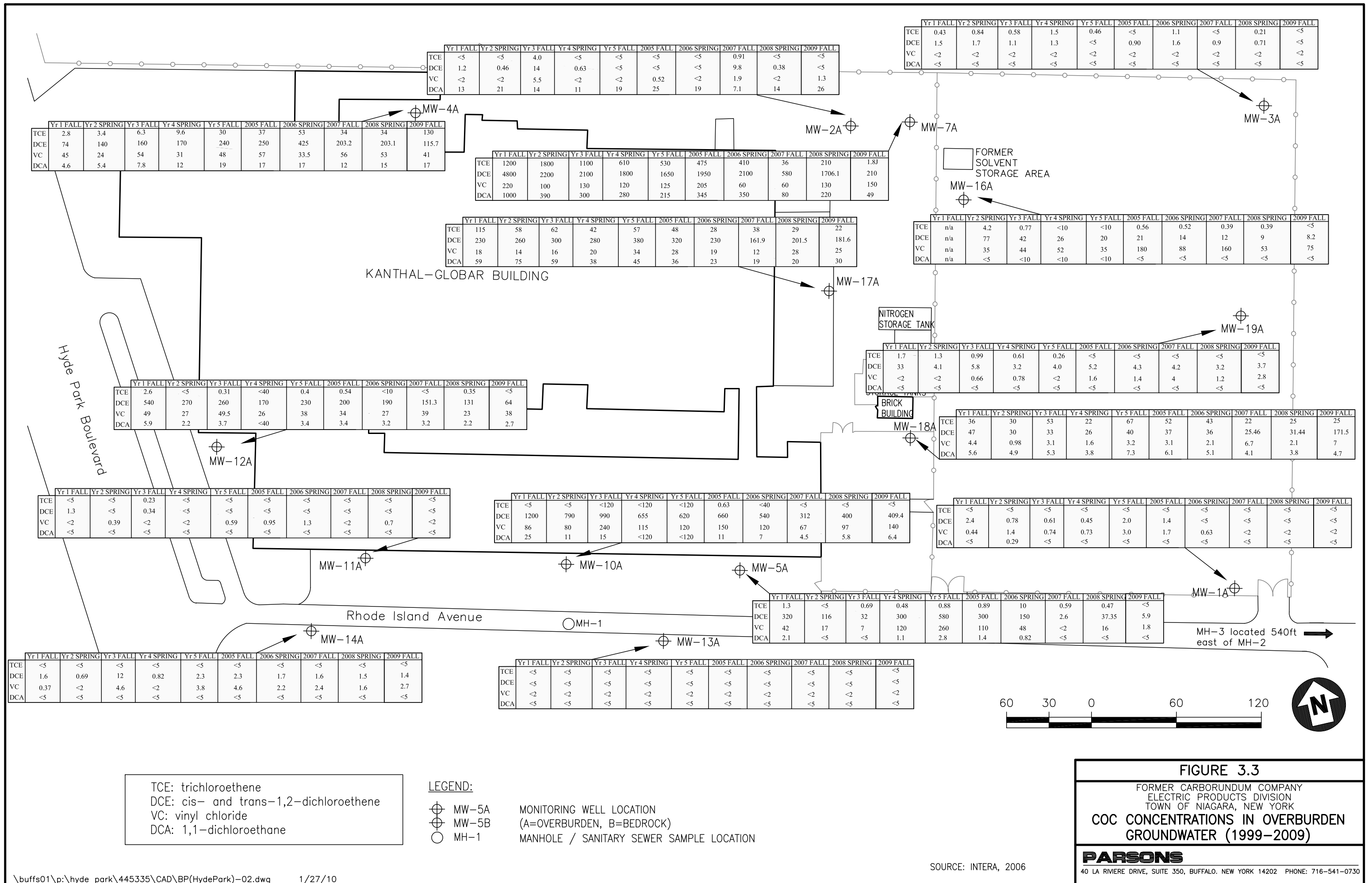
OVERBURDEN GROUNDWATER ELEVATIONS
OCTOBER 26, 2009

PARSONS

40 LA RIVIERE DRIVE, SUITE 350, BUFFALO, NEW YORK 14202 PHONE: 716-541-0730

SOURCE: INTERA, 2006





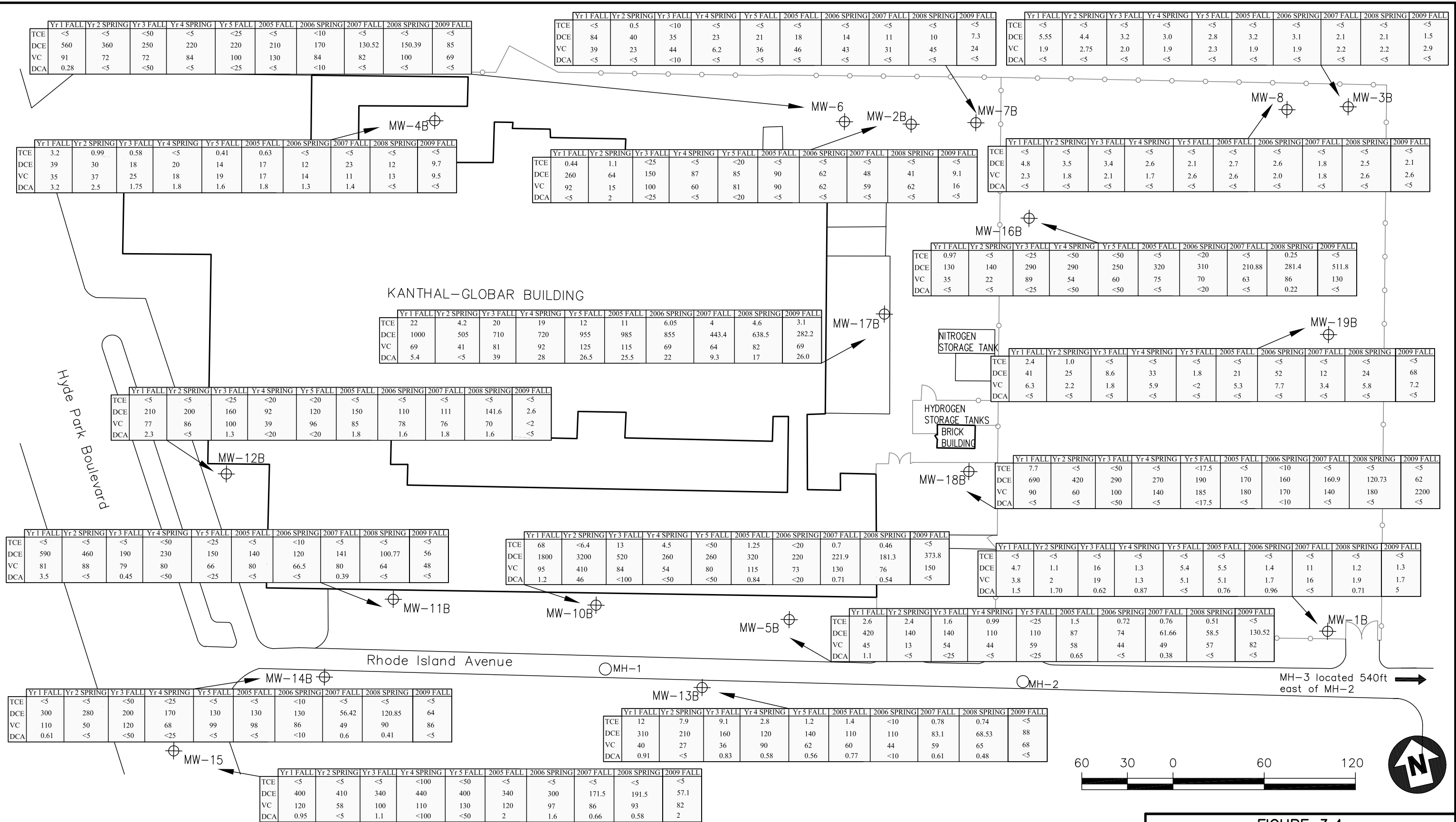


FIGURE 3.4
FORMER CARBORUNDUM COMPANY
ELECTRIC PRODUCTS DIVISION
TOWN OF NIAGARA, NEW YORK
**COC CONCENTRATIONS IN BEDROCK
GROUNDWATER (1999-2009)**
PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO, NEW YORK 14202 PHONE: 716-541-0730

Table 3.1
Groundwater Elevation Summary (1999-2009)
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well No.	Easting Coordinates (ft)	Northing Coordinates (ft)	Elevation (ft. amsl)		Static Water Level Elevation (ft. amsl)								
			Ground Surface	Top of Monitor Well Casing	24-Aug-92	24-May-96	17-Nov-97	Year 1		Year 2		Year 3	
								18-Oct-99	8-Nov-00	11-May-01	5-Nov-01	13-May-02	28-Oct-02
MW-1A	2955.6087	5008.2713	595.48	597.56	592.62	590.48	587.89	586.26	585.95	588.35	586.70	589.42	585.81
MW-1B	2960.1041	5008.1236	595.44	597.64	592.64	590.45	587.73	586.52	585.87	588.34	586.76	589.50	585.80
MW-2A	2680.1182	5331.3852	593.70	595.73	593.25	591.13	588.96	587.37	586.45	589.43	587.87	590.55	586.58
MW-2B	2681.7002	5337.9356	593.60	595.80	591.92	589.72	586.89	586.03	585.48	587.72	586.38	588.75	585.43
MW-3A	2969.9762	5353.9117	597.90	599.94	597.37	595.49	594.30	592.20	592.09	594.48	589.75	595.81	587.54
MW-3B	2972.3807	5348.8355	597.70	599.70	592.63	590.47	587.77	586.64	585.80	588.18	586.69	589.30	585.69
MW-4A	2372.5988	5336.5134	591.93	591.60	nm	nm	586.79	585.98	585.24	587.52	586.32	588.55	585.10
MW-4B	2368.6508	5336.5000	591.90	591.49	nm	nm	586.80	585.95	585.23	587.55	586.29	588.54	585.35
MW-5A	2605.9294	5016.5936	596.14	597.91	591.18	589.11	586.60	585.79	585.20	587.31	586.00	588.35	585.21
MW-5B	2605.7558	5011.3162	596.03	597.79	591.48	589.55	586.81	585.93	585.25	587.54	586.24	588.57	585.32
MW-6	2638.3679	5339.2224	593.10	595.51	592.26	589.67	586.85	586.03	585.44	587.67	586.36	588.69	585.40
MW-7A	2724.6499	5332.6172	593.90	596.59	593.62	590.94	588.68	587.33	586.45	589.21	587.72	590.27	586.35
MW-7B	2725.0999	5337.8887	593.90	596.66	592.59	589.93	587.26	586.40	585.63	587.93	586.59	589.11	585.64
MW-8	2928.7692	5350.8907	597.50	599.63	592.51	590.38	587.77	586.65	585.94	588.36	586.90	589.52	585.92
MW-10A	2483.0258	5019.0908	594.75	596.87	591.17	588.90	586.51	585.71	585.15	587.20	585.93	588.22	585.16
MW-10B	2478.5765	5019.1388	594.67	596.71	591.71	589.50	586.79	585.93	585.19	587.49	586.21	588.54	585.29
MW-11A	2341.0812	5021.6589	593.53	595.48	589.97	587.85	585.98	585.32	584.85	586.62	585.51	587.61	584.88
MW-11B	2345.1520	5021.2462	593.56	595.57	591.53	589.36	586.41	585.55	585.06	587.03	585.73	587.83	584.91
MW-12A	2235.0446	5098.8980	591.30	590.79	586.33	586.84	585.35	584.82	584.38	585.77	584.90	586.59	584.39
MW-12B	2234.5233	5102.1429	591.30	590.89	588.85	589.25	586.65	585.93	585.21	587.53	586.21	588.56	585.35
MW-13A	2552.3923	4965.9516	595.60	595.18	588.56	589.04	586.51	585.70	585.16	587.30	585.25	588.16	585.17
MW-13B	2549.3819	4965.8826	595.40	594.73	588.62	589.50	586.78	585.90	585.22	587.50	586.22	588.56	585.28
MW-14A	2303.8879	4969.9839	593.42	592.97	585.55	585.87	585.60	585.30	582.91	585.95	585.47	587.56	584.83
MW-14B	2301.0559	4969.7638	593.30	592.85	588.35	589.30	586.72	585.83	585.04	587.08	585.83	587.96	584.94
MW-15	2202.4948	4920.3288	592.01	591.44	nm	nm	586.22	585.57	585.02	587.13	585.86	588.13	585.04
MW-16A	2760.3762	5280.4861	592.60	591.64	nm	nm	nm	nm	nm	587.40	586.11	587.80	586.23
MW-16B	2760.3365	5277.4639	592.60	592.38	nm	nm	nm	nm	585.70	nm	586.70	nm	585.82
MW-17A	2669.1049	5212.5469	593.45	593.13	nm	nm	nm	nm	586.26	588.27	586.81	589.29	586.02
MW-17B	2668.7040	5210.7102	593.44	592.92	nm	nm	nm	nm	585.58	587.63	586.29	588.65	585.39
MW-18A	2725.1577	5111.5508	594.00	593.78	nm	nm	nm	nm	585.76	587.91	586.94	589.25	586.17
MW-18B	2722.9546	5110.1467	594.00	593.43	nm	nm	nm	nm	585.39	587.67	586.34	588.71	585.42
MW-19A	2957.4556	5200.7298	595.44	594.95	nm	nm	nm	nm	586.38	589.16	582.97	590.36	586.09
MW-19B	2958.1664	5203.1593	595.43	594.65	nm	nm	nm	nm	585.91	588.33	586.87	589.50	585.89
MH-1	2485.3313	4977.0431	na	595.29	nm	nm	nm	nm	583.31	583.35	582.86	nm	583.31
MH-2	2760.1474	4972.2985	na	596.51	nm	nm	nm	nm	583.88	583.91	583.85	nm	583.71
MH-3	3300.8154	4964.0866	na	596.79	nm	nm	nm	nm	585.61	585.73	nm	nm	583.99

Notes: ft amsl - feet above mean sea level
nm - water level not measured

Table 3.1
Groundwater Elevation Summary (1999-2009)
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well No.	Easting Coordinates (ft)	Northing Coordinates (ft)	Elevation (ft. amsl)		Static Water Level Elevation (ft. amsl)															
			Ground Surface	Top of Monitor Well Casing	Year 4		Year 5		Fall 2005	Spring 2006	Fall 2007		Spring 2008		Fall 2009					
					20-May-03	4-Nov-03	10-May-04	25-Oct-04	31-Oct-05	15-May-05	DTW	29-Oct-07	DTW	21-Apr-08	DTW	26-Oct-09				
MW-1A	2955.6087	5008.2713	595.48	597.56	589.57	587.62	589.92	587.52	588.85	588.77	12.62	584.94	8.61	588.95	10.20	587.36				
MW-1B	2960.1041	5008.1236	595.44	597.64	589.59	587.63	589.96	587.53	588.85	588.78	12.70	584.94	8.62	589.02	10.16	587.48				
MW-2A	2680.1182	5331.3852	593.70	595.73	590.43	588.91	590.84	588.25	589.75	589.84	10.68	585.05	6.05	589.68	8.12	587.61				
MW-2B	2681.7002	5337.9356	593.60	595.80	588.80	586.94	588.99	586.94	588.11	587.90	11.26	584.54	7.82	587.98	8.98	586.82				
MW-3A	2969.9762	5353.9117	597.90	599.94	595.48	593.41	596.20	592.62	593.95	595.11	14.57	585.37	5.06	594.88	8.16	591.78				
MW-3B	2972.3807	5348.8355	597.70	599.70	589.33	587.40	589.73	587.46	588.74	588.74	14.68	585.02	10.73	588.97	12.37	587.33				
MW-4A	2372.5988	5336.5134	591.93	591.60	588.65	586.48	588.84	586.83	587.73	587.65	7.22	584.38	3.98	587.62	4.53	587.07				
MW-4B	2368.6508	5336.5000	591.90	591.49	588.64	586.83	588.85	586.81	587.90	587.77	7.02	584.47	4.55	586.94	4.31	587.18				
MW-5A	2605.9294	5016.5936	596.14	597.91	588.38	586.82	588.66	586.49	587.76	587.57	13.50	584.41	10.28	587.63	11.33	586.58				
MW-5B	2605.7558	5011.3162	596.03	597.79	588.64	586.83	588.85	586.77	587.95	587.73	13.35	584.44	9.92	587.87	11.02	586.77				
MW-6	2638.3679	5339.2224	593.10	595.51	588.75	586.91	588.95	586.90	588.06	587.84	17.02	578.49	7.55	587.96	8.84	586.67				
MW-7A	2724.6499	5332.6172	593.90	596.59	590.24	588.62	590.59	588.17	589.59	589.55	11.61	584.98	6.95	589.64	9.20	587.39				
MW-7B	2725.0999	5337.8887	593.90	596.66	589.13	587.24	589.41	587.29	588.52	588.39	11.80	584.86	8.10	588.56	9.44	587.22				
MW-8	2928.7692	5350.8907	597.50	599.63	589.62	587.69	589.93	587.69	588.97	588.85	14.50	585.13	10.56	589.07	12.11	587.52				
MW-10A	2483.0258	5019.0908	594.75	596.87	588.26	586.80	588.52	586.47	587.67	587.45	12.50	584.37	9.36	587.51	10.35	586.52				
MW-10B	2478.5765	5019.1388	594.67	596.71	588.61	586.83	588.82	586.74	587.94	587.74	12.28	584.43	8.87	587.84	9.94	586.77				
MW-11A	2341.0812	5021.6589	593.53	595.48	587.67	586.33	587.87	586.06	587.18	586.85	11.34	584.14	8.58	586.90	9.46	586.02				
MW-11B	2345.1520	5021.2462	593.56	595.57	587.83	586.42	588.01	586.15	587.30	586.94	11.52	584.05	8.42	587.15	9.36	586.21				
MW-12A	2235.0446	5098.8980	591.30	590.79	586.79	585.64	586.87	585.51	586.48	586.00	7.03	583.76	4.85	585.94	5.45	585.34				
MW-12B	2234.5233	5102.1429	591.30	590.89	588.64	586.82	588.82	586.76	587.97	587.74	6.44	584.45	2.95	587.94	4.07	586.82				
MW-13A	2552.3923	4965.9516	595.60	595.18	588.32	586.91	588.62	586.65	587.52	587.55	7.15	588.03	7.35	587.83	8.76	586.42				
MW-13B	2549.3819	4965.8826	595.40	594.73	588.63	586.99	588.82	586.72	587.94	587.71	10.42	584.31	6.87	587.86	8.39	586.34				
MW-14A	2303.8879	4969.9839	593.42	592.97	587.43	586.28	586.19	585.29	586.12	586.46	9.25	583.72	6.81	586.16	8.10	584.87				
MW-14B	2301.0559	4969.7638	593.30	592.85	587.91	586.48	588.13	586.19	587.37	587.08	8.75	584.10	5.72	587.13	6.69	586.16				
MW-15	2202.4948	4920.3288	592.01	591.44	588.18	586.68	588.44	586.35	587.61	587.45	7.20	584.24	4.02	587.42	4.61	586.83				
MW-16A	2760.3762	5280.4861	592.60	591.64	587.60	587.28	588.26	588.13	587.72	587.60	4.60	587.04	5.10	586.54	4.01	587.63				
MW-16B	2760.3365	5277.4639	592.60	592.38	589.36	587.43	589.64	587.49	588.76	588.64	7.40	584.98	4.48	587.90	5.06	587.32				
MW-17A	2669.1049	5212.5469	593.45	593.13	589.32	587.76	589.60	587.47	588.80	588.71	8.00	585.13	4.61	588.52	5.84	587.29				
MW-17B	2668.7040	5210.7102	593.44	592.92	588.70	586.90	588.93	586.83	588.08	587.78	8.52	584.40	5.00	587.92	6.08	586.84				
MW-18A	2725.1577	5111.5508	594.00	593.78	589.07	587.94	589.58	587.69	588.69	588.68	7.70	586.08	6.35	587.43	5.88	587.90				
MW-18B	2722.9546	5110.1467	594.00	593.43	588.77	587.00	588.97	586.90	588.07	587.87	8.92	584.51	5.63	587.80	6.50	586.93				
MW-19A	2957.4556	5200.7298	595.44	594.95	589.96	588.58	590.16	589.86	589.68	589.75	6.90	588.05	6.42	588.53	6.62	588.33				
MW-19B	2958.1664	5203.1593	595.43	594.65	589.60	587.63	589.89	587.63	588.92	588.84	9.50	585.15	5.58	589.07	7.10	587.55				
MH-1	2485.3313	4977.0431	na	595.29	583.35	583.35	583.45	583.64	583.58	nm	nm	nm	nm	nm	nm	nm				
MH-2	2760.1474	4972.2985	na	596.51	583.98	583.98	584.04	584.14	584.21	nm	nm	nm	nm	nm	nm	nm				
MH-3	3300.8154	4964.0866	na	596.79	584.09	584.09	584.16	584.26	584.72	nm	nm	nm	nm	nm	nm	nm				

Notes: ft amsl - feet above mean sea level
nm - water level not measured

BOLD - corrected value
Italic value - flush mount flooded

Table 3.2
Vertical Hydraulic Gradients - October 26, 2009
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well Cluster	Overburden Well "A" Interval Static Water Elevation (ft. amsl)	Bedrock Well "B" Interval Static Water Elevation (ft. amsl)	Overburden Well Screen Midpoint Elevation (ft. amsl)	Bedrock Well Screen Midpoint Elevation (ft. amsl)	Vertical Gradient (ft/ft)
1	587.36	587.48	577.41	565.11	-0.0098
2	587.61	586.82	578.60	560.40	0.0434
3	591.78	587.33	580.80	557.30	0.1894
4	591.60	591.49	575.42	562.38	0.0084
5	586.58	586.77	578.36	563.58	-0.0129
7	587.39	587.22	577.40	558.00	0.0088
10	586.52	586.77	578.12	562.52	-0.0160
11	586.02	586.21	582.40	563.92	-0.0103
12	585.34	586.82	579.05	565.80	-0.1117
13	586.42	586.34	579.43	564.11	0.0052
14	584.87	586.16	581.30	567.30	-0.0921
16	587.63	587.32	574.51	557.43	0.0181
17	587.29	586.84	577.94	563.45	0.0311
18	587.90	586.93	578.50	560.00	0.0524
19	588.33	587.55	577.45	562.10	0.0508

Notes:

Positive vertical gradient indicates potential for downward movement.

Negative vertical gradient indicates potential for upward movement.

Table 3.3
Field Measured Parameters
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well ID	Sample Date	pH (pH Units)	Conductivity (mS/cm)	Temperature (°C)	Eh (mV)	DO (mg/L)	Turbidity (NTU)
MW-1A	27-Oct-09	8.56	1.17	14.51	-19	0.0	10.14
MW-1B	27-Oct-09	6.48	1.31	13.33	-150	0.0	13.1
MW-2A	28-Oct-09	7.06	1.61	14.5	-139	0.0	5.17
MW-2B	28-Oct-09	6.74	1.87	12.55	-343	0.0	21.5
MW-3A	27-Oct-09	6.96	1.63	13.16	11	0.0	5.24
MW-3B	27-Oct-09	6.59	1.32	12.93	-217	0.0	5.4
MW-4A	3-Nov-09	7.15	1.60	13.65	-40	0.0	1.23
MW-4B	3-Nov-09	6.60	1.65	13.15	-259	0.0	7.2
MW-5A	29-Oct-09	7.58	2.07	15.15	62	0.34	25.7
MW-5B	29-Oct-09	6.91	1.7	13.86	-49	0.0	0.66
MW-6	30-Oct-09	6.61	1.60	12.79	-330	0.0	2.3
MW-7A	30-Oct-09	6.44	1.31	13.78	-338	0.0	11.1
MW-7B	30-Oct-09	6.56	1.60	13.15	-336	0.0	26.3
MW-8	2-Nov-09	6.64	1.67	11.76	-256	0.0	4.6
MW-10A	29-Oct-09	6.98	4.84	14.80	-113	0.0	5.27
MW-10B	29-Oct-09	6.92	1.77	13.98	-118	0.0	1.02
MW-11A	30-Oct-09	6.95	4.51	15.93	-107	0.0	1.93
MW-11B	30-Oct-09	7.07	1.83	13.99	-193	0.0	0.80
MW-12A	2-Nov-09	7.08	1.64	13.96	-170	0.0	1.86
MW-12B	2-Nov-09	6.63	0.23	14.27	46	0.0	5.1
MW-13A	29-Oct-09	6.32	1.92	14.26	-66	0.00	38
MW-13B	29-Oct-09	6.40	1.41	12.91	-136	0.0	35
MW-14A	29-Oct-09	6.50	0.964	14.42	-120	0.0	75
MW-14B	29-Oct-09	6.68	1.55	13.24	-205	0.0	1.7
MW-15	3-Nov-09	6.60	1.58	14.07	-315	0.0	0.85
MW-16A	27-Oct-09	6.52	3.13	15.43	58	1.27	30.1
MW-16B	27-Oct-09	6.57	1.48	13.59	-224	0.0	41.7
MW-17A	28-Oct-09	6.57	4.59	15.67	-113	0.0	11.7
MW-17B	28-Oct-09	7.11	3.86	14.90	-203	0.0	42.4
MW-18A	27-Oct-09	7.14	1.26	16.21	-115	0.0	1.32
MW-18B	27-Oct-09	6.92	1.70	14.59	-112	0.0	1.15
MW-19A	2-Nov-09	6.33	1.80	15.34	-41	0.0	4.2
MW-19B	2-Nov-09	6.64	0.97	14.38	-238	0.0	1.9

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Overburden Wells				
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 1A 5818420 Lancaster 1168323 WATER 10/27/2009 12/21/2009	MW- 2A 5819916 Lancaster 1168556 WATER 10/28/2009 12/21/2009	MW- 3A 5818422 Lancaster 1168323 WATER 10/27/2009 12/21/2009	MW- 4A 5825597 Lancaster 1169340 WATER 11/3/2009 12/21/2009	MW- 5A 5821222 Lancaster 1168720 WATER 10/29/2009 12/21/2009
CAS NO.	COMPOUND		UNITS:					
CHEMICALS OF CONCERN								
VOLATILES-8260B								
75-01-4	Vinyl chloride	2	ug/l	ND	1.3 J	ND	41	1.8 J
156-59-2	cis-1,2-Dichloroethene	5	ug/l	ND	ND	ND	110	5.9
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	ND	ND	5.7	ND
79-01-6	Trichloroethene	5	ug/l	ND	ND	ND	130	ND
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	5	ug/l	ND	26	ND	17	ND
NATURAL ATTENUATION PARAMETERS								
HYDROCARBON GASES-RSK 175M								
74-84-0	Ethane	--	ug/l	ND		ND	ND	ND
74-85-1	Ethene	--	ug/l	ND		ND	4.6 J	ND
74-82-8	Methane	--	ug/l	30		14 J	83	5.5 J
74-98-6	Propane	--	ug/l	ND		ND	ND	ND
METALS								
7439-89-6	Iron	300	ug/l	2990 J		583 J	752	137 J
General Chemistry								
BOD	Biochemical Oxygen Demand	--	mg/l	ND		ND	ND	ND
COD	Chemical Oxygen Demand	--	mg/l	16.5 J		25.6 J	ND	23.3 J
16887-00-6	Chloride	250	mg/l	140 J		15.9 J	97.1	263
14797-55-8	Nitrate Nitrogen	10	mg/l	R		R	ND	0.85
14797-65-0	Nitrite Nitrogen	10	mg/l	ND		ND	ND	ND
14808-79-8	Sulfate	250	mg/l	141		250	244	148 J
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	2		2.2	1.7 J	1.1
18496-25-8	Sulfide	50 (G)	mg/l	ND		ND	ND	ND

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Overburden Wells				
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id:	MW- 7A 5822350	MW-10A 5821226	MW-11A 5822349	MW-12A 5824129	MW-13A 5821223
			Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
			SDG:	1168915	1168720	1168915	1169162	1168720
			Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/30/2009	10/29/2009	10/30/2009	11/2/2009	10/29/2009	10/29/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND		UNITS:					
CHEMICALS OF CONCERN								
	VOLATILES-8260B							
75-01-4	Vinyl chloride	2	ug/l	150	140	ND	38	ND
156-59-2	cis-1,2-Dichloroethene	5	ug/l	210	400	ND	64	ND
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	9.4	ND	ND	ND
79-01-6	Trichloroethene	5	ug/l	1.8 J	ND	ND	ND	ND
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	5	ug/l	49	6.4	ND	2.7 J	ND
NATURAL ATTENUATION PARAMETERS								
	HYDROCARBON GASES-RSK 175M							
74-84-0	Ethane	--	ug/l	ND	ND			
74-85-1	Ethene	--	ug/l	51	10			
74-82-8	Methane	--	ug/l	260	38			
74-98-6	Propane	--	ug/l	ND	ND			
	METALS							
7439-89-6	Iron	300	ug/l	2680	2990			
	General Chemistry							
BOD	Biochemical Oxygen Demand	--	mg/l	ND	ND			
COD	Chemical Oxygen Demand	--	mg/l	23.3 J	46.2 J			
16887-00-6	Chloride	250	mg/l	21.8	903			
14797-55-8	Nitrate Nitrogen	10	mg/l	ND	ND			
14797-65-0	Nitrite Nitrogen	10	mg/l	ND	ND			
14808-79-8	Sulfate	250	mg/l	233 J	279 J			
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	3.2	1.6			
18496-25-8	Sulfide	50 (G)	mg/l	2.2	ND			

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Overburden Wells						
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated: UNITS:	MW-14A	MW-16A	MW-17A	Dup of MW-17A	MW-18A	MW-19A	
CAS NO.	COMPOUND			5821227	5818424	5819911	5819912	5818425	5824127	
CHEMICALS OF CONCERN				Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	
VOLATILES-8260B				1168720	1168323	1168556	1168556	1168323	1169162	
75-01-4	Vinyl chloride	2	ug/l	2.7 J	75	25	23	7	2.8 J	
156-59-2	cis-1,2-Dichloroethene	5	ug/l	1.4 J	8.2	180	170	43	3.7 J	
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	ND	1.6 J	1.5 J	ND	ND	
79-01-6	Trichloroethene	5	ug/l	ND	ND	22	21	25	ND	
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND	ND	
75-34-3	1,1-Dichloroethane	5	ug/l	ND	ND	30	29	4.7 J	ND	
NATURAL ATTENUATION PARAMETERS										
	HYDROCARBON GASES-RSK 175M									
74-84-0	Ethane	--	ug/l	ND	ND	ND	ND	ND		
74-85-1	Ethene	--	ug/l	ND	4.7 J	ND	ND	ND		
74-82-8	Methane	--	ug/l	17	11 J	97	100	23		
74-98-6	Propane	--	ug/l	ND	ND	ND	ND	ND		
METALS										
7439-89-6	Iron	300	ug/l	5150	198 J	3810 J	3690	1210		
General Chemistry										
BOD	Biochemical Oxygen Demand	--	mg/l		ND	ND	ND	ND		
COD	Chemical Oxygen Demand	--	mg/l	21 J	41.6 J	59.9 J	57.7 J	14.2 J		
16887-00-6	Chloride	250	mg/l	63.9	247 J	1130 J	1040 J	90.2 J		
14797-55-8	Nitrate Nitrogen	10	mg/l	0.28	R	R	R	R		
14797-65-0	Nitrite Nitrogen	10	mg/l		ND	ND	ND	ND		
14808-79-8	Sulfate	250	mg/l	150 J	1060	192	183	130		
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	4.2	7.2	2.9	2.9	1.5		
18496-25-8	Sulfide	50 (G)	mg/l	ND	ND	ND	ND	ND		

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Bedrock Wells				
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 1B 5818421 Lancaster 1168323 WATER 10/27/2009 12/21/2009	MW- 2B 5819917 Lancaster 1168556 WATER 10/28/2009 12/21/2009	MW- 3B 5818423 Lancaster 1168323 WATER 10/27/2009 12/21/2009	MW- 4B 5825598 Lancaster 1169340 WATER 11/3/2009 12/21/2009	MW- 5B 5821224 Lancaster 1168720 WATER 10/29/2009 12/21/2009
CAS NO.	COMPOUND		UNITS:					
CHEMICALS OF CONCERN								
VOLATILES-8260B								
75-01-4	Vinyl chloride	2	ug/l	1.7 J	16	2.9 J	9.5	37
156-59-2	cis-1,2-Dichloroethene	5	ug/l	1.3 J	9.1	1.5 J	9.7	39
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	ND	ND	ND	ND
79-01-6	Trichloroethene	5	ug/l	ND	ND	ND	ND	ND
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	5	ug/l	ND	ND	ND	ND	ND
NATURAL ATTENUATION PARAMETERS								
	HYDROCARBON GASES-RSK 175M							
74-84-0	Ethane	--	ug/l	ND		ND	ND	ND
74-85-1	Ethene	--	ug/l	ND		ND	ND	ND
74-82-8	Methane	--	ug/l	59		170	140	50
74-98-6	Propane	--	ug/l	ND		ND	ND	ND
METALS								
7439-89-6	Iron	300	ug/l	1520 J		73.6 J	413	743
General Chemistry								
BOD	Biochemical Oxygen Demand	--	mg/l	ND		ND	ND	ND
COD	Chemical Oxygen Demand	--	mg/l	32.5 J		16.5 J	25.6 J	14.2 J
16887-00-6	Chloride	250	mg/l	71.8 J		121 J	190	112
14797-55-8	Nitrate Nitrogen	10	mg/l	R		R	ND	ND
14797-65-0	Nitrite Nitrogen	10	mg/l	ND		ND	ND	ND
14808-79-8	Sulfate	250	mg/l	218		254	267	229 J
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	4.5		3.8	2.9 J	4.9
18496-25-8	Sulfide	50 (G)	mg/l	ND		0.9	0.16 J	ND

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Bedrock Wells					
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated: UNITS:	MW- 6	Dup of MW- 6	MW- 7B	MW- 8	MW-10B	
CAS NO.	COMPOUND			MW- 6 5822354 Lancaster 1168915 WATER 10/30/2009 12/21/2009	MW- 60 5822355 Lancaster 1168915 WATER 10/30/2009 12/21/2009	MW- 7B 5822351 Lancaster 1168915 WATER 10/30/2009 12/21/2009	MW- 8 5824126 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-10B 5821228 Lancaster 1168720 WATER 10/29/2009 12/21/2009	
CHEMICALS OF CONCERN									
VOLATILES-8260B									
75-01-4	Vinyl chloride	2	ug/l	69	72	24	2.6 J	150	
156-59-2	cis-1,2-Dichloroethene	5	ug/l	85	92	7.3	2.1 J	370	
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	ND	ND	ND	3.8 J	
79-01-6	Trichloroethene	5	ug/l	ND	ND	ND	ND	ND	
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND	
75-34-3	1,1-Dichloroethane	5	ug/l	ND	ND	ND	ND	ND	
NATURAL ATTENUATION PARAMETERS									
	HYDROCARBON GASES-RSK 175M								
74-84-0	Ethane	--	ug/l					ND	
74-85-1	Ethene	--	ug/l					2.2 J	
74-82-8	Methane	--	ug/l					94	
74-98-6	Propane	--	ug/l					2.8 J	
METALS									
7439-89-6	Iron	300	ug/l					648	
General Chemistry									
BOD	Biochemical Oxygen Demand	--	mg/l					ND	
COD	Chemical Oxygen Demand	--	mg/l					16.5 J	
16887-00-6	Chloride	250	mg/l					107	
14797-55-8	Nitrate Nitrogen	10	mg/l					ND	
14797-65-0	Nitrite Nitrogen	10	mg/l					ND	
14808-79-8	Sulfate	250	mg/l					245 J	
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l					4.6	
18496-25-8	Sulfide	50 (G)	mg/l					ND	

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Bedrock Wells				
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-11B 5822348 Lancaster 1168915 WATER 10/30/2009 12/21/2009	MW-12B 5824128 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-13B 5821225 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-14B 5821229 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-15 5825596 Lancaster 1169340 WATER 11/3/2009 12/21/2009
CAS NO.	COMPOUND		UNITS:					
CHEMICALS OF CONCERN								
VOLATILES-8260B								
75-01-4	Vinyl chloride	2	ug/l	48	ND	68	86	82
156-59-2	cis-1,2-Dichloroethene	5	ug/l	56	2.6 J	88	64	56
156-60-5	trans-1,2-Dichloroethene	5	ug/l	ND	ND	ND	ND	1.1 J
79-01-6	Trichloroethene	5	ug/l	ND	ND	ND	ND	ND
71-43-2	Benzene	1	ug/l	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	5	ug/l	ND	ND	ND	ND	2 J
NATURAL ATTENUATION PARAMETERS								
	HYDROCARBON GASES-RSK 175M							
74-84-0	Ethane	--	ug/l	ND			ND	
74-85-1	Ethene	--	ug/l	15			2.2 J	
74-82-8	Methane	--	ug/l	150			130	
74-98-6	Propane	--	ug/l	ND			ND	
	METALS							
7439-89-6	Iron	300	ug/l	ND			208	
	General Chemistry							
BOD	Biochemical Oxygen Demand	--	mg/l	ND			ND	
COD	Chemical Oxygen Demand	--	mg/l	21 J			23.3 J	
16887-00-6	Chloride	250	mg/l	165			133	
14797-55-8	Nitrate Nitrogen	10	mg/l	ND			ND	
14797-65-0	Nitrite Nitrogen	10	mg/l	ND			ND	
14808-79-8	Sulfate	250	mg/l	207 J			310 J	
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	3.4			3.5	
18496-25-8	Sulfide	50 (G)	mg/l	0.3			0.5	

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

Table 3.4
Analytical Summary Table
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

				Bedrock Wells				Sewer Samples		
		NYSDEC Class GA Groundwater Standards/Guidance Values ⁽¹⁾	Sample ID: Lab Sample Id:	MW-16B 5818427	MW-17B 5819907	MW-18B 5818426	MW-19B 5824130	MH-1 5819913	MH-2 5819914	MH-3 5819915
			Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
			SDG:	1168323	1168556	1168323	1169162	1168556	1168556	1168556
			Matrix:	WATER	WATER	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/27/2009	10/28/2009	10/27/2009	11/2/2009	10/28/2009	10/28/2009	10/28/2009	10/28/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND		UNITS:							
CHEMICALS OF CONCERN										
VOLATILES-8260B										
75-01-4	Vinyl chloride	2	ug/l	130	69	220	7.2	ND	ND	ND
156-59-2	cis-1,2-Dichloroethene	5	ug/l	510	280	62	68	2.1 J	1.7 J	1.8 J
156-60-5	trans-1,2-Dichloroethene	5	ug/l	1.8 J	2.2 J	ND	ND	ND	ND	ND
79-01-6	Trichloroethene	5	ug/l	ND	3.1 J	ND	ND	1.8 J	1.5 J	1.8 J
71-43-2	Benzene	1	ug/l	1.3 J	ND	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	5	ug/l	ND	26	ND	ND	ND	ND	ND
NATURAL ATTENUATION PARAMETERS										
HYDROCARBON GASES-RSK 175M										
74-84-0	Ethane	--	ug/l	ND	2 J	ND				
74-85-1	Ethene	--	ug/l	3.2 J	14	2.3 J				
74-82-8	Methane	--	ug/l	150	89	120				
74-98-6	Propane	--	ug/l	ND	1.1 J	ND				
METALS										
7439-89-6	Iron	300	ug/l	469	1450 J	806				
General Chemistry										
BOD	Biochemical Oxygen Demand	--	mg/l	ND	ND	ND				
COD	Chemical Oxygen Demand	--	mg/l	18.8 J	53.1 J	23.3 J				
16887-00-6	Chloride	250	mg/l	120 J	720 J	93.8 J				
14797-55-8	Nitrate Nitrogen	10	mg/l	R	R	R				
14797-65-0	Nitrite Nitrogen	10	mg/l	ND	ND	ND				
14808-79-8	Sulfate	250	mg/l	286	195	296				
7440-44-0	Carbon, Total Organic (TOC)	--	mg/l	3.7	3.1	4.1				
18496-25-8	Sulfide	50 (G)	mg/l	0.22	0.1 J	ND				

Notes:

- (1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
- (2) -- indicates no standard or guidance value is available.
- (3) (G) indicates guidance value.
- (4) ND indicated compound was not detected.
- (5) J indicates an estimated concentration.
- (6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

SECTION 4

SUMMARY AND CONCLUSIONS

The following summary and conclusions were developed for the Fall 2009 groundwater sampling event:

- In general, there has been a steady decline in COC concentrations in the overburden and bedrock groundwater over the past 10 years.
- Overburden groundwater COC concentrations were generally consistent with the previous monitoring program results. A notable decrease was observed in MW-7A. MW-7A is in the area of the vegetable oil substrate injections conducted in September 2008, as part of a bioremediation pilot test.
- Bedrock groundwater COC concentrations were also generally consistent with results from previous rounds of monitoring. The higher concentrations of COCs were observed in MW-16B and MW-10B. TCE was non-detect in all but one of the bedrock wells, detected at MW-17B.
- Groundwater samples for natural attenuation monitoring have been collected on 14 separate occasions since the initial sampling round in October 2000. The results for 2009 were generally consistent with previous monitoring events, with the exception of an increase in ethene at wells MW-7A, and MW-17B. Ethene is the final degradation product of TCE. MW-7A is in the area of the Fall 2008 pilot test injection, and MW-17B is downgradient of this area.
- Sewer water samples were collected, and COC concentrations were shown to be similar compared to historical data. Consistent with historical results, low concentrations of cis-1,2-DCE and TCE were detected in the Fall 2009 samples. The analytical results from the sewer sampling indicate that there is no impact from the Site.
- Groundwater flow directions were found to be consistent with former groundwater monitoring results. Groundwater in the overburden and the bedrock is generally westerly to southwesterly, with some minor variations.
- Groundwater elevations for the Fall 2009 sampling event are similar to the Fall of 2007. Spring 2008 elevations were higher in many of the monitoring wells.

SECTION 5 REFERENCES

- NYSDEC. 1998. Division of Water Technical Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. New York State Department of Environmental Conservation. June 1998.
- Intera, 2006. Summary Report for the Spring 2006 Groundwater Monitoring Event, Former Carborundum Company – Electric Products Division, Hyde Park Facility, INTERA, Inc., August 23, 2006.
- DE&S 2000a. Groundwater Monitoring Work Plan for the Former Carborundum Company – Electric Products Division, Hyde Park Facility, Town of Niagara, Niagara County, New York, Site No. 932036, Final Document. Duke Engineering & Services, January 2000.
- INTERA 2005a. Summary Report for the Fifth Year of the Groundwater Monitoring Program at the Former Carborundum Company – Electric Products Division, Hyde Park Facility, Town of Niagara, Niagara County, New York Site No. 932036. INTERA Inc., March 2005.
- INTERA 1995a. Health and Safety Plan for Well Installation and Groundwater Monitoring at the former Carborundum Company – Electric Products Division Hyde Park Facility, Town of Niagara, Niagara County, New York, Site No. 932036. INTERA, Inc., August 1995, revised September 2000.
- NYSDEC 2005. Letter to Mr. William Barber (BP) from Michael Hinton (NYSDEC) re: Carborundum Global Site No. 932036, Town of Niagara, Niagara County, New York. Summary Report for the Fifth Year of the Groundwater Monitoring Program. NYSDEC, September 28, 2005.
- Parsons, 2007. Project Safety Plan (PSP), Former Carborundum Company, 3425 Hyde Park Blvd. Town of Niagara, Niagara County, New York, Parsons, October 2007.
- Parsons, 2009. Enhanced Bioremediation Pilot Test (Overburden) Results Data Delivery, Former Carborundum Company (Hyde Park Facility), July 30, 2009.
- USEPA 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, September 1998. United States Environmental Protection Agency, Office of Research and Development. EPA/600/R-98/128

APPENDIX A
FALL 2009 LABORATORY ANALYTICAL DATA

Appendix A
Analytical Results
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

		Overburden Wells					
Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID:	MW- 1A	MW- 2A	MW- 3A	MW- 4A	MW- 5A
		Lab Sample Id:	5818420	5819916	5818422	5825597	5821222
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168323	1168556	1168323	1169340	1168720
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/27/2009	10/28/2009	10/27/2009	11/3/2009	10/29/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1 U	1.3 J	1 U	41	1.8 J
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	2 UJ
75-00-3	Chloroethane	ug/l	1 U	1.2 J	1 U	1 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	6	0.8 U	2.5 J	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	5.7	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	26	1 U	17	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	110	5.9
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	7.6	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 UJ	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	130	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U		1 U	1 U	1 U
74-85-1	Ethene	ug/l	1 U		1 U	4.6 J	1 U
74-82-8	Methane	ug/l	30		14 J	83	5.5 J
74-98-6	Propane	ug/l	1 U		1 U	1 U	1 U
	METALS						
7439-89-6	Iron	mg/l	2.99 J		0.583 J	0.752	0.137 J
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l	2		2.2	1.7 J	1.1
16887-00-6	Chloride	mg/l	140 J		15.9 J	97.1	263
14808-79-8	Sulfate	mg/l	141		250	244	148 J
BOD	Biochemical Oxygen Demand	mg/l	1.7 U		1.9 U	2.6 U	1.7 U
COD	Chemical Oxygen Demand	mg/l	16.5 J		25.6 J	12.8 U	23.3 J
14797-55-8	Nitrate Nitrogen	mg/l	R		R	0.04 U	0.85
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U		0.015 U	0.015 U	0.015 U
18496-25-8	Sulfide	mg/l	0.054 U		0.054 U	0.054 U	0.054 U

Appendix A
Analytical Results
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

		Overburden Wells					
Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID:	MW- 7A	MW-10A	MW-11A	MW-12A	MW-13A
		Lab Sample Id:	5822350	5821226	5822349	5824129	5821223
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168915	1168720	1168915	1169162	1168720
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/30/2009	10/29/2009	10/30/2009	11/2/2009	10/29/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	150	140	1 U	38	1 U
74-83-9	Bromomethane	ug/l	1 U	2 UJ	1 U	1 U	2 UJ
75-00-3	Chloroethane	ug/l	1 U	2 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	1.5 J	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	R	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	9.4	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	49	6.4	1 U	2.7 J	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	210	400	0.8 U	64	0.8 U
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ	1 U	1 UJ	1 U	1 U
79-01-6	Trichloroethene	ug/l	1.8 J	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U			
74-85-1	Ethene	ug/l	51	10			
74-82-8	Methane	ug/l	260	38			
74-98-6	Propane	ug/l	1 U	1 U			
	METALS						
7439-89-6	Iron	mg/l	2.68	2.99			
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l	3.2	1.6			
16887-00-6	Chloride	mg/l	21.8	903			
14808-79-8	Sulfate	mg/l	233 J	279 J			
BOD	Biochemical Oxygen Demand	mg/l	4.2 U	1.8 U			
COD	Chemical Oxygen Demand	mg/l	23.3 J	46.2 J			
14797-55-8	Nitrate Nitrogen	mg/l	0.04 U	0.04 U			
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U			
18496-25-8	Sulfide	mg/l	2.2	0.054 U			

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Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility			Overburden Wells					MW-18A	MW-19A
			MW-14A	MW-16A	MW-17A	Dup of MW-17A			
Sample ID:			5821227	5818424	5819911	5819912	5818425	5824127	
Lab Sample Id:			Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	
Source:			1168720	1168323	1168556	1168556	1168323	1169162	
SDG:			WATER	WATER	WATER	WATER	WATER	WATER	
Matrix:			10/29/2009	10/27/2009	10/28/2009	10/28/2009	10/27/2009	11/2/2009	
Sampled:			12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	
Validated:									
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
75-01-4	Vinyl chloride	ug/l	2.7 J	75	25	23	7	2.8 J	
74-83-9	Bromomethane	ug/l	2 U	1 U	1 U	1 U	1 U	1 U	
75-00-3	Chloroethane	ug/l	2 U	1 U	1 U	1 U	1 U	1 U	
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	14	13	0.93 J	0.8 U	
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U	R	
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	1.6 J	1.5 J	0.8 U	0.8 U	
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	30	29	4.7 J	1 U	
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U	3 U	
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
156-59-2	cis-1,2-Dichloroethene	ug/l	1.4 J	8.2	180	170	43	3.7 J	
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
79-01-6	Trichloroethene	ug/l	1 U	1 U	22	21	25	1 U	
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U	3 U	
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U	3 U	
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	
74-84-0	Ethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	
74-85-1	Ethene	ug/l	1 U	4.7 J	1 U	1 U	1 U	1 U	
74-82-8	Methane	ug/l	17	11 J	97	100	23		
74-98-6	Propane	ug/l	1 U	1 U	1 U	1 U	1 U		
	METALS								
7439-89-6	Iron	mg/l	5.15	0.198 J	3.81 J	3.69	1.21		
	OTHER								
7440-44-0	Carbon, Total Organic (TOC)	mg/l	4.2	7.2	2.9	2.9	1.5		
16887-00-6	Chloride	mg/l	63.9	247 J	1130 J	1040 J	90.2 J		
14808-79-8	Sulfate	mg/l	150 J	1060	192	183	130		
BOD	Biochemical Oxygen Demand	mg/l	1.4 U	1.7 U	1.9 U	2.3 U	1.4 U		
COD	Chemical Oxygen Demand	mg/l	21 J	41.6 J	59.9 J	57.7 J	14.2 J		
14797-55-8	Nitrate Nitrogen	mg/l	0.28	R	R	R	R		
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U		
18496-25-8	Sulfide	mg/l	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U		

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		Bedrock Wells					
Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID:	MW- 1B	MW- 2B	MW- 3B	MW- 4B	MW- 5B
		Lab Sample Id:	5818421	5819917	5818423	5825598	5821224
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168323	1168556	1168323	1169340	1168720
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/27/2009	10/28/2009	10/27/2009	11/3/2009	10/29/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1.7 J	16	2.9 J	9.5	37
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	2 UJ
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	1.3 J	9.1	1.5 J	9.7	39
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 UJ	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U		1 U	1 U	1 U
74-85-1	Ethene	ug/l	1 U		1 U	1 U	1 U
74-82-8	Methane	ug/l	59		170	140	50
74-98-6	Propane	ug/l	1 U		1 U	1 U	1 U
	METALS						
7439-89-6	Iron	mg/l	1.52 J		0.0736 J	0.413	0.743
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l	4.5		3.8	2.9 J	4.9
16887-00-6	Chloride	mg/l	71.8 J		121 J	190	112
14808-79-8	Sulfate	mg/l	218		254	267	229 J
BOD	Biochemical Oxygen Demand	mg/l	1.6 U		2.2 U	3 U	1.7 U
COD	Chemical Oxygen Demand	mg/l	32.5 J		16.5 J	25.6 J	14.2 J
14797-55-8	Nitrate Nitrogen	mg/l	R		R	0.04 U	0.04 U
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U		0.015 U	0.015 U	0.015 U
18496-25-8	Sulfide	mg/l	0.054 U		0.9	0.16 J	0.054 U

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Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	Bedrock Wells				
			MW- 6	Dup of MW- 6 MW- 60	MW- 7B	MW- 8	MW-10B
			5822354	5822355	5822351	5824126	5821228
			Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
			1168915	1168915	1168915	1169162	1168720
			WATER	WATER	WATER	WATER	WATER
			10/30/2009	10/30/2009	10/30/2009	11/2/2009	10/29/2009
			12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	69	72	24	2.6 J	150
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	2 UJ
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	R	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	3.8 J
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	85	92	7.3	2.1 J	370
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ	1 UJ	1 UJ	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l					1 U
74-85-1	Ethene	ug/l					2.2 J
74-82-8	Methane	ug/l					94
74-98-6	Propane	ug/l					2.8 J
	METALS						
7439-89-6	Iron	mg/l					0.648
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l					4.6
16887-00-6	Chloride	mg/l					107
14808-79-8	Sulfate	mg/l					245 J
BOD	Biochemical Oxygen Demand	mg/l					2.1 U
COD	Chemical Oxygen Demand	mg/l					16.5 J
14797-55-8	Nitrate Nitrogen	mg/l					0.04 U
14797-65-0	Nitrite Nitrogen	mg/l					0.015 U
18496-25-8	Sulfide	mg/l					0.054 U

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		Bedrock Wells				
Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID:	MW-11B	MW-12B	MW-13B	MW-14B
		Lab Sample Id:	5822348	5824128	5821225	5821229
		Source:	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168915	1169162	1168720	1168720
		Matrix:	WATER	WATER	WATER	WATER
		Sampled:	10/30/2009	11/2/2009	10/29/2009	10/29/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:				
	VOLATILES					
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	48	1 U	68	86
74-83-9	Bromomethane	ug/l	1 U	1 U	2 UJ	2 UJ
75-00-3	Chloroethane	ug/l	1 U	1 U	2 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	R	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	56	2.6 J	88	64
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U			1 U
74-85-1	Ethene	ug/l	15			2.2 J
74-82-8	Methane	ug/l	150			130
74-98-6	Propane	ug/l	1 U			1 U
	METALS					
7439-89-6	Iron	mg/l	0.0522 U			0.208
	OTHER					
7440-44-0	Carbon, Total Organic (TOC)	mg/l	3.4			3.5
16887-00-6	Chloride	mg/l	165			133
14808-79-8	Sulfate	mg/l	207 J			310 J
BOD	Biochemical Oxygen Demand	mg/l	1.8 U			2.1 U
COD	Chemical Oxygen Demand	mg/l	21 J			23.3 J
14797-55-8	Nitrate Nitrogen	mg/l	0.04 U			0.04 U
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U			0.015 U
18496-25-8	Sulfide	mg/l	0.3			0.5

Appendix A
Analytical Results
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

		Bedrock Wells				
Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID:	MW-16B	MW-17B	MW-18B	MW-19B
		Lab Sample Id:	5818427	5819907	5818426	5824130
		Source:	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168323	1168556	1168323	1169162
		Matrix:	WATER	WATER	WATER	WATER
		Sampled:	10/27/2009	10/28/2009	10/27/2009	11/2/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:				
	VOLATILES					
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	130	69	220	7.2
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	3.1 J	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	R
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	1.8 J	2.2 J	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	26	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	510	280	62	68
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	1.3 J	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	3.1 J	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	2 J	1 U	
74-85-1	Ethene	ug/l	3.2 J	14	2.3 J	
74-82-8	Methane	ug/l	150	89	120	
74-98-6	Propane	ug/l	1 U	1.1 J	1 U	
	METALS					
7439-89-6	Iron	mg/l	0.469	1.45 J	0.806	
	OTHER					
7440-44-0	Carbon, Total Organic (TOC)	mg/l	3.7	3.1	4.1	
16887-00-6	Chloride	mg/l	120 J	720 J	93.8 J	
14808-79-8	Sulfate	mg/l	286	195	296	
BOD	Biochemical Oxygen Demand	mg/l	1.8 U	2.2 U	1.7 U	
COD	Chemical Oxygen Demand	mg/l	18.8 J	53.1 J	23.3 J	
14797-55-8	Nitrate Nitrogen	mg/l	R	R	R	
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U	
18496-25-8	Sulfide	mg/l	0.22	0.1 J	0.054 U	

Appendix A
Analytical Results
Fall 2009 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Analytical Summary Table for Chemicals of Concern 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility		Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	Sewer Samples		
			MH-1 5819913 Lancaster 1168556 WATER 10/28/2009 12/21/2009	MH-2 5819914 Lancaster 1168556 WATER 10/28/2009 12/21/2009	MH-3 5819915 Lancaster 1168556 WATER 10/28/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:			
	VOLATILES				
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1 U	1 U	1 U
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	18 J	26	16 J
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	2.1 J	1.7 J	1.8 J
67-66-3	Chloroform	ug/l	1.1 J	1.6 J	1.3 J
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1.8 J	1.5 J	1.8 J
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U
108-88-3	Toluene	ug/l	1.1 J	1.1 J	1.1 J
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l			
74-85-1	Ethene	ug/l			
74-82-8	Methane	ug/l			
74-98-6	Propane	ug/l			
	METALS				
7439-89-6	Iron	mg/l			
	OTHER				
7440-44-0	Carbon, Total Organic (TOC)	mg/l			
16887-00-6	Chloride	mg/l			
14808-79-8	Sulfate	mg/l			
BOD	Biochemical Oxygen Demand	mg/l			
COD	Chemical Oxygen Demand	mg/l			
14797-55-8	Nitrate Nitrogen	mg/l			
14797-65-0	Nitrite Nitrogen	mg/l			
18496-25-8	Sulfide	mg/l			

APPENDIX B
ANALYTICAL RESULTS (1999 TO 2009)

Table B.1
Laboratory Analytical Results for Vinyl Chloride (ug/L)
1999 through 2009
Former Carborundum Company, Hyde Park Facility

Monitoring Well	Sample Date																	
				Round 1		Round 2		Round 3		Round 4		Round 5		Fall 2005	Spring 2006	Fall 2007	Spring 08	Fall 09
	Aug-92	May-96	Nov-97	Oct-99	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
OVERBURDEN MONITORING WELLS																		
MW-1A	2J	--	<2	<10	0.44 J	1.4J	0.75J	1.1J	0.74J	0.73J	1.0J	0.74 J	3.0	1.7 J	0.63 J	<2	<2	<2
MW-2A	<10	--	<2	<10	<2	<2	<2	<2	5.5	<2	<2	<2	<2	0.52 J	<2.0	1.9 J	<2	1.3J
MW-3A	<10	--	<2	<10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2	<2	<2
MW-4A	13	--	32	47	45	24	40D	31	54	31*	46	34	48	57	33.5 D*	56	53	41
MW-5A	1300	--	14	1J	42	17DJ*	45D	15	7	120D	4.1	67 D	260 D	110 D	48 D	<2	16	1.8J
MW-7A	--	<1000	11	86	220	100	140D	170J	130J	120DJ	180	170 J	125*	205 D*	60 D	60	130	150
MW-10A	--	38	65	73	86	80DJ	95D*	160	240	115*	100	110	120	150 D	120	67	97	140
MW-11A	--	<10	<2	<10	<2	0.39J	<2*	0.34J*	<2	<2	<2 *	0.82 J	0.59 J	0.95 J	1.3 J	<2	0.7 J	<2
MW-12A	--	13	14	16	49	27J	51	34	49.5D*	26	41	33	38 D	34	27	39	23	38
MW-13A	--	<10	<2	<10	<2	<2J	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2	<2	<2
MW-14A	--	<10	<2	<10	0.37 J	<2J	59D	0.46J	4.6	<2	2.2	2.7	3.8	4.6	2.2	2.4	1.6 J	2.7J
MW-16A	--	--	--	--	NS	35DJ	48D	39	44	52	120	35	35	180 D	88	160	53	75
MW-17A	--	--	--	--	18	14	19D	19J	16J	20	27	21*	34	28	19	12	28	25
MW-18A	--	--	--	--	4.4	0.98J	8.3	2.3	3.1J*	1.6J	4.5 *	1.6 J	3.2 J	3.1	2.1	6.7	2.1 J	7
MW-19A	--	--	--	--	<2	<2	<2	0.3J	0.66J	0.78J	1.0J	0.69 J	<2	1.6 J	1.4 J	4	1.2 J	2.8J
BEDROCK MONITORING WELLS																		
MW-1B	<10	--	<2	2J	3.8	2	3	1.4J	19	1.3J	2.6	1.50 J	5.1	5.1	1.7 J	16	1.9 J	1.7J
MW-2B	66	--	59	46	92	15	60D	70D	100	60D	86	60	81	90	62	59	62	16
MW-3B	5	--	<2	2J	2.3	1.8J	2.6*	2.45	2.1	1.7J	2	1.90 J	2.6	2.6	2.0	2.2	2.2	2.9J
MW-4B	26	--	22	23	35	37	27	35	25*	18	23.5 *	20	19	17	14	11	13	9.5
MW-5B	75	--	33	61	45	13J	37D	38	54	44D	55	45.5*	59	58	44	49	57	37
MW-6	--	<100	68	68	91	72	55D	97D	72	84D	96	81	100	130 D	84	82	100	69
MW-7B	--	<100	23	40	39	23	33D	44D	44	6.2D	42	50	36	46	43	31	45	24
MW-8	--	<10	<2	2J	1.9 J	2.75*	2.5	2.6	2.0	1.9J	2.5	1.8 J	2.3	1.9 J	1.6 J	1.8 J	2.6	2.6J
MW-10B	--	120	52	210J	95	410J	100D	45	84	54*	82	1.8 J	80	115 D*	73	130	80	150
MW-11B	--	<50	56	69	81	88J	85D	80	79D	80	110D	1.8 J	66	80	66.5 D*	80	64	48
MW-12B	--	16	53	73	77	86J	100D	100	100	39	110	1.8 J	96	85	78	76	70	<2
MW-13B	--	<100	31	35	40	27D	37D	33	36D	90D	81D	1.8 J	62 D	60	44	59	65	68
MW-14B	--	<50	65	63	110	50DJ	1.5J	48D	120	68	87D	1.8 J	99 D	98 D	86	49	90	86
MW-15	--	--	68	79	120	58DJ	93D	98	100D	110	100	1.8 J	130	120 D	97 D	86	93	82
MW-16B	--	--	--	--	35	22	34D	6	89	54	52	1.8 J	60	75	70	63	86	130
MW-17B	--	--	--	--	69	41D*	76D	94	81	92	100	1.8 J	125*	115 D*	69 D*	64	82	69
MW-18B	--	--	--	--	90	60	91D	88	100	140D	170	1.8 J	185 D*	180 D	170	140	180	220
MW-19B	--	--	--	--	6.3	2.2D	4.4	9.7	1.8J	5.9	7.9	1.8 J	<2	5.3	7.7	3.4	5.8	7.2
MANHOLES																		
MH-1	--	--	--	--	<2	<2	<2	<2	<10*	<2	<2	<2	<2*	<20*	<10	<2	<2	<2
MH-2	--	--	--	--	<2	<2	<2 J	<2	<10	<2	<2*	<2	<20	<8	<10	<2	<2	<2
MH-3	--	--	--	--	<2	<2*	<2*	<2*	1.2J	<2*	<2	<2*	<20	<8	<10*	<2	0.46 J	<2

Units: ug/L

J indicates an estimated value

D indicates sample was diluted

NS indicates that MW-16B could not be sampled due to insufficient water volume in the well

NYSDEC (1991) (6NYCRR Part 703) Standard for Vinyl Chloride is 2ug/L

* indicates reported concentration is average value of sample and duplicate sample concentrations

Table B.2

Laboratory Analytical Results for Cis-Trans-1,2-Dichloroethene (ug/L)

1999 through 2009

Former Carborundum Company, Hyde Park Facility

Monitoring Well	Sample Date																	
	Aug-92	May-96	Nov-97	Round 1		Round 2		Round 3		Round 4		Round 5		Fall 2005	Spring 2006	Fall 2007	Spring 2008	Fall 09
	Oct-99	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09			
OVERBURDEN MONITORING WELLS																		
MW-1A	14	--	<5	<5	2.4 J	0.78J	0.96J	0.75J	0.61J	0.45J	0.59J	0.80 J	2.0 J	1.4 J	<5	<5	<5	<5
MW-2A	<10	--	<5	<5	1.2 J	0.46J	1.7J	0.28J	14	0.63J	0.38J	<5	<5	<5	<5	9.8	0.38	<5
MW-3A	<10	--	<5	1J	1.5 J	1.7J	1.4J	3J	1.1J	1.3J	0.78J	1.6 J	<5	0.90 J	1.6 J	0.9	0.71	<5
MW-4A	230	--	49	30	74	140	110D	390D	160	170D*	250J	370	240	250 D	425 D*	203.2	203.1	115.7
MW-5A	1900	--	110	14	320	116DJ*	220D	110	32	300D	16J	210 D	580 D	300 D	150 D	2.6	37.35	5.9
MW-7A	--	1200	5206	2900	4800	2200	3400D	2600	2100	1800D	2000DJ	2200	1650 D*	1950 D*	2100 D	580	1706.1	210
MW-10A	--	690	1212	1200	1200	790DJ	865D*	950*	990	655*	640J	760	620	660 D	540	312	400	409.4
MW-11A	--	<10	<5	<5	1.3 J	<5J	2.67J*	<5*	0.34J	<5	<5J *	<5	<5	<5	<5	<5	<5	<5
MW-12A	--	430	120	130	540	270J	340	510D	260D*	170	200DJ	210 D	230 D	200 D	190	151.3	131	64
MW-13A	--	<10	<5	<5	<5	<5J	0.26J	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-14A	--	<10	<5	<5	1.6 J	0.69J	250D	2J	12	0.82J	4.0J	2.1 J	2.3 J	2.3 J	1.7 J	1.6	1.5	1.4J
MW-16A	--	--	--	--	NS	77D	81D	47D	42	26	33J	26	20	21	14	12	9	8.2
MW-17A	--	--	--	--	230	260	260D	320	300	280	380DJ	350*	380 D	320 D	230	161.9	201.5	181.6J
MW-18A	--	--	--	--	47	30	33	34	33*	26	29.5J *	33	40	37	36	25.46	31.44	171.5J
MW-19A	--	--	--	--	33	4.1J	10	4.3J	5.8	3.2J	4.3J	4.0 J	4.0 J	5.2	4.3 J	4.2	3.2	3.7J
BEDROCK MONITORING WELLS																		
MW-1B	10	--	<5	6	4.7 J	1.1J	11	1.3	16	1.3J	2.2J	1.50 J	5.4	5.5	1.4 J	11	1.2	1.3J
MW-2B	2300	--	450	325	260	64	140D	110	150	87D	120J	86	85	90	62	48	41	9.1
MW-3B	18	--	5	4J	4.8 J	3.5J	1.96J*	3.55J*	3.4J	2.6J	2.7J	3.3 J	2.1 J	2.7 J	2.6 J	1.9	2.1	1.5J
MW-4B	130	--	45	33	39	30	29	33	18*	20	22J *	25	14	17	12	23	12	9.7
MW-5B	520	--	270	530	420	140J	170D	150	140	110D	110J	120*	110	87	74	61.66	58.5	39
MW-6	--	1000	595	480	560	360	300D	350D	250	220D	220J	230	220 D	210 D	170	130.52	150.39	85
MW-7B	--	370	110	89	84	40	46D	34	35	23	24J	26	21	18	14	11	10	7.3
MW-8	--	<10	6	5	5.55	4.4J*	4.4J	3.8J	3.2J	3.0J	3.4J	2.8 J	2.8 J	3.2 J	3.1 J	2.2	2.5	2.1J
MW-10B	--	1900	921	2100	1800	3200J	1100D	400	520	260*	320J	300	260	320 D*	220	221.9	191.4	373.8J
MW-11B	--	390	705	385	590	460J	320D	340D	190D	230	250DJ	280	150	140 D	120 D*	141	100.77	56
MW-12B	--	250	250	380	210	200J	170D	220	160	92	130J	160 D	120	150 D	110	111	141.6	2.6J
MW-13B	--	810	410	330	310	210DJ	220D	190	160D	120D	140DJ	130	140 D	110 D	110	83.1	68.53	88
MW-14B	--	310	765	330	300	280DJ	8.2	130D	200	170	150DJ	170*	130 D	130	130	56.42	120.85	64
MW-15	--	--	640	460	400	410DJ	390D	440D	340D	440	330DJ	310 D	400 D	340 D	300 D	171.7	191.5	57.1J
MW-16B	--	--	--	--	130	140	92D	55	290D	290	210DJ	290 D	250	320 D	310	210.88	281.4	511.8J
MW-17B	--	--	--	--	1000	505D*	740D	840	710	720	820	860	955*	985 D*	855 D*	443.4	638.5	282.2J
MW-18B	--	--	--	--	690	420	550D	370	290	270D	240J	240	190 D*	170	160	160.9	120.73	62
MW-19B	--	--	--	--	41	25D	14	66D	8.6	33	24 J	52	1.8 J	21	52	12	24	68
MANHOLES																		
MH-1	--	--	--	--	4.7 J	6.6	4.4J	<5	4.7J*	5.6	5.8J	2.5 J	3.2 J*	11.1 J*	5.7 J	0.45	5.8	2.1J
MH-2	--	--	--	--	<5	5.9	7.8 J	<5	4.4J	5.1	5.15J*	2.8 J	<50	8.8 J	5.5 J	<5	5.4	1.7J
MH-3	--	--	--	--	2 J	9.4*	5.8*	<5*	7.8J	7.5*	6.9J	4.0* J	<50	18 J	9.45 J*	0.69	6.9	1.8J

Units: ug/L

J indicates an estimated value

D indicates sample was diluted

NS indicates that MW-16B could not be sampled due to insufficient water volume in the well

NYSDEC (1991) (TOGS 1.1.1) Standard for DCE is 5ug/L

* indicates reported concentration is average value of sample and duplicate sample concentrations

Table B.3
Laboratory Analytical Results for Trichloroethene (ug/L)
1999 through 2009
Former Carborundum Company, Hyde Park Facility

Monitoring Well	Sample Date																	
	Aug-92	May-96	Nov-97	Round 1		Round 2		Round 3		Round 4		Round 5		Fall 2005	Spring 2006	Fall 2007	Spring 2008	Fall 09
	Oct-99	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09			
OVERBURDEN MONITORING WELLS																		
MW-1A	<10	--	<5	<5	<5	<5	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5	<5
MW-2A	<10	--	<5	<5	<5	<5	3.4J	0.61J	4.0J	<5	<5J	<5	<5	<5	<5	0.91 J	<5	<5
MW-3A	4	--	<5	<5	0.43 J	0.84BJ	0.82J	3.6J	0.58J	1.5J	0.75J	1.3 J	0.46 J	<5	1.1 J	<5	0.21 J	<5
MW-4A	3	--	<5	4J	2.8 J	3.4BJ	4DJ	8.1J	6.3J	9.55*	11J	23 J	30 J	37	53 D*	34	34	130
MW-5A	<200	--	<5	0.8J	1.3 J	<5*	<5D	<25	0.69J	0.48J	0.65J	0.7 J	0.88 J	0.89 J	10	0.59 J	0.47 J	<5
MW-7A	--	8700	1400	170 J	1200	1800	2000D	1400	1100	610D	600J	730	530*	475 D*	410 D	36	210	1.8J
MW-10A	--	<250	<5	<5	<5	<5	<5*	<185*	<120	<120*	<120J	<120	<120	0.63 J	<40	<5	<5	<5
MW-11A	--	<10	<5	<5	<5	<5	<5*	<5*	0.23J	<5	<5J *	<5	<5	<5	<5	<5	<5	<5
MW-12A	--	<50	<5	<5	2.6 J	<5	<5	1.3J	0.31J*	<40	<25J	0.39 J	0.40 J	0.54 J	<10	<5	0.35 J	<5
MW-13A	--	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-14A	--	<10	<5	<5	<5	<5	<5D	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-16A	--	--	--	--	NS	4.2DJ	1.9DJ	1.2J	0.77J	<10	<20J	0.70 J	<10	0.56 J	0.52 J	0.39 J	0.39 J	<5
MW-17A	--	--	--	--	115	58	73D	54	62	42J	49J	38* J	57	48	28	38	29	22
MW-18A	--	--	--	--	36	30	37	40	53*	22D	47.5DJ *	43	67	52	43	22	25	25
MW-19A	--	--	--	--	1.7 J	1.3J	2.2J	1.1J	0.99J	0.61J	0.52J	0.40 J	0.26 J	<5	<5	<5	<5	<5
BEDROCK MONITORING WELLS																		
MW-1B	<10	--	<5	<5	<5	<5	<5	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-2B	670	--	6	5.5	0.44 J	1.1BJ	0.82DJ	<10	<25	<5	<20J	<20	<20	<5	<5	<5	<5	<5
MW-3B	<10	--	<5	<5	<5	<5	2.7J*	<5*	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-4B	5	--	<5	0.9J	3.2 J	0.99BJ	3.8J	1.4J	0.585J*	<5	0.73J *	0.35 J	0.41 J	0.63 J	<5	<5	<5	<5
MW-5B	71	--	5	8	2.6 J	2.4BJ	2.6DJ	1.3J	1.6J	0.99J	<25J	1.0* J	<25	1.5 J	0.72 J	0.76 J	0.51 J	<5
MW-6	--	<100	<5	<5	<5	<5	<5D	0.23J	<50	<5	<50J	<50	<25	<5	<10	<5	<5	<5
MW-7B	--	<100	<5	<5	<5	0.5J	<5D	<5	<10	<5	<10J	<10	<5	<5	<5	<5	<5	<5
MW-8	--	<10	<5	<5	<5	<5*	<5	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5
MW-10B	--	90	28	120	68	<6.4	63D	13J	13J	4.5J*	3.3J	3.0 J	<50	1.25 J*	<20	0.7 J	0.7 J	<5
MW-11B	--	<50	<5	<5	<5	<5	<5	<25	<5	<50	<5	<50	<25	<5	<10 D*	<5	<5	<5
MW-12B	--	18	<5	<5	<5	<5	<5	<50	<25	<20	<20J	<5	<20	<5	<10	<5	<5	<5
MW-13B	--	48	36	22	12	7.9D	12D	7.6J	9.1	2.8J	5J	3.1 J	1.2 J	1.4 J	<10	0.78 J	0.74 J	<5
MW-14B	--	<50	<5	<5	<5	<5	<5	<5	<50	<25	<5J	<5*	<5	<5	<10	<5	<5	<5
MW-15	--	--	<10	<5	<5	<5	<5D	<25	<5	<100	<25J	<25	<50	<5	<5	<5	<5	<5
MW-16B	--	--	--	--	0.97 J	<5	<5D	<10	<25	<50	0.63J	0.65 J	<50	<5	<20	<5	0.25 J	<5
MW-17B	--	--	--	--	22	4.2DJ*	18D	23J	20J	19J	12J	12 J	12 J**	11*	6.05 J*	4 J	4.6 J	3.1J
MW-18B	--	--	--	--	7.7	<5	<5D	<100	<50	<5	<50J	<50	<17.5*	<5	<10	<5	<5	<5
MW-19B	--	--	--	--	2.4 J	1.0DJ	0.28J	0.35J	<5	<5	<5J	<10	<5	<5	<5	<5	<5	<5
MANHOLES																		
MH-1	--	--	--	--	<5	3.6BJ	0.59J	<5	<25*	5.0	4.5J	3.5 J	1.5 J*	5.3 J*	4.8 J	<5	3.5 J	1.8J
MH-2	--	--	--	--	<5	3.3BJ	0.82J	<5	<25	5.1	4.2J *	4.3 J	<50	3.1 J	4.6 J	<5	3.6 J	1.5J
MH-3	--	--	--	--	<5	5.8B*	0.74J*	<5*	1.4J	7.65*	5.7J	5.8*	2.6 J	8.1 J	8.45 J*	<5	4.4 J	1.8J

Units: ug/L

J indicates an estimated value

B indicates the analyte was found in an associated blank.

D indicates sample was diluted

NS indicates that MW-16B could not be sampled due to insufficient water volume in the well

NYSDEC (1991) (TOGS 1.1.1) Standard for TCE is 5ug/L

* indicates reported concentration is average value of sample and duplicate sample concentrations

** indicates reported concentration of duplicate, sample is non-detect with an MDL of 200 ug/L

Table B.4
Laboratory Analytical Results for Benzene (ug/L)
1999 through 2009
Former Carborundum Company, Hyde Park Facility

Monitoring Well	Sample Date																	
	Aug-92	May-96	Nov-97	Round 1		Round 2		Round 3		Round 4		Round 5		Fall 2005	Spring 2006	Fall 2007	Spring 2008	Fall 09
				Oct-99	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
OVERBURDEN MONITORING WELLS																		
MW-1A	<10	--	<0.7	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2A	<10	--	<0.7	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-3A	<10	--	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-4A	<10	--	<5	<5	<1	<1	<1D	<4	<5	<1*	<10	<10	<10	0.6 J	0.89 J*	0.45 J	0.38 J	<1
MW-5A	<200	--	<0.7	<5	0.24 J	<1*	<1D	<5	<1	<1	<1	<1	0.47 J	<1	<1	<1	<1	<1
MW-7A	--	<1000	4	2J	2.9	<12	<16D	<100	<100	1	<50	<100	<45*	1.4*	<20	<1	0.88 J	<1
MW-10A	--	<250	<0.7	0.6J	0.52 J	<3.2	<4D*	<37.5*	<25	<25*	<25	<25	<25	<1	<8	<1	<1	<1
MW-11A	--	<10	<0.7	<5	<1	<1	<1*	<1*	<1	<1	<1 *	<1	<1	<1	<1	<1	<1	<1
MW-12A	--	<50	<0.7	<5	0.44 J	<1	<1	<1	0.26J*	<8	<5	<1	<1	<1	<2	<1	<1	<1
MW-13A	--	<10	<0.7	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-14A	--	<10	<0.7	<5	<1	<1	<1D	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-16A	--	--	--	--	NS	<1	<1D	<1	<2	<2	<4	<1	<2	<1	<1	<1	<1	<1
MW-17A	--	--	--	--	0.27 J	<1.6	<1D	<10	<10	<10	<10	<10*	<8	<1	<4	<1	<1	<1
MW-18A	--	--	--	--	<1	<1	0.32J	<1	<2*	<1	<1 *	<2	<2	<1	<1	<1	<1	<1
MW-19A	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BEDROCK MONITORING WELLS																		
MW-1B	<10	--	<0.7	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2B	1J	--	<0.7	<5	0.32 J	<1	<1D	<2	<5	<1	<4	<4	<1	<1	<1	<1	<1	<1
MW-3B	0.6	--	<5	<5	<1	<1	<1*	<1*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-4B	<10	--	<0.7	<5	0.23 J	0.24BJ	<1	<1	<1*	<1	<1 *	<1	<1	<1	<1	<1	<1	<1
MW-5B	<10	--	<0.7	<5	<1	<1	<1D	<5	<5	<1	<5	<1*	<5	<1	<1	<1	<1	<1
MW-6	--	<100	<0.7	<5	0.39 J	<1.2	<1D	0.27 J	<10	<1	<10	<10	<5	<1	<2	<1	<1	<1
MW-7B	--	<100	<0.7	<5	0.21 J	<1	<1D	<1	<2	<1	<2	<2	<1	<1	<1	<1	<1	<1
MW-8	--	<10	<0.7	<5	<1	<1*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-10B	--	<250	<0.7	1J	0.25 J	<6.4	<4D	<20	<20	<10*	<10	<10	<10	<1*	<4	<1	<1	<1
MW-11B	--	<50	<0.7	<5	0.39 J	<1.6	<1D	<5	<1	<10	<1	<10	<5	<1	<1*	<1	<1	<1
MW-12B	--	<50	<0.7	<5	0.36 J	<1	<1D	<10	<5	<4	<4	0.32 J	<4	<1	<2	0.24 J	<1	<1
MW-13B	--	<100	<1	<5	<1	<1	<1D	<10	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1
MW-14B	--	<50	<0.7	<5	0.22 J	<1	0.23J	<1	<10	<5	<1	<1*	<1	<1	<2	<1	<1	<1
MW-15	--	--	<1	<5	0.3 J	<1.6	<1.6D	<5	0.26J	<20	<5	<5	<10	<1	<1	<1	<1	<1
MW-16B	--	--	--	--	<1	<1	<1D	<2	<5	<10	<2	0.69 J	<10	0.84 J	<4	0.57 J	0.71 J	1.3J
MW-17B	--	--	--	--	0.65 J	<3.2*	<3.2D	<40	<25	<25	<25	<25	<32.5*	1.2*	<9*	0.44 J	0.8 J	<1
MW-18B	--	--	--	--	0.4 J	<2	<2D	<20	<10	<1	<10	<10	<3.5*	<1	<2	<1	<1	<1
MW-19B	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1
MANHOLES																		
MH-1	--	--	--	--	<1.2	<1.2	<1	<1	<5*	<1	<1	<1	<1*	<10*	<5	<1	<1	<1
MH-2	--	--	--	--	<1.2	<1.2	<1 J	<1	<5	<1	<1 *	<1	<10	<4	<5	<1	<1	<1
MH-3	--	--	--	--	<1.2	<1.2*	<1*	<1*	<5	<1*	<1	<1*	<10	<4	<5*	<1	<1	<1

Units: ug/L

J indicates an estimated value

B indicates the analyte was found in an associated blank.

D indicates sample was diluted

NS indicates that MW-16B could not be sampled due to insufficient water volume in the well

NYSDEC (1991) (6NYCRR Part 703) Standard for Benzene is 0.7ug/L

* indicates reported concentration is average value of sample and duplicate sample concentrations

Table B.5
Laboratory Analytical Results for 1,1-Dichloroethane (ug/L)
1999 through 2009
Former Carborundum Company, Hyde Park Facility

Monitoring Well	Sample Date																	
	Aug-92	May-96	Nov-97	Round 1		Round 2		Round 3		Round 4		Round 5		Fall 2005	Spring 2006	Fall 2007	Spring 2008	Fall 09
				Oct-99	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
OVERBURDEN MONITORING WELLS																		
MW-1A	2	--	<5	<5	<5 J	0.29J	<5	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-2A	3	--	12	29	13 J	21	19	19	14	11	19	13 J	19	25	19	7.1	14	26
MW-3A	<10	--	<0.7	<5	<5	<5	<5	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-4A	2	--	<0.7	2J	4.6 J	5.4	6.2D	8.8J	7.8J	12*	15J	23 J	19 J	17	22*	12	15	17
MW-5A	<200	--	<5	<5	2.1 J	<5*	<5D	<25J	<5	1.1J	<5	0.96 J	2.8 J	1.4 J	0.82 J	<5	<5	<5
MW-7A	--	<100	1500	690	1000	390	510D	430J	300J	280DJ	290	390 J	215 J*	345 D*	350 D	80	220	49
MW-10A	--	<250	18	22	25	11D	13.5D*	15J*	15J	<120*	10J	11 J	<120	11	7 J	4.5 J	5.8	6.4
MW-11A	--	<10	<5	<5	<5	<5	<5*	<5*J	<5	<5	<5 *	<5 J	<5	<5	<5	<5	<5	<5
MW-12A	--	<50	<5	2J	5.9	2.2J	4.2J	3.1 J	3.7J*	<40	3.3J	3.3 J	3.4 J	3.4 J	3.2 J	3.2 J	2.2 J	2.7J
MW-13A	--	<10	<5	<5	<5	<5	<5	<5J	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-14A	--	<10	<5	<5	<5	<5	<5D	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-16A	--	--	--	--	NS	<5	<5D	<5J	<10	<10	<20	<5 J	<10	<5	<5	<5	<5	<5
MW-17A	--	--	--	--	59	75	75D	66	59	38J	48J	37 J	45	36	23	19	20	30
MW-18A	--	--	--	--	5.6	4.9J	6	5.5	5.3J*	3.8J	4.95J *	5.2 J	7.3 J	6.1	5.1	4.1 J	3.8 J	4.7J
MW-19A	--	--	--	--	<5	<5	<5	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
BEDROCK MONITORING WELLS																		
MW-1B	3	--	<5	1J	1.5 J	1.70J	0.91J	1.3J	0.62J	0.87J	1.0J	1.2 J	<5	0.76 J	0.96 J	<5	0.71 J	5
MW-2B	<10	--	<5	0.5J	<5 J	2	<5	<10	<25	<5	<20	<20 J	<20	<5	<5	<5	<5	<5
MW-3B	<10	--	<0.7	<5	<5	<5	<5*	<5*	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-4B	<10	--	2	3J	3.2 J	2.5J	2.6J	2.8J	1.75J*	1.8J	2.05J *	2.1 J	1.6 J	1.8 J	1.3 J	1.4 J	<5	<5
MW-5B	3	--	<5	1J	1.1 J	<5	<5D	<25J	<25	<5	<25	0.61 J*	<25	0.65 J	<5	0.38 J	<5	<5
MW-6	--	<100	<5	<5	0.28 J	<5	<5D	<5	<50	<5	<50	<50 J	<25	<5	<10	<5	<5	<5
MW-7B	--	<100	<5	<5	<5	<5	<5D	<5	<10	<5	<10	<10 J	<5	<5	<5	<5	<5	<5
MW-8	--	<10	<5	<5	<5	<5*	<5	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5
MW-10B	--	<250	<5	3J	1.2 J	46	<5D	<100	<100	<50*	<50	<50 J	<50	0.84 J*	<20	0.69 J	0.54 J	<5
MW-11B	--	<50	<5	0.7J	3.5 J	<5	<5D	1.4 J	0.45J	<50	1.6J	<50 J	<25	<5	<5*	0.39 J	<5	<5
MW-12B	--	<50	<5	2J	2.3 J	<5	<5D	<50	1.3J	<20	1.8J	1.5 J	<20	1.8 J	1.6 J	1.8 J	1.6 J	<5
MW-13B	--	<100	<10	1J	0.91 J	<5	<5D	<50J	0.83J	0.58J	0.68J	<20 J	0.56 J	0.77 J	<10	0.61 J	0.48 J	<5
MW-14B	--	<50	<5	0.8J	0.61 J	<5J	<5	0.62 J	<50	<25	0.38J	0.41 J*	<5	<5	<10	0.6 J	0.41 J	<5
MW-15	--	--	<10	1J	0.95 J	<5	<5D	1.7J	1.1J	<100	<25	<25 J	<50	2 J	1.6 J	0.66 J	0.58 J	2J
MW-16B	--	--	--	--	<5	<5	<5D	<10J	<25	<50	<10	<10 J	<50	<5	<20	<5	0.22 J	<5
MW-17B	--	--	--	--	5.4	<5*	20D	40J	39J	28J	27J	26 J	26.5 J*	25.5*	22 DJ*	9.3	17.0	26.0
MW-18B	--	--	--	--	<5	<5	<5D	<100	<50	<5	<50	<50 J	<17.5*	<5	<10	<5	<5	<5
MW-19B	--	--	--	--	<5	<5	<5	<5	<5	<5	<5	<10 J	<5	<5	<5	<5	<5	<5
MANHOLES																		
MH-1	--	--	--	--	<5 J	<5	<5	<5	<25*	<5	<5	<5 J	<5*	<50*	<25	<5	<5	<5
MH-2	--	--	--	--	<5 J	<5	<5 J	<5	<25	<5	<5 *	<5 J	<50	<20	<25	<5	<5	<5
MH-3	--	--	--	--	<5 J	<5 *	<5*	<5*	<25	<5*	<5	<5 J*	<50	<20	<25*	<5	<5	<5

Units: ug/L

J indicates an estimated value

D indicates sample was diluted

NS indicates that MW-16B could not be sampled due to insufficient water volume in the well

NYSDEC (1991) (TOGS 1.1.1) Standard for DCA is 5ug/L

* indicates reported concentration is average value of sample and duplicate sample concentrations

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-1A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.3	0.4		0.0	0.0
Total Fe (lab measurement)	(mg/L)	nv	<0.05 J	11.7 J	6.3 J	11.8 J	4.16	12.2	9.34 J	1.97 J	5.44	3.69		1.01	2.99 J
Fe+3 (calculated)	(mg/L)	nc	<0.05	11.7	6.3	11.8	4.2	12.0	9.2	1.8	5.1	3.3			
Methane	(ug/L)	23	30	40	36	41	40	19	43	42	34	46		2.6	30.0
Ethane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1	<1	1.3	<1	<1	<1	<1		<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1	<1	<1			
TOC	(mg/L)	<4	3.4	2.3	4.1 J	1.6	1.7	2.1	2.4	2.2	2.6	1.5		1.53	2.0
BOD	(mg/L)	<2	<2	<2	<2	<2	<2	<2	3.30	30.6	<2	<2		<2	1.7 U
COD	(mg/L)	<5	5.7J	<5 J	7.4 J	22.5 J	<10	<10	12.1	<10	<10	<10		6.02	16.5 J
Chloride	(mg/L)	44.6	43.5	31.7	47.8	37.8	44.7	37.7	49.2	40.3	41.7	40.2		112	140 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	0.13	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv		0.07	
Sulfate	(mg/L)	135	159J	136 J	173	147	173	191	155	156	142	176		109	141
Sulfide	(mg/L)	31.5	<1	<1	<1	<1	<0.1	0.14	<0.1	<0.10	<0.10	0.13		<0.10	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-1B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.0	1.2	0.4	0.0	1.0	0.8	0.5	0.8	0.7	0.8	1.6	0.6
Total Fe (lab measurement)	(mg/L)	nv	1.1	5 J	1.8 J	4.33 J	1.22	1.21	1.48 J	0.56 J	1.56	1.83	0.45	1.22	1.52 J
Fe+3 (calculated)	(mg/L)	nc	1.1	5.0	0.6	3.9	1.2	0.2	0.7	0.1	0.8	1.1	-0.3		
Methane	(ug/L)	65	34	30	44	91	40	40	54	100	51	50	160	64	59
Ethane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.36 J	<1	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.97 J	<1	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	6.2	6.6	9.7	6.7 J	6.2	3.8	4.6	2.8	3.8	3.2	3.4	4.2	4.06	4.50
BOD	(mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.6 U
COD	(mg/L)	13	13J	37.2 J	16.9 J	17.2 J	10.4	<10	24.9	12.8	<10	<10	<5	13.0	32.5 J
Chloride	(mg/L)	83.1	83.3	74.2	72.1	95.4	73.7	72.1	70.2	82.2	85.3	62.7	97.6	70.0	71.8
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	223	297J	268 J	239	304	276	277	240	257	177	238	301	181	218
Sulfide	(mg/L)	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-3A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	nv	0.2	0.2
Total Fe (lab measurement)	(mg/L)	nv	<0.05 J	1.9 J	10.7 J	6.47 J	7.94	16.5	13.5 J	9.55 J	8.73	4.45	90.60	7.8	0.583 J
Fe+3 (calculated)	(mg/L)	nc	<0.05	1.4	10.7	6.5	7.9	16.5	13.5	9.6	8.7	4.5	nc		
Methane	(ug/L)	45	4	1.2	4	<1	1.6	1.9	1.7	3.9	18.0	1.1	6.0	12	14 J
Ethane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.54 J	<1	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	2.1	2.9	3.8	5.1 J	2.5	2.4	3.4	2.7	2.1	2.7	2.3	3.2	2.9	2.2
BOD	(mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.9 U
COD	(mg/L)	<5	<5	<5 J	<5 J	<5 J	<10	<10	<10	<10	<10	<10	19 J	6.9	25.6 J
Chloride	(mg/L)	17.9	18.7	19.5	20.7	19.9	18.5	21.9	21.6	14.3	23.9	16.5	16.4	<17.5	15.9 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.067	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	399	462	444 J	400	512	332	373	345	311	270	327	319	292	250
Sulfide	(mg/L)	<1	<1	<1	<1	<1	0.73	<0.1	0.12	<0.1	<0.10	<0.10	3.64	<0.10	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-3B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Fe (lab measurement)	(mg/L)	nv	<0.05 J	0.2* J	1.0* J	2.12	0.422	0.0705	<0.05 J	2.21 J	0.28	0.0838	<0.100	<0.100	0.0736 J
Fe+3 (calculated)	(mg/L)	nc	<0.05	0.0	1.0	2.1	0.4	0.1	<0.05	2.2	0.3	0.1	nc		
Methane	(ug/L)	260	90	175*	195*	280 J	130	59	140	150	190	140	220	180	170
Ethane	(ug/L)	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	0.6 J	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propane	(ug/L)	<	nv	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	3.6	4.6	4*	8.3*J	2.7	2.8	3.3	3.4	3.6	3.4	2.8	3.2	3.64	3.80
BOD	(mg/L)	<2	<2	<2	3.3*	7.8	<2	<2.2	<2	<2	<2	3.1	<2	4.2	2.2 U
COD	(mg/L)	11.3	7.4	6* J	37.55*J	53.7 J	<10	<10	20.6	14.1	<10	<10	<5	14.1	16.5 J
Chloride	(mg/L)	93.6	92.5	99.2*	91.75*	110	96.8	116	83.6	114	137	118	134	132	121 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	288	356	304* J	346*	562	240	394	413	347	240	344	395	333	254
Sulfide	(mg/L)	<1	<1	<1	1.2*	<1	<0.1	0.29	0.60	<0.1	0.10	0.14	<1	<1	0.90

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-4A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.2**	0.0	0.4	nv	0.2	0.2	0.3	0.5	0.6	0.6	0.8	0.3	0.6
Total Fe (lab measurement)	(mg/L)	nv	0.1 J	12.1 J	1.9 J	4.23	54.0*	1.67	34.5 J	55.1 J	15.8	63.9 J*	7.0	1.8	0.752
Fe+3 (calculated)	(mg/L)	nc	0.1	12.1	1.5	nc	53.8*	1.5	34.2	54.6	15.2	63.6*	6.2		
Methane	(ug/L)	54	44	40	130	87 J	89*	53	110	120	140	105*	130	130	83
Ethane	(ug/L)	<1	<1	<1	<1	<1 J	<1*	<1	<1	<1	<1	1.25*	0.55 J	0.55 J	1 U
Ethene	(ug/L)	3	1.5	1.5	1.8	2.5 J	2.1*	1.3	<1	3.1	3.8	2.3*	5.6	5.6	4.6 J
Propane	(ug/L)	<1	nv	<1	<1	<1 J	<1*	<1	<1	<1	<1	<1*	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1*	<1	<1	<1	<1	<1*	nv		
TOC	(mg/L)	2.7	2.4	2.5	3	1.5	<1*	1.8	1.8	1.9	4.5	<1*	1.9	1.52	1.7 J
BOD	(mg/L)	<2	<2	<2	<2 J	<2	<2*	<2	<2	<2	<2	<2*	<2	<2	2.6 U
COD	(mg/L)	<5	<5	<5 J	10.3 J	<5 J	<10*	<10	<10	<10	11.7	10.5*	<5	6.6	12.8 U
Chloride	(mg/L)	100	185	89.3	132	80.1	168*	118	74.2	93.9	93.2	128.5*	106.0	117	97.1
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05	<0.05	<0.05	<0.05*	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05*	<0.05	<0.05	<0.05	<0.05	<0.05*	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	0.13	
Sulfate	(mg/L)	222	318	281 J	322	258	302*	263	305	272	248	269*	242	231	244
Sulfide	(mg/L)	31.5	<1	<1	<1	<1	<0.5*	<0.1	0.15	<0.1	<0.10	0.13*	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-4B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field)	(mg/L)	0.0	0.0	0.0	0.6	nv	0.5	0.5	0.5	0.5	0.4	0.5	0.8	0.4	0.4
Total Fe (lab)	(mg/L)	nv	0.3 J	2 J	1.1 J	1.35*	1.14	1.06 *	0.7 J	0.93 J	0.82	0.786 J	2.49	1.14	0.41
Fe+3 (calculated)	(mg/L)	nc	0.3	2.0	0.5	nc	0.6	0.6	0.2	0.4	0.4	0.3	1.7		
Methane	(ug/L)	230	150	120	200	220* J	230	140 *	230	190	170	190	200	260	140
Ethane	(ug/L)	<1	<1	<1	<1	<1* J	<1	<1 *	<1	<1	<1	<1	0.39 J	0.43 J	1 U
Ethene	(ug/L)	1	<1	<1	<1	<1* J	<1	<1 *	<1	<1	<1	<1	0.39 J	0.66 J	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1* J	<1	<1 *	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1* J	<1	<1 *	<1	<1	<1	<1	nv		
TOC	(mg/L)	<10	3.6	3.2	3.3	2.25*	1.2	2.65 *	2.4	2.6	3.1	<1	3.2	3.29	2.9 J
BOD	(mg/L)	<2	<2	<2	<2 J	<2*	<2	<2 *	<2	<2	<2	<2	<2	<2	3 U
COD	(mg/L)	7.4	<5	<5 J	7.7 J	11.1* J	<10	<10 *	16.4	<10	18.1	<10	5.52 J	9.0	25.6 J
Chloride	(mg/L)	167	136	123	133	127.5*	121	143 *	69.4	131	126	142	152	152	190
Nitrate	(mg/L)	<0.5J	0.076	<0.05	<0.05	<0.05*	<0.05	<0.05 *	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02*	<0.05	<0.05 *	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	314	502	524 J	402	462*	228	355 *	355	320	252	308	316	333	267
Sulfide	(mg/L)	<1	<1	<1	<1	<1*	<0.1	<0.1 *	0.11	<0.1	<0.10	<0.10	2.59	<0.10	0.16 J

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-5A			Monitoring Well I.D.		MW-5B		
Parameter	Units	Oct-07	Apr-08	Oct-09	Parameter	Units	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.2	0.5	0.0	Fe+2 (field measurement)	(mg/L)	1	1.0	0.4
Total Fe (lab measurement)	(mg/L)	8.32	71.40	0.137 J	Total Fe (lab measurement)	(mg/L)	0.709	0.760	0.743
Fe+3 (calculated)	(mg/L)	8.1			Fe+3 (calculated)	(mg/L)	-0.3		
Methane	(ug/L)	0.74 J	22	5.5 J	Methane	(ug/L)	86	80	50
Ethane	(ug/L)	<1	2.0	1 U	Ethane	(ug/L)	<1	0.37 J	1 U
Ethene	(ug/L)	<1	4.7	1 U	Ethene	(ug/L)	0.6 J	0.76 J	1 U
Propane	(ug/L)	<1	1.1	1 U	Propane	(ug/L)	<1	<1	1 U
Propene	(ug/L)	nv			Propene	(ug/L)	nv		
TOC	(mg/L)	1.14	1.44	1.10	TOC	(mg/L)	4.26	4.49	4.90
BOD	(mg/L)	<2	<2	1.7 U	BOD	(mg/L)	<2	<2	1.7 U
COD	(mg/L)	<5	12.2	23.3 J	COD	(mg/L)	<5	9.6	14.2 J
Chloride	(mg/L)	569	542	263	Chloride	(mg/L)	83.2	81.0	112.0
Nitrate	(mg/L)	nv	0.61	0.85	Nitrate	(mg/L)	nv	<0.05	0.04 U
Nitrite	(mg/L)	nv	<0.05	0.015 U	Nitrite	(mg/L)	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	0.75	0.42		Nitrate+Nitrite as Nitrogen	(mg/L)	<0.05	<0.05	
Sulfate	(mg/L)	172	164	148 J	Sulfate	(mg/L)	230	223	229 J
Sulfide	(mg/L)	<1	<1	0.054 U	Sulfide	(mg/L)	<1	1.94	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-7A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.2	0.0	0.0	1.3	0.1	0.2	1.4	2.1	0.9	2.2	2.0	3.6	3.0	1.6
Total Fe (lab measurement)	(mg/L)	nv	1.0 J	26.5 J	21.2 J	11.9	8.62	13.6	10.5 J	11.2 J*	81.15 J*	33.9 J	20	3.7	2.68
Fe+3 (calculated)	(mg/L)	nc	1.0	26.5	19.9	11.8	8.4	12.2	8.4	10.3	79.0	31.9	16.4		
Methane	(ug/L)	16	7	11	13	8.6 J	4.7	4.2	7.3	10.5*	17*	10	10	8.6	260
Ethane	(ug/L)	2	1	1.9	2.1	1 J	<1	<1	<1	1.4*	2.55*	1.3	0.95 J	0.44 J	1 U
Ethene	(ug/L)	2	2	2.4	5.9	7 J	4.1	3.7	<1	3.75*	4.45*	2.9	8.5	5.3	51
Propane	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1*	<1*	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1*	<1*	<1	nv		
TOC	(mg/L)	<10	<4	3.6	4.5 J	2	<1	2.1	2.0	1.95*	4.05*	<1	2.74	2.23	3.20
BOD	(mg/L)	<2	<2	<2	<2	<2	<2	<2.2	<2	<2*	<2*	<2	<1	<1	44.2 U
COD	(mg/L)	33.2	<5	<5 J	9.3 J	<5 J	<10	<10	14.4	<10*	<10 UJ*	27.4	7.97 J	5.42	23.3 J
Chloride	(mg/L)	56.7	36.2	43.3	37.8	35.7	28.8	36.3	29.5	24.25*	23.85*	21.6	21	17.3	21.8
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05*	<0.05	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05*	<0.05*	<0.05	nv	0.24	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	0.24	
Sulfate	(mg/L)	50.4	340	128 J	239	398	249	348	266	246*	241.5*	282	250	210	233 J
Sulfide	(mg/L)	3.4	<1	1.8	<1	<1	<0.2	<0.1	<0.1	<0.1*	<0.10*	<0.10	<1	<1	2.2

Notes:

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** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-7B												
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.4**	0.0	0.1	0.0	0.0	0.3**	0.0	0.0	0.0	0.0	0.0
Total Fe (lab measurement)	(mg/L)	nv	<0.05 J	0.1 J	0.8 J	0.142	0.606	0.056	<0.05 J	0.056 J	0.05 J	0.05 J	0.177	<0.05
Fe+3 (calculated)	(mg/L)	nc	<0.05	nc	0.8	0.0	0.6	0.1	<0.05	0.1	0.1	0.1	0.2	
Methane	(ug/L)	270	120	230	260	280 J	200	190	190	220	180	150	220	230
Ethane	(ug/L)	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	0.31 J	0.44 J
Ethene	(ug/L)	1	<1	<1	1.5	1.5 J	1.4	<1	<1	1.0	1.3	1.6	1.9	2.8
Propane	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	nv	<1
TOC	(mg/L)	3.2	4.6	3.7	6 J	2.7	2.4	3.3	2.9	3.5	3.4	1.5	3.41	3.45
BOD	(mg/L)	<2	<2	<2	<2	<2	<2	<2.2	<2	<2	<2	<2	<2	<2
COD	(mg/L)	<5	5.7	<5 J	14.6 J	<5 J	<10	<10	21.7	<10	<10 UJ	<10	6.58 J	11.6
Chloride	(mg/L)	97.3	88.8	98.9	95.6	117	96.3	140	82.0	118	137	104	157	130
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	nv	<0.05
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	0.0758	<0.05
Sulfate	(mg/L)	250	248	272 J	218	388	197	320	251	219	237	233	298	278
Sulfide	(mg/L)	<1	<1	<1	<1	<1	0.11	0.1	0.14	<0.1	<0.10	<0.10	<1	<1

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-10A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	1.0	0.5	1.8	3.1	1.6	0.0	2.8	2.2	2.8	2.1	0.8	3.2	2.8	2.2
Total Fe (lab measurement)	(mg/L)	nv	2.8	33.2* J	35.4* J	21.9 J	24.2*	19.0	43.4 J	29.4 J	23.1 J	26.3 J	10.7	32.1	2.99
Fe+3 (calculated)	(mg/L)	nc	2.3	31.4	32.3	20.3	24.2*	16.2	41.2	26.6	21.0	25.5	7.5		
Methane	(ug/L)	72	40	40*	63*	37	68*	35	43	40	33	45	19	60	38
Ethane	(ug/L)	3	2.8	3.2*	2.15*	1.8	3.9*	1.6	2.4	1.5	<1	1.3	0.52 J	4.4	1 U
Ethene	(ug/L)	9	7.7	6*	11.5*	7	9.3*	4.6	5.3	6.5	5.4	8.4	4.6	11.0	10.0
Propane	(ug/L)	<1	<1	<1	<1	<1	<1*	<1	<1	<1	<1	<1	<1	2.7	1 U
Propene	(ug/L)	<1	<1	<1	<1	<1	<1*	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	<4	<10	2.8*	2.75*	1.6	<1*	1.8	1.7	1.5	2.5	<1	1.93	2.99	1.6
BOD	(mg/L)	<2	<2	<2	<2 J	<2	<2*	<2.2	<2	<2	<2	<2	<2	<2	1.8 U
COD	(mg/L)	9.4	6.3	7.2* J	9.7* J	<5 J	<10*	<10	<10	<10	<10 UJ	15.4	8.32 J	10.1	46.2 J
Chloride	(mg/L)	560	558	646*	812*	703	728*	972	1080	1040	1020	916	815	884	903
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	0.085	<0.05	<0.05	<0.05	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05*	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	398	254	338*	406*	564	197*	313	325	376	276	305	332	294	279 J
Sulfide	(mg/L)	<1	<1	<1	<2	<1	<0.1*	0.26	0.13	<0.1	<0.10	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

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* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-10B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.4	0.9	0.6	1.8**	1.1**	0.6	0.9**	0.5	0.5	0.6	1.2	0.5	1.6
Total Fe (lab measurement)	(mg/L)	nv	0.5	1.1 J	2.5 J	1.39 J	0.737	0.66	0.782 J	1.44 J	0.559 J*	0.578 J	0.945	0.497	0.648
Fe+3 (calculated)	(mg/L)	nc	0.1	0.2	1.9	nc	nc	0.1	<0.05	0.9	0.1	nc	-0.3		
Methane	(ug/L)	89	50	90	39	83	67	54	77	94	87	75	100	96	94
Ethane	(ug/L)	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.43 J	0.48	1 U
Ethene	(ug/L)	3	<1	2	<1	1.3	<1	<1	<1	<1	<1	<1	1.5	1 J	2.2 J
Propane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1	0.94 J	2.8 J
Propene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	3.4	4.5	4	4.9	4.1	2.7	4.2	5.7	3.8	4.25*	1.9	3.81	4.22	4.6
BOD	(mg/L)	<2	<2	<2	<2 J	<2	<2	<4.5	<2	<2	<2*	<2	<2	<2	2.1 U
COD	(mg/L)	<5	<5	5.4 J	15.5 J	<5 J	12.9	<10	<10	<10	17 J*	87.2	<5	12.7	16.5 J
Chloride	(mg/L)	99.8	76.5	104	78.4	119	76.6	84.8	75.8	87.9	88.25*	77.8	226	87.4	107
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	254	274	301	238	296	193	345	242	231	232.5*	256	236	198	245 J
Sulfide	(mg/L)	<1	<1	<1	<1	<1	0.1	<0.1	0.11	<0.1	<0.10*	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-14A												
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	1.3	nv	0.5	1.0	1.0	0.0	0.7	1.5	1.4	1.4	1.4	0.6	0.8
Total Fe (lab measurement)	(mg/L)	nv	0.5	2 J	44.4 J	59.3 J	50.4	49.5	39.4 J	49.2 J	63.4	27.3	43.6	5.15
Fe+3 (calculated)	(mg/L)	nc	nv	1.5	43.4	58.3	50.4	48.8	37.9	47.8	62.0	25.9		
Methane	(ug/L)	36	10	30	23	22	16	14	45	30	29	22	15	17
Ethane	(ug/L)	3	<1	2.2	2.2	1.2	1.8	1.5	2.3	1.3	1.4	1.5	0.64 J	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propane	(ug/L)	<1	<1	<1	1.4	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	<1	<1	1.5	<1	<1	<1	<1	<1	<1	<1	<1	1 U
TOC	(mg/L)	<10	<20	3.9	4	3.5	3.2	3.7	2.6	3.3	5.6	3.1	5.4	4.2
BOD	(mg/L)	<2	2	<2	<2 J	<2	<2	<2	3.3	<2	<2	<2	<2	1.4 U
COD	(mg/L)	34.2	27.9	11.6 J	16.2 J	14.9 J	<10	13.4	12.4	<10	14.6	25.6	18.8	21 J
Chloride	(mg/L)	77.2	105	107	74.3	68.4	84.2	98.6	83.9	75.0	79.5	70.8	68.0	63.9
Nitrate	(mg/L)	<0.5J	0.087	<0.05	<0.05	<0.05	<0.05	0.28	0.2	0.14	0.14	0.27	<0.05	0.28
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	0.068	<0.05	<0.05	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	
Sulfate	(mg/L)	38.4	28.4	352	123	184	173	151	182	190	178	176	118	150 J
Sulfide	(mg/L)	<1	<1	1.8	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-14B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.5	0.0	0.0	0.5	0.0	0.3**	0.3**	0.5**	0.6**	0.5	0.3	0.0	1.0	0.4
Total Fe (lab measurement)	(mg/L)	nv	0.2	148 J	1.1 J	0.792 J	0.134	0.282	0.093 J*	<0.05 J	0.076	0.123	0.470	0.188	0.208
Fe+3 (calculated)	(mg/L)	nc	0.2	148.0	0.6	0.8	nc	nc	<0.05	nc	nc	nc	0.5		
Methane	(ug/L)	210	100	80	200	200	130	150	215*	180	180	160	110	200	130
Ethane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1*	<1	<1	<1	<1	0.56J	1 U
Ethene	(ug/L)	2	<1	<1	1.1	1.4	<1	<1	<1*	<1	1	<1	<1	1.7	2.2 J
Propane	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1*	<1	<1	<1	<1	0.62 J	1 U
Propene	(ug/L)	<1	<1	<1	<1	<1	<1	<1	<1*	<1	<1	<1	nv		
TOC	(mg/L)	2.8	4.3	4.6	3.8	2.8	2.5	3.1	1.4*	2.8	3.2	2.2	4.07	3	3.5
BOD	(mg/L)	<2	<2	<2	<2 J	<2	<2	<2	3.65*	<2	<2	<2	<2	<2	2.1 U
COD	(mg/L)	8.4	<5	23.1 J	8.7 J	<5 J	10.4	<10	18.0*	<10	11.4	<10	6.58 J	10.1	23.3 J
Chloride	(mg/L)	93.2	89.5	85.5	124	116	110	126	87.5*	121	113	24.6	119	136	133
Nitrate	(mg/L)	<0.5J	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05	<0.05	nv	<0.05	0.04 U
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05*	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	0.269 J	
Sulfate	(mg/L)	308	251	151	248	398	391	391	306*	325	252	326	263	254	310 J
Sulfide	(mg/L)	<1	<1	1.7	<1	<1	<0.1	0.12	0.18*	0.21	<0.10	<0.10	<1	<1	0.5

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-16A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	Well Dry	nv	1.0	nv	0.0	0.0	0.0	0.0	0.3	0.2	0.0	nv	0.2	0.1
Total Fe (lab measurement)	(mg/L)	No Sample	nv	4.9 J	5.8	3.37 J	9.37	12.5	7.61 J	8.26 J	8.16	4.86	2.08	2.48	0.198 J
Fe+3 (calculated)	(mg/L)	Collected	nv	3.9	nc	3.4	9.4	12.5	7.6	8.0	8.0	4.9	nc		
Methane	(ug/L)		6.3	4.3	1.8	3.1	1.6	3.6	1.4	1.9	4.2	2.7	60	4.5	11 J
Ethane	(ug/L)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.87 J	<1	1 U
Ethene	(ug/L)		<1	<1	<1	<1	<1	1.6	<1	1.1	3.8	2.2	15	0.62 J	4.7 J
Propane	(ug/L)		nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)		nv	<1	<1	<1	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)		8.7	8.4	7.4	6.8	4.7	6.6	4.9	5.9	4.7	4.6	6.93	6.5	7.2
BOD	(mg/L)		<2	<2	<2 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.7 U
COD	(mg/L)		38.2J	23.5 J	25.3	12.7 J	14.6	<10	16.4	15.4	26.8	<10	23.2 J	20.4	41.6 J
Chloride	(mg/L)		327	334	385	349	367	347	259	308	86.2	289	278	209	247 J
Nitrate	(mg/L)		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.12	0.076	<0.05	nv	<0.05	R
Nitrite	(mg/L)		<0.02	<0.02	<0.02 R	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	0.0612	
Sulfate	(mg/L)		1250J	1060	955	1060	993	1080	985	1120	41.1	1080	981	1020	1060
Sulfide	(mg/L)		<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	1.2	<0.10	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-16B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	nv	0.7	0.3	0.0	0.0	0.4	0.4	0.3	nv	0.3	1.0	0.5	0.3
Total Fe (lab measurement)	(mg/L)	nv	0.3 J	160 J	6.8	4.65 J	1.92	16.9	0.588 J	1.2 J	3.11	0.76	0.505	0.669	0.469
Fe+3 (calculated)	(mg/L)	nc	nv	159.3	6.5	4.7	1.9	16.5	0.2	0.9	nc	0.5	-0.5		
Methane	(ug/L)	132.5	120	110	17	200	150	160	190	200	130	140	190	220	150
Ethane	(ug/L)	<1	<1	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.7 J	1 U
Ethene	(ug/L)	<1	<1	<1	<1	2.9	3	2.5	24	3.3	2.2	1.9	3.7	3.1	3.2 J
Propane	(ug/L)	<1	nv	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	1.7	<1	<1	<1	<1	<1	<1	<1	nv		
TOC	(mg/L)	5.6	5.9	8.8	4.3	5.2	3.4	4.2	4.1	3.9	2.8	2.9	3.7	3.81	3.7
BOD	(mg/L)	<2	<2	11.2	8.6 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8 U
COD	(mg/L)	10.35	46.1J	135 J	48.2	22.2 J	22.2	49	<10	<10	17.5	22.9	<5	10.1	18.8 J
Chloride	(mg/L)	95.1J	74.2	88.4	62.4	78.1	86.6	90.4	79	83.3	13	88.1	114	106	120 J
Nitrate	(mg/L)	<0.5J	0.062	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02 R	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	500.5J	510J	258	170	159	173	267	264	251	90.2	277	269	264	286
Sulfide	(mg/L)	<1	<1	3.2	<1	<1	<0.1	0.12	0.28	0.11	<0.10	0.13	<1	1.1	0.22

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

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* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-17A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.6	2.5**	1.2	2.0	3.2	1.8	2.0	3.4	2.8	3.6	3.0	3.5	3.8	3.0
Total Fe (lab measurement)	(mg/L)	nv	1.7 J	142 J	39.6 J	52.4	14.6	8.25	16.8 J*	32.2 J	11.5	15.4 J	11.9	7.05	3.81
Fe+3 (calculated)	(mg/L)	nc	1.7	140.8	37.6	49.2	12.8	6.3	13.4	29.4	7.9	12.4	8.4		
Methane	(ug/L)	61	78	100	120	98 J	78	52	62*	81	57	49	60	77	97
Ethane	(ug/L)	4	7.1	3.1	2.6	4 J	<1	<1	<1*	<1	<1	<1	<1	<1	1 U
Ethene	(ug/L)	1	<1	<1	1.3	4.2 J	1.1	<1	<1*	<1	<1	<1	0.42 J	1.5	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1*	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1*	<1	<1	<1	nv		
TOC	(mg/L)	4.3	<20	3.9	3	2.5	<1	1.9	1.8*	2.1	2.8	<1	2.51	2.2	2.9
BOD	(mg/L)	<2	<2	<2	<2 J	<2	<2	<2	<2*	<2	<2	<2	<2	<2	1.9 U
COD	(mg/L)	19.6	30J	44.8 J	13.9 J	17.6 J	<10	<10	12.6*	<10	10.8	<10	11.4 J	11	59.9 J
Chloride	(mg/L)	612J	640	845	982	1090	924	1270	1000*	1010	1080	1120	1400	1120	1130 J
Nitrate	(mg/L)	<0.5J	0.052	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05*	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	76.9J	220J	156	202	274	159	252	227*	196	181	182	134	153	192
Sulfide	(mg/L)	<1	<1	1.7	<1	<1	<0.1	<0.1	<0.1*	<0.1	<0.10	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-17B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	May-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.3	1.4	--	1.9	1.2	1.4	1.0	1.0	1.0	1.2	1.2	0.0
Total Fe (lab measurement)	(mg/L)	nv	0.1 J	71.1 J	11.2 J	89.4	5.16	4.61	2.82 J	3.76 J	2.89	6.00 J*	2.92	2.94	1.45 J
Fe+3 (calculated)	(mg/L)	nc	0.1	70.8	9.8	--	3.3	3.4	1.4	2.8	1.9	5.0*	1.7		
Methane	(ug/L)	96	93	70	180	160 J	150	110	150	150	140	203*	180	160	89
Ethane	(ug/L)	5	7.8	<1	4.6	6.7 J	<1	<1	<1	<1	<1	<1*	0.66 J	0.53 J	2 J
Ethene	(ug/L)	1	<1	<1	2.9	3.5 J	5.4	2.7	<1	5.3	4.7	3.2*	2.8	4	14
Propane	(ug/L)	<1	nv	<1	1.1	<1 J	<1	<1	<1	<1	<1	<1*	<1	<1	1.1 J
Propene	(ug/L)	<1	nv	<1	<1	<1 J	<1	<1	<1	<1	1.5	<1*	nv		
TOC	(mg/L)	4.8	<10	4.1	4	3.9	1.8	2.8	3.3	3.2	3.5	1.0*	3.31	3.06	3.1
BOD	(mg/L)	<2	<2	4.6	<2 J	4.9	<2	<2	<2	<2	<2	<2*	<2	<2	2.2 U
COD	(mg/L)	24.3	13.6J	84.2 J	27 J	61.2 J	<10	<10	<10	<10	13.6	21.9*	9.7 J	10.4	53.1 J
Chloride	(mg/L)	124J	107	495	461	445	359	412	241	381	477	434*	431	475	720 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	56.2J	244J	110	196	340	91.8	371	252	226	221	252*	209	211	195
Sulfide	(mg/L)	<1	<1	2.6	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.10	0.10*	<1	<1	0.1 J

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-18A													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.0	0.0	0.0	1.5	1.2	0.0	0.9	0.8	1.0	1.2	1.4	1.6	1.2	0.0
Total Fe (lab measurement)	(mg/L)	nv	1.0 J	35.7 J	18.6 J	24.75* J	17.7	18.55 *	11.2 J	7.7 J	8.98	9.26 J	5.48	2.01	1.21
Fe+3 (calculated)	(mg/L)	nc	1.0	35.7	17.1	11.2	17.7	17.7	10.4	6.7	7.8	7.9	3.9		
Methane	(ug/L)	35	27	30	32	15.5*	22	18 *	22	15	24	23	17	16	23
Ethane	(ug/L)	7	5.6	3.9	1.6	<1*	<1	1.75 *	<1	<1	<1	<1	0.38 J	<1	1 U
Ethene	(ug/L)	<1	<1	<1	<1	<1*	<1	<1 *	<1	<1	<1	<1	<1	<1	1 U
Propane	(ug/L)	<1	nv	<1	<1	<1*	<1	1.0 *	<1	<1	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1*	<1	<1 *	<1	<1	<1	<1	nv		
TOC	(mg/L)	2.8	<1	2.4	2.6	1.85*	1.3	2.15 *	<1	2.0	2.1	<1	1.79	1.56	1.50
BOD	(mg/L)	<2	<2	<2	<2 J	<2*	<2	<2.1 *	2.8	<2	<2	<2	<2	<2	1.4 U
COD	(mg/L)	12	6.7J	<5 J	<5 J	10.5* J	<10	11.9 *	<10	<10	13.3	<10	<5	<5	14.2 J
Chloride	(mg/L)	58.6J	40.2	45.4	48.2	69.4*	46.8	68.1 *	57.6	58.4	72.7	69.9	74.2	79.6	90.2 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05 *	<0.05	<0.05	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02*	<0.05	<0.05 *	<0.05	<0.05	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	130J	590J	125	136	166.5*	173	167 *	139	156	147	135	125	133	130
Sulfide	(mg/L)	<1	<1	<1	<1	<1*	<0.1	<0.1 *	0.1	<0.1	<0.10	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

Table B.6
Laboratory Analytical Results for Natural Attenuation Parameters
Former Carborundum Company, Hyde Park Facility (1999 through 2009)

Monitoring Well I.D.		MW-18B													
Parameter	Units	Oct-00	May-01	Nov-01	May-02	Oct-02	May-03	Nov-03	May-04	Oct-04	Nov-05	May-06	Oct-07	Apr-08	Oct-09
Fe+2 (field measurement)	(mg/L)	0.6	0.0	0.5	0.9	1.8	0.3	0.6	0.8	0.5	0.7	0.7	1.0	1.0	0.8
Total Fe (lab measurement)	(mg/L)	nv	0.8 J	1.4 J	1.1 J	8.22 J	1.02	1.98	0.854 J	1.615 J*	0.933	0.815 J	1.26	1.14	0.806
Fe+3 (calculated)	(mg/L)	nc	0.8	0.9	0.2	6.4	0.7	1.4	0.1	1.1	0.2	0.1	0.3		
Methane	(ug/L)	120	40	40	94	100	110	74	35	120*	100	89	120	150	120
Ethane	(ug/L)	3	<1	<1	<1	4.5	<1	3.3	<1	<1*	<1	<1	<1	0.74 J	1 U
Ethene	(ug/L)	13	<1	<1	<1	<1	<1	<1	<1	1.05*	<1	1.2	2.1	2.4	2.3 J
Propane	(ug/L)	<1	nv	<1	<1	<1	<1	1.2	<1	<1*	<1	<1	<1	<1	1 U
Propene	(ug/L)	<1	nv	<1	<1	<1	<1	<1	<1	<1*	<1	<1	nv		
TOC	(mg/L)	4.5	5.6	4.5	5.4	5.6	3.2	5.2	2.4	4.0*	4.1	1.8	4.09	3.74	4.1
BOD	(mg/L)	<2	<2	<2	2.3 J	<2	<2	2.6	<2	<2*	<2	<2	<2	<2	1.7 U
COD	(mg/L)	12	15.9J	<5 J	29.6 J	22.2 J	15.6	<10	15.4	<10*	12.7	17.4	<5	9.86	23.3 J
Chloride	(mg/L)	103J	90.5	69.7	76.8	72.4	78.6	83	79	80.5*	91.5	80	80.9	88.1	93.8 J
Nitrate	(mg/L)	<0.5J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05	nv	<0.05	R
Nitrite	(mg/L)	na	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05*	<0.05	<0.05	nv	<0.05	0.015 U
Nitrate+Nitrite as Nitrogen	(mg/L)	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	<0.05	<0.05	
Sulfate	(mg/L)	279J	348J	292	165	348	230	349	253	255*	278	233	261	270	296
Sulfide	(mg/L)	<1	<1	<1	<1	<1	0.13	<0.1	<0.1	<0.1*	<0.10	<0.10	<1	<1	0.054 U

Notes:

J indicates an estimated value

R indicates that data is unusable

nv indicates no value

nc indicates value could not be calculated based on available data

* indicates reported concentration is average value of sample and duplicate sample concentrations

** Field measurement exceeded lab value

APPENDIX C

DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT

HYDE PARK FACILITY

Prepared For:

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SECTION 1

DATA USABILITY SUMMARY

Groundwater samples were collected from the Hyde Park site in Niagara Falls, New York from October 27, 2009 through November 3, 2009. Analytical results from these samples were reviewed by Parsons for usability with respect to the following requirements:

- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs).

The analytical laboratory for this project was Lancaster Laboratories, Inc. (LLI). This laboratory is approved to conduct project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 31 days on average for the Hyde Park samples. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report.

1.2 SAMPLING AND CHAIN-OF-CUSTODY

The samples were collected, properly preserved, shipped under a COC record, and received at the laboratory within one to two days of sampling. All samples were received intact and in good condition at LLI.

1.3 LABORATORY ANALYTICAL METHODS

The groundwater samples collected from the Hyde Park site were analyzed for volatile organic compounds (VOCs) including propane, methane, ethane, and ethene, iron, chloride, nitrate, nitrite, sulfate, sulfide, biochemical oxygen demand (BOD), chemical oxygen demand (COD), and/or total organic carbon (TOC). Summaries of issues concerning these laboratory analyses are presented in Subsections 1.3.1 through 1.3.3. The data qualifications resulting from the data review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, and comparability (PARCC) are discussed for each analytical method in Section 2. The laboratory data were reviewed and may be qualified with the following validation flags:

- "U" - not detected at the value given,
- "UJ" - estimated and not detected at the value given,
- "J" - estimated at the value given,
- "N" - presumptive evidence at the value given, and
- "R" - unusable value.

The validated laboratory data were tabulated and are presented in Attachment A.

1.3.1 Volatile Organic Analysis Including Methane, Propane, Ethane, and Ethene

The groundwater samples collected from the Hyde Park site were analyzed for VOCs using the USEPA SW-846 8260B analytical method. In addition, certain groundwater samples were analyzed for methane, propane, ethane, and ethene using the modified USEPA approved RSK-175 analytical method. Certain reported results for the VOC samples were considered estimated based upon instrument calibrations. Certain reported results for the VOC samples were considered unusable and qualified "R" based upon poor instrument calibration linearity. The reported VOC and methane, propane, ethane, and ethene analytical results were 99.6% complete (i.e., usable) based upon the groundwater data presented. PARCC requirements were met.

1.3.2 Iron Analysis

Certain groundwater samples collected from the Hyde Park site were analyzed for iron using the USEPA SW-846 6010B analytical method. Certain reported iron results were considered estimated based upon matrix spike recoveries. The reported iron analytical results were 100% complete (i.e., usable) based upon the groundwater data presented. PARCC requirements were met.

1.3.3 Other Parameters

Certain groundwater samples and one drum sample collected from the Hyde Park site were analyzed for chloride, nitrite, nitrate, sulfate, sulfide, BOD, COD, and/or TOC using the USEPA 300.0, 353.2, 353.2, 300.0, 376.1, SM 4500 S2D, 5210B, 410.4, and 5310C analytical methods, respectively. Holding times, laboratory blanks, matrix spike/matrix spike duplicate, laboratory duplicate precision, laboratory control samples, instrument calibrations, quantitation limits, sample result identification, field duplicate precision, sample custody, and completeness were reviewed for compliance. The reported results for these parameters did not require qualification resulting from data validation with the exception of the following:

- The reported chloride and COD results for samples collected on 10/27/09 and 10/28/09 were considered estimated, possibly biased low, with positive results qualified "J" and nondetected results qualified "UJ" based upon low matrix spike recoveries for these analytes;
- Nitrate results for samples collected on 10/27/09 and 10/28/09 which were nondetects, were considered unusable and qualified "R" based upon 0% matrix spike recoveries for this analyte;

- Positive sulfate results for samples collected on 10/29/09, 10/30/09, and 11/2/09 were considered estimated, possibly biased high, and qualified “J” based upon a high matrix spike recovery; and
- TOC results for samples collected on 11/3/09 were considered estimated with the positive results qualified “J” based upon a high laboratory duplicate precision.

The reported analytical results for the wet chemistry parameters were 93.5% complete (i.e., usable) based upon the groundwater data presented. PARCC requirements were met.

SECTION 2

DATA VALIDATION REPORT

2.1 GROUNDWATER SAMPLES

Data review has been completed for data packages generated by LLI containing groundwater samples collected from the Hyde Park site. The specific samples contained in these data packages, the analyses performed, and a usability summary are presented in Table 2.1-1. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory. The validated laboratory data are presented in Attachment A.

Data validation was performed for all samples in accordance with the most current editions of the USEPA Region II SOPs and the NYSDEC ASP for organic and inorganic data review. This data validation and usability report is presented by analysis type.

2.1.1 Volatiles Including Methane, Propane, Ethane, and Ethene

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank contamination
- Instrument performance
- Initial and continuing calibrations
- Internal standard responses
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of MS/MSD precision and accuracy, LCS recoveries, and initial and continuing calibrations as discussed below.

MS/MSD Precision and Accuracy

All MS/MSD precision (relative percent difference; RPD) and accuracy (percent recovery; %R) measurements were within QC acceptance limits for designated spiked project samples with

the exception of the low MS accuracy result for cis-1,2-dichloroethene during the spiked analyses of sample MW-17B. Validation qualification of the parent sample was not required since the MSD accuracy result for this compound was within the QC limit.

LCS Recoveries

All LCS recoveries were considered acceptable and within QC limits with the exception of the high LCS recovery for 1,2-dichloroethane (131%R; QC limit 70-130%R) associated with samples collected on 10/30/09. Validation of this compound was not required since this compound was not detected in these samples.

Initial and Continuing Calibrations

All initial calibration compounds were compliant with a minimum mean relative response factor (RRF) of 0.05 and a maximum percent relative standard deviation (%RSD) of 30% with the exception of acetone (RRF=0.0352) in the initial calibration associated with samples collected on 11/2/09. Therefore, the acetone results for these samples which were nondetects were considered unusable and qualified "R".

All continuing calibration compounds were compliant with a minimum RRF of 0.05 and a maximum percent difference (%D) within $\pm 25\%$ with the exception of bromomethane (32%D) in the continuing calibration associated with samples collected on 10/29/09 with the exception of sample MW-14A; 1,2-dichloroethane (27%D) in the continuing calibration associated with samples collected on 10/30/09; acetone (RRF=0.032) in the continuing calibration associated with samples collected on 11/2/09; and 1,2-dichloroethane (30%D) in the continuing calibration associated with samples collected on 11/3/09. Therefore, the sample results for these compounds were considered estimated with positive results qualified "J" and nondetected results qualified "UJ" for the affected samples. However, the nondetected acetone results were considered unusable and qualified "R" for the affected samples.

Usability

All volatile groundwater sample results including methane, propane, ethane, and ethene were considered usable following data review with the exception of certain nondetected acetone results based upon poor calibration linearity.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The volatile groundwater data presented were 99.6% (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A.

2.1.2 Iron

The following items were reviewed for compliancy in the iron analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration, and preparation blank contamination
- Initial and continuing calibration verifications
- Interference check sample recoveries
- Matrix spike (MS) recoveries
- Laboratory duplicate precision
- Field duplicate precision
- Laboratory control sample recoveries
- Serial dilutions
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of MS recoveries as discussed below.

MS Recoveries

All MS recoveries of designated spiked project samples were considered acceptable and within QC limits for all sample analyte concentrations less than four times the spiked concentrations with the exception of the high MS recovery for iron (127%R; QC limit 75-125%R) associated with samples collected on 10/27/09 and 10/28/09. Therefore, positive iron results were considered estimated, possibly biased high, and qualified “J” for these samples.

Usability

All iron sample results were considered usable following data review.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The iron data presented were 100% complete (i.e., usable). The validated groundwater laboratory data are tabulated and presented in Attachment A.

TABLE 2.1-1

**SUMMARY OF SAMPLE ANALYSES AND USABILITY
HYDE PARK – GROUNDWATER**

<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>SAMPLE DATE</u>	<u>VOCs</u>	<u>METHANE, PROPANE, ETHANE, ETHENE</u>	<u>IRON</u>	<u>OTHER</u>	<u>FOOTNOT E</u>
MW-1A	WATER	10/27/09	OK	OK	OK	NO	1
MW-1B	WATER	10/27/09	OK	OK	OK	NO	1
MW-3A	WATER	10/27/09	OK	OK	OK	NO	1
MW-3B	WATER	10/27/09	OK	OK	OK	NO	1
MW-16A	WATER	10/27/09	OK	OK	OK	NO	1
MW-16B	WATER	10/27/09	OK	OK	OK	NO	1
MW-18A	WATER	10/27/09	OK	OK	OK	NO	1
MW-18B	WATER	10/27/09	OK	OK	OK	NO	1
MW-2A	WATER	10/28/09	OK				
MW-2B	WATER	10/28/09	OK				
MW-17A	WATER	10/28/09	OK	OK	OK	NO	1
MW-17B	WATER	10/28/09	OK	OK	OK	NO	1
MW-17I	WATER	10/28/09	OK	OK	OK	NO	1
MH-1	WATER	10/28/09	OK				
MH-2	WATER	10/28/09	OK				
MH-3	WATER	10/28/09	OK				
MW-5A	WATER	10/29/09	OK	OK	OK	OK	
MW-5B	WATER	10/29/09	OK	OK	OK	OK	
MW-10A	WATER	10/29/09	OK	OK	OK	OK	
MW-10B	WATER	10/29/09	OK	OK	OK	OK	
MW-13A	WATER	10/29/09	OK				
MW-13B	WATER	10/29/09	OK				
MW-14A	WATER	10/29/09	OK	OK	OK	OK	
MW-14B	WATER	10/29/09	OK	OK	OK	OK	
MW-6	WATER	10/30/09	OK				
MW-60	WATER	10/30/09	OK				
MW-7A	WATER	10/30/09	OK	OK	OK	OK	
MW-7B	WATER	10/30/09	OK				
MW-11A	WATER	10/30/09	OK				
MW-11B	WATER	10/30/09	OK	OK	OK	OK	
MW-8	WATER	11/2/09	NO				2

TABLE 2.1-1 (CONTINUED)
SUMMARY OF SAMPLE ANALYSES AND USABILITY
HYDE PARK – GROUNDWATER

<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>SAMPLE DATE</u>	<u>VOCs</u>	<u>METHANE, PROPANE, ETHANE, ETHENE</u>	<u>IRON</u>	<u>OTHER</u>	<u>FOOTNOTE</u>
MW-12A	WATER	11/2/09	NO				2
MW-12B	WATER	11/2/09	NO				2
MW-19A	WATER	11/2/09	NO				2
MW-19B	WATER	11/2/09	NO				2
MW-4A	WATER	11/3/09	OK	OK	OK	OK	
MW-4B	WATER	11/3/09	OK	OK	OK	OK	
MW-15	WATER	11/3/09	OK				
TOTAL SAMPLES			38	21	21	21	

NOTES: OK - Sample analysis considered valid and usable.
 NO - Sample analysis has noncompliances resulting in unusable data. See appropriate footnote.

FOOTNOTE: 1 – Poor matrix spike recoveries for nitrate.
 2 – Poor calibration linearity for acetone.

ATTACHMENT A

VALIDATED LABORATORY DATA

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168323		Sample ID: Lab Sample Id	MW- 1A 5818420	MW- 1B 5818421	MW- 3A 5818422	MW- 3B 5818423	MW-16A 5818424
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168323	1168323	1168323	1168323	1168323
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/27/2009	10/27/2009	10/27/2009	10/27/2009	10/27/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1 U	1.7 J	1 U	2.9 J	75
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	0.8 U	1.3 J	0.8 U	1.5 J	8.2
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	1 U	1 U	1 U
74-85-1	Ethene	ug/l	1 U	1 U	1 U	1 U	4.7 J
74-82-8	Methane	ug/l	30	59	14 J	170	11 J
74-98-6	Propane	ug/l	1 U	1 U	1 U	1 U	1 U
	METALS						
7439-89-6	Iron	mg/l	2.99 J	1.52 J	0.583 J	0.0736 J	0.198 J
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l	2	4.5	2.2	3.8	7.2
16887-00-6	Chloride	mg/l	140 J	71.8 J	15.9 J	121 J	247 J
14808-79-8	Sulfate	mg/l	141	218	250	254	1060
BOD	Biochemical Oxygen Demand	mg/l	1.7 U	1.6 U	1.9 U	2.2 U	1.7 U
COD	Chemical Oxygen Demand	mg/l	16.5 J	32.5 J	25.6 J	16.5 J	41.6 J
14797-55-8	Nitrate Nitrogen	mg/l	R	R	R	R	R
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
18496-25-8	Sulfide	mg/l	0.054 U	0.054 U	0.054 U	0.9	0.054 U

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168323		Sample ID: Lab Sample Id	MW-16B 5818427	MW-18A 5818425	MW-18B 5818426
		Source:	Lancaster	Lancaster	Lancaster
		SDG:	1168323	1168323	1168323
		Matrix:	WATER	WATER	WATER
		Sampled:	10/27/2009	10/27/2009	10/27/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:			
	VOLATILES				
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	130	7	220
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.93 J	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	1.8 J	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	4.7 J	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	510	43	62
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	1.3 J	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	25	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	1 U
74-85-1	Ethene	ug/l	3.2 J	1 U	2.3 J
74-82-8	Methane	ug/l	150	23	120
74-98-6	Propane	ug/l	1 U	1 U	1 U
	METALS				
7439-89-6	Iron	mg/l	0.469 J	1.21 J	0.806 J
	OTHER				
7440-44-0	Carbon, Total Organic (TOC)	mg/l	3.7	1.5	4.1
16887-00-6	Chloride	mg/l	120 J	90.2 J	93.8 J
14808-79-8	Sulfate	mg/l	286	130	296
BOD	Biochemical Oxygen Demand	mg/l	1.8 U	1.4 U	1.7 U
COD	Chemical Oxygen Demand	mg/l	18.8 J	14.2 J	23.3 J
14797-55-8	Nitrate Nitrogen	mg/l	R	R	R
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U
18496-25-8	Sulfide	mg/l	0.22	0.054 U	0.054 U

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168556		Sample ID: Lab Sample Id	MH-1 5819913	MH-2 5819914	MH-3 5819915	MW- 2A 5819916	MW- 2B 5819917
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168556	1168556	1168556	1168556	1168556
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/28/2009	10/28/2009	10/28/2009	10/28/2009	10/28/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1 U	1 U	1 U	1.3 J	16
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1.2 J	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	6	0.8 U
67-64-1	Acetone	ug/l	18 J	26	16 J	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	26	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	2.1 J	1.7 J	1.8 J	0.8 U	9.1
67-66-3	Chloroform	ug/l	1.1 J	1.6 J	1.3 J	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	7.6	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1.8 J	1.5 J	1.8 J	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	1.1 J	1.1 J	1.1 J	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l					
74-85-1	Ethene	ug/l					
74-82-8	Methane	ug/l					
74-98-6	Propane	ug/l					
	METALS						
7439-89-6	Iron	mg/l					
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l					
16887-00-6	Chloride	mg/l					
14808-79-8	Sulfate	mg/l					
BOD	Biochemical Oxygen Demand	mg/l					
COD	Chemical Oxygen Demand	mg/l					
14797-55-8	Nitrate Nitrogen	mg/l					
14797-65-0	Nitrite Nitrogen	mg/l					
18496-25-8	Sulfide	mg/l					

			Dup of MW-17A		
Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168556			Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	MW-17A 5819911 Lancaster 1168556 WATER 10/28/2009 12/21/2009	MW-171 5819912 Lancaster 1168556 WATER 10/28/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:			
	VOLATILES				
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	25	23	69
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	14	13	3.1 J
67-64-1	Acetone	ug/l	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	1.6 J	1.5 J	2.2 J
75-34-3	1,1-Dichloroethane	ug/l	30	29	26
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	180	170	280
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	22	21	3.1 J
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	2 J
74-85-1	Ethene	ug/l	1 U	1 U	14
74-82-8	Methane	ug/l	97	100	89
74-98-6	Propane	ug/l	1 U	1 U	1.1 J
	METALS				
7439-89-6	Iron	mg/l	3.81 J	3.69 J	1.45 J
	OTHER				
7440-44-0	Carbon, Total Organic (TOC)	mg/l	2.9	2.9	3.1
16887-00-6	Chloride	mg/l	1130 J	1040 J	720 J
14808-79-8	Sulfate	mg/l	192	183	195
BOD	Biochemical Oxygen Demand	mg/l	1.9 U	2.3 U	2.2 U
COD	Chemical Oxygen Demand	mg/l	59.9 J	57.7 J	53.1 J
14797-55-8	Nitrate Nitrogen	mg/l	R	R	R
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U
18496-25-8	Sulfide	mg/l	0.054 U	0.054 U	0.1 J

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Even Former Carborundum Company, Hyde Park Facility SDG: 1168720		Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	MW- 5A 5821222 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW- 5B 5821224 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-10A 5821226 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-10B 5821228 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-13A 5821223 Lancaster 1168720 WATER 10/29/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	1.8 J	37	140	150	1 U
74-83-9	Bromomethane	ug/l	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
75-00-3	Chloroethane	ug/l	2 U	2 U	2 U	2 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	1.5 J	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	9.4	3.8 J	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	6.4	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	5.9	39	400	370	0.8 U
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	1 U	1 U	
74-85-1	Ethene	ug/l	1 U	1 U	10	2.2 J	
74-82-8	Methane	ug/l	5.5 J	50	38	94	
74-98-6	Propane	ug/l	1 U	1 U	1 U	2.8 J	
	METALS						
7439-89-6	Iron	mg/l	0.137 J	0.743	2.99	0.648	
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l	1.1	4.9	1.6	4.6	
16887-00-6	Chloride	mg/l	263	112	903	107	
14808-79-8	Sulfate	mg/l	148 J	229 J	279 J	245 J	
BOD	Biochemical Oxygen Demanc	mg/l	1.7 U	1.7 U	1.8 U	2.1 U	
COD	Chemical Oxygen Demanc	mg/l	23.3 J	14.2 J	46.2 J	16.5 J	
14797-55-8	Nitrate Nitrogen	mg/l	0.85	0.04 U	0.04 U	0.04 U	
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	0.015 U	0.015 U	
18496-25-8	Sulfide	mg/l	0.054 U	0.054 U	0.054 U	0.054 U	

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Even Former Carborundum Company, Hyde Park Facility SDG: 1168720		Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	MW-13B 5821225 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-14A 5821227 Lancaster 1168720 WATER 10/29/2009 12/21/2009	MW-14B 5821229 Lancaster 1168720 WATER 10/29/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:			
	VOLATILES				
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	68	2.7 J	86
74-83-9	Bromomethane	ug/l	2 UJ	2 U	2 UJ
75-00-3	Chloroethane	ug/l	2 U	2 U	2 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	88	1.4 J	64
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	1 U
74-85-1	Ethene	ug/l	1 U	1 U	2.2 J
74-82-8	Methane	ug/l	17	17	130
74-98-6	Propane	ug/l	1 U	1 U	1 U
	METALS				
7439-89-6	Iron	mg/l		5.15	0.208
	OTHER				
7440-44-0	Carbon, Total Organic (TOC)	mg/l		4.2	3.5
16887-00-6	Chloride	mg/l		63.9	133
14808-79-8	Sulfate	mg/l		150 J	310 J
BOD	Biochemical Oxygen Demanc	mg/l		1.4 U	2.1 U
COD	Chemical Oxygen Demanc	mg/l		21 J	23.3 J
14797-55-8	Nitrate Nitrogen	mg/l		0.28	0.04 U
14797-65-0	Nitrite Nitrogen	mg/l		0.015 U	0.015 U
18496-25-8	Sulfide	mg/l		0.054 U	0.5

			Dup of MW- 6				
Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168915		Sample ID:	MW- 6	MW- 60	MW- 7A	MW- 7B	MW-11A
		Lab Sample Id	5822354	5822355	5822350	5822351	5822349
		Source:	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster
		SDG:	1168915	1168915	1168915	1168915	1168915
		Matrix:	WATER	WATER	WATER	WATER	WATER
		Sampled:	10/30/2009	10/30/2009	10/30/2009	10/30/2009	10/30/2009
		Validated:	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	69	72	150	24	1 U
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	49	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	85	92	210	7.3	0.8 U
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
79-01-6	Trichloroethene	ug/l	1 U	1 U	1.8 J	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l			1 U		
74-85-1	Ethene	ug/l			51		
74-82-8	Methane	ug/l			260		
74-98-6	Propane	ug/l			1 U		
	METALS						
7439-89-6	Iron	mg/l			2.68		
	OTHER						
7440-44-0	Carbon, Total Organic (TOC)	mg/l			3.2		
16887-00-6	Chloride	mg/l			21.8		
14808-79-8	Sulfate	mg/l			233 J		
BOD	Biochemical Oxygen Demand	mg/l			4.2 U		
COD	Chemical Oxygen Demand	mg/l			23.3 J		
14797-55-8	Nitrate Nitrogen	mg/l			0.04 U		
14797-65-0	Nitrite Nitrogen	mg/l			0.015 U		
18496-25-8	Sulfide	mg/l			2.2		

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1168915		Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	MW-11B 5822348 Lancaster 1168915 WATER 10/30/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:	
	VOLATILES		
74-87-3	Chloromethane	ug/l	1 U
75-01-4	Vinyl chloride	ug/l	48
74-83-9	Bromomethane	ug/l	1 U
75-00-3	Chloroethane	ug/l	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U
67-64-1	Acetone	ug/l	6 U
75-15-0	Carbon Disulfide	ug/l	1 U
75-09-2	Methylene Chloride	ug/l	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U
78-93-3	2-Butanone	ug/l	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	56
67-66-3	Chloroform	ug/l	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U
71-43-2	Benzene	ug/l	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ
79-01-6	Trichloroethene	ug/l	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U
75-27-4	Bromodichloromethane	ug/l	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U
108-88-3	Toluene	ug/l	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U
591-78-6	2-Hexanone	ug/l	3 U
124-48-1	Dibromochloromethane	ug/l	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U
100-42-5	Styrene	ug/l	1 U
75-25-2	Bromoform	ug/l	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U
74-84-0	Ethane	ug/l	1 U
74-85-1	Ethene	ug/l	15
74-82-8	Methane	ug/l	150
74-98-6	Propane	ug/l	1 U
	METALS		
7439-89-6	Iron	mg/l	0.0522 U
	OTHER		
7440-44-0	Carbon, Total Organic (TOC)	mg/l	3.4
16887-00-6	Chloride	mg/l	165
14808-79-8	Sulfate	mg/l	207 J
BOD	Biochemical Oxygen Demand	mg/l	1.8 U
COD	Chemical Oxygen Demand	mg/l	21 J
14797-55-8	Nitrate Nitrogen	mg/l	0.04 U
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U
18496-25-8	Sulfide	mg/l	0.3

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1169162		Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 8 5824126 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-12A 5824129 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-12B 5824128 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-19A 5824127 Lancaster 1169162 WATER 11/2/2009 12/21/2009	MW-19B 5824130 Lancaster 1169162 WATER 11/2/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	2.6 J	38	1 U	2.8 J	7.2
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
67-64-1	Acetone	ug/l	R	R	R	R	R
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	2.7 J	1 U	1 U	1 U
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	2.1 J	64	2.6 J	3.7 J	68
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-01-6	Trichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U

Analytical Summary Table for Chemicals of Concern Validated 2009 Annual Groundwater Sampling Event Former Carborundum Company, Hyde Park Facility SDG: 1169340		Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	MW- 4A 5825597 Lancaster 1169340 WATER 11/3/2009 12/21/2009	MW- 4B 5825598 Lancaster 1169340 WATER 11/3/2009 12/21/2009	MW-15 5825596 Lancaster 1169340 WATER 11/3/2009 12/21/2009
CAS NO.	COMPOUND	UNITS:			
	VOLATILES				
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U
75-01-4	Vinyl chloride	ug/l	41	9.5	82
74-83-9	Bromomethane	ug/l	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	2.5 J	0.8 U	0.8 U
67-64-1	Acetone	ug/l	6 U	6 U	6 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	2 U	2 U	2 U
156-60-5	trans-1,2-Dichloroethene	ug/l	5.7	0.8 U	1.1 J
75-34-3	1,1-Dichloroethane	ug/l	17	1 U	2 J
78-93-3	2-Butanone	ug/l	3 U	3 U	3 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U
156-59-2	cis-1,2-Dichloroethene	ug/l	110	9.7	56
67-66-3	Chloroform	ug/l	0.8 U	0.8 U	0.8 U
71-55-6	1,1,1-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
71-43-2	Benzene	ug/l	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	ug/l	1 UJ	1 UJ	1 UJ
79-01-6	Trichloroethene	ug/l	130	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U
108-10-1	4-Methyl-2-Pentanone	ug/l	3 U	3 U	3 U
108-88-3	Toluene	ug/l	0.7 U	0.7 U	0.7 U
10061-01-5	cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	0.8 U	0.8 U	0.8 U
591-78-6	2-Hexanone	ug/l	3 U	3 U	3 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U
127-18-4	Tetrachloroethene	ug/l	0.8 U	0.8 U	0.8 U
108-90-7	Chlorobenzene	ug/l	0.8 U	0.8 U	0.8 U
1330-20-7	o-Xylene	ug/l	0.8 U	0.8 U	0.8 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	0.8 U	0.8 U	0.8 U
10061-02-6	trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U
179601-23-1	m+p-Xylene	ug/l	0.8 U	0.8 U	0.8 U
74-84-0	Ethane	ug/l	1 U	1 U	
74-85-1	Ethene	ug/l	4.6 J	1 U	
74-82-8	Methane	ug/l	83	140	
74-98-6	Propane	ug/l	1 U	1 U	
	METALS				
7439-89-6	Iron	mg/l	0.752	0.413	
	OTHER				
7440-44-0	Carbon, Total Organic (TOC)	mg/l	1.7 J	2.9 J	
16887-00-6	Chloride	mg/l	97.1	190	
14808-79-8	Sulfate	mg/l	244	267	
BOD	Biochemical Oxygen Demand	mg/l	2.6 U	3 U	
COD	Chemical Oxygen Demand	mg/l	12.8 U	25.6 J	
14797-55-8	Nitrate Nitrogen	mg/l	0.04 U	0.04 U	
14797-65-0	Nitrite Nitrogen	mg/l	0.015 U	0.015 U	
18496-25-8	Sulfide	mg/l	0.054 U	0.16 J	

APPENDIX D
GROUNDWATER SAMPLING LOGS (FALL 2009)

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-1A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10-27-09 / 8:59

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
8:59	10.71'	200	0.0	11.30	4.91	17.1	1.81	13.87	1.2	-80	
9:04	--	"	0.3	11.22	3.45	14.0	1.71	13.98	1.1	-106	
9:09	13.28'	"	0.6	10.47	1.60	24.1	1.36	14.23	0.9	-96	
9:14	--	"	0.9	9.60	0.84	20.4	1.25	14.31	0.8	-68	
9:19	14.50'	"	1.2	9.22	0.39	16.3	1.21	14.29	0.8	-59	
9:24	--	"	1.5	8.78	0.02	14.2	1.20	14.17	0.7	-30	
9:29	14.88'	"	1.8	8.62	0.00	11.7	1.19	14.25	0.8	-23	
9:34	--	"	2.1	8.59	0.00	9.69	1.18	14.42	0.7	-20	
9:39	15.19'	"	2.4	8.56	0.00	10.14	1.17	14.51	0.7	-19	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-27-09 / 9:50

 Total Volume Purged (gallons): 2.4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	8.56	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	1.17	Manganese	
Turbidity (NTU)	10.14	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.51	Hydrogen Sulfide	
TDS (g/L)	0.7	Alkalinity	
ORP (mv)	-19	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-1B

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10-27-09/8:50

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:00	10.06	230	0.50	6.32	0.0	9.1	1.32	13.22	0.8	-117	
9:05	10.06	"	0.63	6.38	0.0	28.3	1.32	13.25	0.8	-123	
9:10	10.06	"	0.75	6.41	0.0	22.4	1.32	13.27	0.8	-132	
9:15	10.06	"	1.00	6.43	0.0	14.9	1.32	13.22	0.8	-134	
9:20	10.06	"	1.25	6.45	0.0	2.2	1.32	13.21	0.8	-139	
9:25	10.06	"	1.50	6.46	0.0	8.7	1.32	13.22	0.8	-143	
9:30	10.06	"	1.75	6.47	0.0	17.0	1.31	13.30	0.8	-145	
9:35	10.06	"	2.00	6.47	0.0	14.3	1.31	13.33	0.8	-146	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-27-09 / 9:40

 Total Volume Purged (gallons): 2

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.48	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	1.31	Manganese	
Turbidity (NTU)	13.1	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.42	Hydrogen Sulfide	
TDS (g/L)	0.8	Alkalinty	
ORP (mv)	-150	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde ParkWell ID: MW-2AWell Diameter: 2 InchesSamplers: Bill AdamsMonitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: Geo pumpDate/Time: 10-28-09 / 13:45

WATER VOLUME CALCULATION

$$= (\text{Total Depth of Well} - \text{Depth To Water}) \times \text{Casing Volume per Foot}$$

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
13:45	9.12'	200	0.0	7.10	0.0	13.3	1.65	14.22	1.1	-138	
13:50	--	"	0.4	7.07	0.0	10.23	1.65	14.31	1.1	-147	
13:55	11.23	"	0.8	7.06	0.0	9.99	1.65	14.33	1.1	-148	
14:00	--	"	1.2	7.05	0.0	10.68	1.64	14.46	1.0	-146	
14:05	13.65	"	1.6	7.06	0.0	6.50	1.63	14.49	1.0	-143	
14:10	--	"	2.0	7.06	0.0	4.43	1.62	14.45	1.0	-140	
14:15	13.80	"	2.4	7.06	0.0	5.36	1.61	14.41	1.0	-140	
14:20	--	"	2.8	7.06	0.0	5.17	1.61	14.45	1.0	-139	

Sampling Data

Method: Geo PumpDate/Time: 10-28-09/14:30Total Volume Purged (gallons): 2.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.06	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	1.61	Manganese	
Turbidity (NTU)	5.17	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.45	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinity	
ORP (mv)	-139	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - Methane, Ethane, Ethene, Propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park

Well ID: MW-2B

Well Diameter: 2 Inches

Samplers: Rick Becken

Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: Geo Pump

Date/Time: 10/28/09-13:45

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
13:55	8.83	220	0.25	6.83	0.0	325	1.91	12.46	1.2	-314	
14:00	8.83	220	0.5	6.76	0.0	136	1.91	12.55	1.2	-326	
14:05	8.83	"	0.75	6.74	0.0	95.3	1.91	12.62	1.2	-338	
14:10	8.83	"	1.0	6.74	0.0	93.3	1.87	12.59	1.2	-341	
14:15	8.83	"	1.25	7.75	0.0	28.0	1.87	12.60	1.2	-343	
14:20	8.83	"	1.5	6.74	0.0	42.4	1.87	12.58	1.2	344	
14:25	8.83	"	1.75	6.74	0.0	25.1	1.87	12.57	1.2	-344	
14:30	8.83	"	2.0	6.74	0.0	21.5	1.87	12.55	1.2	-343	

Sampling Data

Method: Geo Pump

Date/Time: 10/28/09-14:25

Total Volume Purged (gallons): 2

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.74	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	1.87	Manganese	
Turbidity (NTU)	21.5	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	12.55	Hydrogen Sulfide	
TDS (g/L)	1.2	Alkalinity	
ORP (mv)	-343	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-3A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10-27-09 / 1050

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:50	8.93	200	0.0	7.09	2.6	94.2	1.70	13.46	1.1	-14	
10:55	--	"	0.3	7.01	0.0	27.5	1.67	13.05	1.1	0	
11:00	11.38	"	0.6	6.98	0.0	17.2	1.66	13.03	1.1	11	
11:05	--	"	0.9	6.97	0.0	8.26	1.65	13.03	1.1	12	
11:10	13.03	"	1.2	6.96	0.0	5.55	1.64	13.06	1.0	10	
11:15	--	"	1.5	6.96	0.0	5.24	1.63	13.16	1.0	11	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-27-09/11:30

 Total Volume Purged (gallons): 1.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.96	Ferrous Iron (mg/L)	0.2
Spec. Cond.(mS/cm)	1.63	Manganese	
Turbidity (NTU)	5.24	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.16	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	11	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEEP - Methane, Ethane, Ethene. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-3B

 Well Diameter: 2 Inches

 Samplers: Rick Benton

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/27/09-10:50

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:58	12.43	230	0.35	6.53	0.0	5.0	1.22	13.16	0.8	-126	
11:05	12.44	"	0.75	6.54	0.0	4.2	1.22	13.20	0.8	-132	
11:10	12.45	"	1.0	6.55	0.0	2.5	1.23	13.15	0.8	-138	
11:15	12.45	"	1.25	6.55	0.0	3.0	1.25	13.08	0.8	-144	
11:20	12.45	"	1.5	6.55	0.0	7.8	1.32	13.00	0.8	-155	
11:25	12.45	"	1.75	6.56	0.0	9.9	1.32	12.99	0.8	-175	
11:30	12.45	"	2.0	6.57	0.0	21.1	1.32	12.98	0.9	-187	
11:35	12.45	"	2.25	6.58	0.0	22.4	1.32	12.95	0.9	-190	
11:40	12.45	"	2.5	6.58	0.0	19.4	1.32	12.93	0.9	-195	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/27/09-11:40

 Total Volume Purged (gallons): 2.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.59	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.32	Manganese	
Turbidity (NTU)	5.4	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	12.93	Hydrogen Sulfide	
TDS (g/L)	0.9	Alkalinity	
ORP (mv)	-217	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	None	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-4A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 11-3-09/10:50

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:50	4.53	200	0.0	7.33	1.51	3.74	1.60	13.95	1.0	-12	
10:55	--	"	0.3	7.19	0.00	4.53	1.60	14.00	1.0	-26	
11:00	5.64	"	0.6	7.18	0.00	4.13	1.60	13.99	1.0	-27	
11:05	--	"	0.9	7.16	0.00	2.06	1.61	13.82	1.0	-33	
11:10	5.56	"	1.2	7.15	0.00	1.96	1.60	13.69	1.0	-35	
11:15	--	"	1.5	7.15	0.00	1.45	1.60	13.66	1.0	-39	
11:20	5.59	"	1.8	7.15	0.00	1.23	1.60	13.65	1.0	-40	

Sampling Data

 Method: Geo Pump

 Date/Time: 11-3-09/11:30

 Total Volume Purged (gallons): 1.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.15	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	1.60	Manganese	
Turbidity (NTU)	1.23	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.65	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	-40	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-4B

 Well Diameter: 2 Inches

 Samplers: Rick Benton

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 11/3/09-10:55

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
11:00	4.31	250.00	0.25	6.58	0.0	0.0	1.65	13.29	1.1	-247	
11:05	4.31	"	0.50	6.58	0.0	10.8	1.65	13.24	1.1	-254	
11:10	4.31	"	0.75	6.59	0.0	8.6	1.65	13.21	1.1	-258	
11:15	4.31	"	1.00	6.59	0.0	9.2	1.65	13.14	1.1	-259	
11:20	4.31	"	1.25	6.60	0.0	9.3	1.65	13.13	1.0	-260	
11:25	4.31	"	1.50	6.60	0.0	7.2	1.65	13.15	1.0	-259	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/3/09-11:35

 Total Volume Purged (gallons): 1.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.6	Ferrous Iron (mg/L)	0.4
Spec. Cond.(mS/cm)	1.65	Manganese	
Turbidity (NTU)	7.2	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.15	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	-259	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-5A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10-29-09/8:55

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
8:55	11.31'	200	0.0	7.76	3.39	77.6	2.04	14.72	1.3	67	
9:00	--	"	0.3	7.65	2.38	320	2.05	15.12	1.3	66	
9:05	11.50'	"	0.6	7.64	1.12	243	2.06	15.12	1.3	65	
9:10	--	"	0.9	7.62	0.80	129	2.06	15.15	1.3	64	
9:15	11.52'	"	1.2	7.61	0.75	107	2.06	15.17	1.3	64	
9:20	--	"	1.5	7.60	0.60	60.4	2.06	15.17	1.3	63	
9:25	11.53'	"	1.8	7.60	0.48	45.6	2.06	15.17	1.3	63	
9:30	--	"	2.1	7.59	0.44	35.2	2.06	15.15	1.3	63	
9:35	11.54'	"	2.4	7.59	0.36	28.2	2.07	15.15	1.3	63	
9:40	--	"	2.7	7.58	0.34	25.7	2.07	15.15	1.3	62	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-29-09/9:45

 Total Volume Purged (gallons): 2.7

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.58	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	2.07	Manganese	
Turbidity (NTU)	25.7	Sulfate	
DO (mg/L)	0.34	Carbon Dioxide	
Temp.(°C)	15.15	Hydrogen Sulfide	
TDS (g/L)	1.3	Alkalinty	
ORP (mv)	62	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-5B

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/29/09-9:58

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:58	10.96	200	0.0	7.06	3.99	137	1.79	13.96	1.1	-27	
10:03	--	"	0.3	6.95	0.0	49.4	1.80	13.90	1.1	-54	
10:08	10.98	"	0.6	6.94	0.0	34.1	1.80	14.00	1.1	-55	
10:13	--	"	0.9	6.93	0.0	17.9	1.80	14.01	1.2	-57	
10:18	10.98	"	1.2	6.93	0.0	11.0	1.78	14.02	1.1	-53	
10:23	--	"	1.5	6.92	0.0	5.44	1.77	13.88	1.1	-49	
10:28	10.98	"	1.8	6.92	0.0	1.92	1.76	13.83	1.1	-48	
10:33	--	"	2.1	6.92	0.0	1.47	1.75	13.84	1.1	-48	
10:38	10.99	"	2.4	6.91	0.0	0.66	1.74	13.86	1.1	-49	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/29/09-10:45

 Total Volume Purged (gallons): 2.4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.91	Ferrous Iron (mg/L)	0.4
Spec. Cond.(mS/cm)	1.74	Manganese	
Turbidity (NTU)	0.66	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.86	Hydrogen Sulfide	
TDS (g/L)	1.1	Alkalinty	
ORP (mv)	-49	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-6

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 10/30/09-1150

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
12:00	8.35	270	0.5	6.39	0.0	18	3.12	13.13	2.0	-376	
12:05	8.35	270	1.0	6.57	0.0	33.1	2.00	13.01	1.3	-353	
12:10	8.35	"	1.5	6.59	0.0	16.1	1.75	12.95	1.1	-337	
12:15	8.35	"	1.8	6.61	0.0	1.3	1.67	12.89	1.1	-331	
12:20	8.35	"	2.0	6.61	0.0	1.2	1.60	12.83	1.0	-331	
12:25	8.35	"	2.3	6.61	0.0	1.5	1.60	12.80	1.0	-330	
12:30	8.35	"	2.6	6.61	0.0	1.7	1.60	12.80	1.0	-330	
12:35	8.35	"	2.9	6.61	0.0	2.0	1.60	12.80	1.0	-331	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/30/09-12:45

 Total Volume Purged (gallons): 2.9

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.61	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.6	Manganese	
Turbidity (NTU)	2.3	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	12.79	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinity	
ORP (mv)	-330	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde ParkWell ID: MW-7AWell Diameter: 2 InchesSamplers: Rick BeckenMonitored Natural Attenuation Sample Set (Y/N)? Yes**Purging Data**Method: Geo PumpDate/Time: 10-30-09/9:00**WATER VOLUME CALCULATION**

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:15	10.25	220	0.25	6.43	0.0	120	1.35	13.53	0.9	-357	
9:20	10.46	200	0.50	6.48	0.0	50	1.32	13.55	0.8	-353	
9:25	10.62	"	0.75	6.45	0.0	16.3	1.31	13.58	0.8	-344	
9:30	10.67	"	1.0	6.44	0.0	10.5	1.31	13.60	0.8	-343	
9:35	10.73	"	1.25	6.44	0.0	4.8	1.31	13.72	0.8	-341	
9:40	10.81	"	1.50	6.44	0.0	20.1	1.31	13.76	0.8	-340	
9:45	10.86	"	1.75	6.44	0.0	14.0	1.31	13.78	0.8	-339	
9:50	10.89	"	2.0	6.44	0.0	9.5	1.31	13.78	0.8	-337	

Sampling DataMethod: Geo PumpDate/Time: 10-30-09/10:00Total Volume Purged (gallons): 2**Field Parameters**

HORRIBA		HACH TEST KITS	
pH	6.44	Ferrous Iron (mg/L)	1.6
Spec. Cond.(mS/cm)	1.31	Manganese	
Turbidity (NTU)	9.5	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.78	Hydrogen Sulfide	
TDS (g/L)	0.8	Alkalinity	
ORP (mv)	-337	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-7B

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/30/09-10:30

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:45	9.15	250	0.25	6.33	0.0	330	1.80	13.26	1.2	-372	
10:50	9.15	"	0.5	6.43	0.0	250	1.73	13.23	1.1	-374	
10:55	9.15	"	0.75	6.53	0.0	113	1.63	13.18	1.0	-364	
11:00	9.15	"	1.0	6.54	0.0	77.6	1.61	13.16	1.0	-354	
11:05	9.15	"	1.25	6.55	0.0	53.6	1.60	13.15	1.0	-349	
11:10	9.15	"	1.5	6.56	0.0	32.5	1.60	13.15	1.0	-343	
11:15	9.15	"	1.75	6.56	0.0	28.6	1.60	13.15	1.0	-338	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/30/09-11:25

 Total Volume Purged (gallons): 2.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.56	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.60	Manganese	
Turbidity (NTU)	26.3	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.15	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinity	
ORP (mv)	-336	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

 Comments: MW-7B, MW-7B (MS), MW-7B (MSD)

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-8

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 11/2/09-8:00

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
8:10	11.71	200	0.25	6.15	0.0	96.8	1.62	11.53	1.0	-232	
8:15	11.71	"	0.50	6.39	0.0	11.1	1.66	11.62	1.1	-232	
8:20	11.71	"	0.75	6.55	0.0	0.0	1.66	11.70	1.1	-241	
8:25	11.71	"	1.00	6.61	0.0	1.0	1.67	11.75	1.1	-249	
8:30	11.71	"	1.25	6.63	0.0	1.5	1.67	11.75	1.1	-251	
8:35	11.71	"	1.50	6.64	0.0	0.7	1.67	11.75	1.1	-255	
8:40	11.71	"	1.75	6.64	0.0	4.6	1.67	11.76	1.1	-256	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/2/09-9:00

 Total Volume Purged (gallons): 1.75

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.64	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.67	Manganese	
Turbidity (NTU)	4.6	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	11.76	Hydrogen Sulfide	
TDS (g/L)	1.1	Alkalinty	
ORP (mv)	-256	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-10A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10-29-09/12:25

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
12:25	10.33'	200	0.0	7.04	0.40	253	5.05	14.53	3.2	-90	
12:30	--	"	0.3	6.99	0.0	88.4	5.01	14.63	3.2	-100	
12:35	10.50'	"	0.6	7.01	0.0	41.1	4.93	14.81	3.1	-96	
12:40	--	"	0.9	6.99	0.0	16.6	4.91	14.88	3.1	-105	
12:45	10.52'	"	1.2	6.98	0.0	13.7	4.90	14.84	3.1	-107	
12:50	--	"	1.5	6.98	0.0	8.84	4.89	14.82	3.1	-109	
12:55	10.53'	"	1.8	6.97	0.0	9.50	4.87	14.80	3.1	-110	
13:00	--	"	2.1	6.98	0.0	6.02	4.85	14.81	0.1	-112	
13:05	10.53'	"	2.4	6.98	0.0	5.27	4.84	14.80	3.1	-113	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-29-09/13:15

 Total Volume Purged (gallons): 2.4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.98	Ferrous Iron (mg/L)	2.2
Spec. Cond.(mS/cm)	4.84	Manganese	
Turbidity (NTU)	5.27	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.8	Hydrogen Sulfide	
TDS (g/L)	3.1	Alkalinity	
ORP (mv)	-113	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	None	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-10B

 Well Diameter: 4 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/29/09-11:37

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
11:37	9.88	200	0.0	7.13	1.33	3.84	1.80	13.98	1.1	-67	
11:42	--	"	0.4	6.98	0.0	2.24	1.80	13.88	1.1	-87	
11:47	9.91	"	0.8	6.94	0.0	2.25	1.77	13.93	1.1	-109	
11:52	--	"	1.2	6.93	0.0	1.71	1.77	13.94	1.1	-112	
11:57	9.90	"	1.6	6.93	0.0	2.38	1.77	13.89	1.1	-113	
12:02	--	"	2.0	6.93	0.0	1.97	1.77	13.94	1.1	-115	
12:07	--	"	2.4	6.92	0.0	0.84	1.77	13.96	1.1	-116	
12:12	--	"	2.8	6.92	0.0	1.02	1.77	13.98	1.1	-118	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/29/09-12:20

 Total Volume Purged (gallons): 2.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.92	Ferrous Iron (mg/L)	1.60
Spec. Cond.(mS/cm)	1.77	Manganese	
Turbidity (NTU)	1.02	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.98	Hydrogen Sulfide	
TDS (g/L)	1.1	Alkalinity	
ORP (mv)	-118	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	None	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-11A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 10-30-09/10:02

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:02	9.16'	200	0.0	6.99	0.06	97.1	4.94	15.58	3.2	-92	
10:07	--	"	0.3	6.99	0.03	40.5	4.84	15.58	3.1	-88	
10:12	11.46'	"	0.6	6.94	0.0	14.9	4.77	15.86	3.1	-102	
10:17	--	"	0.9	6.93	0.0	6.52	4.70	15.87	3.0	-106	
10:22	11.85'	"	1.2	6.93	0.0	4.78	4.52	15.88	2.9	-106	
10:27	--	"	1.5	6.94	0.0	3.25	4.52	15.89	2.9	-107	
10:32	--	"	1.8	6.94	0.0	2.65	4.51	15.91	2.9	-107	
10:37	--	"	2.1	6.95	0.0	1.93	4.51	15.93	2.9	-107	

Sampling Data

 Method: Geo Pump

 Date/Time: 10-30-09/10:45

 Total Volume Purged (gallons): 2.1

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.95	Ferrous Iron (mg/L)	2.0
Spec. Cond.(mS/cm)	4.51	Manganese	
Turbidity (NTU)	1.93	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	15.93	Hydrogen Sulfide	
TDS (g/L)	2.9	Alkalinity	
ORP (mv)	-107	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-11B

 Well Diameter: 4 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/30/09-9:03

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:03	9.14	200	0.0	7.28	3.72	3.19	1.88	14.03	1.2	-145	
9:08	--	"	0.4	7.08	0.0	1.45	1.85	13.94	1.2	-181	
9:13	9.16	"	0.8	7.08	0.0	1.05	1.84	13.93	1.2	-186	
9:18	--	"	1.2	7.08	0.0	0.52	1.84	13.91	1.2	-190	
9:23	9.17	"	1.6	7.08	0.0	0.96	1.84	13.92	1.2	-192	
9:28	--	"	2.0	7.08	0.0	0.83	1.84	13.93	1.2	-192	
9:33	9.16	"	2.4	7.08	0.0	0.61	1.84	13.96	1.2	-192	
9:38	--	"	2.8	7.07	0.0	0.80	1.83	13.99	1.2	-193	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/30/09-9:45

 Total Volume Purged (gallons): 2.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.07	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.83	Manganese	
Turbidity (NTU)	0.80	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.99	Hydrogen Sulfide	
TDS (g/L)	1.2	Alkalinity	
ORP (mv)	-193	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	None	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-12A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump Date/Time: 11/2/09-11:26

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
11:26	5.15	200.00	0.0	7.24	4.87	40.5	1.56	14.05	1.0	-31	
11:30	--	"	0.3	7.14	0.0	15.6	1.64	13.96	1.0	-80	
11:34	5.22	"	0.6	7.12	0.0	8.14	1.63	13.96	1.0	-110	
11:39	--	"	0.9	7.11	0.0	5.90	1.63	14.00	1.0	-143	
11:44	5.22	"	1.2	7.11	0.0	4.23	1.64	13.96	1.0	-163	
11:49	--	"	1.5	7.10	0.0	3.65	1.64	13.95	1.0	-168	
11:54	5.22	"	1.8	7.08	0.0	2.19	1.64	13.94	1.0	-169	
11:59	--	"	2.1	7.08	0.0	1.86	1.64	13.96	1.0	-170	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/2/09-12:10

 Total Volume Purged (gallons): 2.1

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.08	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	1.64	Manganese	
Turbidity (NTU)	1.86	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.96	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	-170	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park

Well ID: MW-12B

Well Diameter: 4 Inches

Samplers: Rick Becken

Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: Geo Pump

Date/Time: 11/2/09-11:20

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

[illegible]

Sampling Data

Method: Geo Pump

Date/Time: 11/2/09-12:10

Total Volume Purged (gallons):

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.63	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	0.228	Manganese	
Turbidity (NTU)	5.1	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.27	Hydrogen Sulfide	
TDS (g/L)	0.15	Alkalinty	
ORP (mv)	46	* <u>NOTE</u> * HACH test kits are only required for MNA analysis wells.	

[illegible]

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethene

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-13A

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 10/29/09-8:40

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:05	9.06	200	0.25	6.00	0.0	841	1.90	13.61	1.2	-56	
9:10	9.16	"	0.50	6.22	0.0	285	1.90	14.09	1.2	-59	
9:15	9.23	"	0.75	6.27	0.0	174	1.90	14.24	1.2	-60	
9:20	9.26	"	0.95	6.29	0.0	157	1.90	14.23	1.2	-62	
9:25	9.28	"	1.20	6.31	0.0	110	1.91	14.24	1.2	-62	
9:30	9.29	"	1.40	6.32	0.0	30	1.91	13.23	1.2	-63	
9:35	9.30	"	1.65	6.32	0.0	35	1.92	14.26	1.2	-66	
9:40	9.30	"	1.80	6.32	0.0	40	1.92	14.26	1.2	-66	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/29/09-9:50

 Total Volume Purged (gallons): 1.8

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.32	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	1.92	Manganese	
Turbidity (NTU)	38	Sulfate	
DO (mg/L)	0	Carbon Dioxide	
Temp.(°C)	14.26	Hydrogen Sulfide	
TDS (g/L)	1.2	Alkalinty	
ORP (mv)	-66	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde ParkWell ID: MW-13BWell Diameter: 2 InchesSamplers: Rick BeckenMonitored Natural Attenuation Sample Set (Y/N)? NO**Purging Data**Method: Geo PumpDate/Time: 10/29/09-10:00**WATER VOLUME CALCULATION**
$$= (\text{Total Depth of Well} - \text{Depth To Water}) \times \text{Casing Volume per Foot}$$

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:10	8.36	250	0.25	6.45	0.0	500	1.43	12.95	0.9	-129	
10:15	8.36	"	0.5	6.45	0.0	320	1.43	13.02	0.9	-132	
10:20	8.36	"	0.75	6.44	0.0	180	1.41	12.94	0.9	-132	
10:25	8.36	"	1.0	6.44	0.0	130	1.41	12.91	0.9	-134	
10:30	8.36	"	1.25	6.44	0.0	95	1.41	12.88	0.9	-135	
10:35	8.36	"	1.5	6.44	0.0	55	1.41	12.90	0.9	-136	
10:40	8.36	"	1.75	6.44	0.0	39	1.41	12.91	0.9	-136	

Sampling DataMethod: Geo PumpDate/Time: 10/29/09-10:50Total Volume Purged (gallons): 2**Field Parameters**

HORRIBA		HACH TEST KITS	
pH	6.44	Ferrous Iron (mg/L)	1.2
Spec. Cond.(mS/cm)	1.41	Manganese	
Turbidity (NTU)	35	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	12.91	Hydrogen Sulfide	
TDS (g/L)	0.9	Alkalinity	
ORP (mv)	-136	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-14A

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/29/09-11:45

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
11:50	8.47	200	0.25	6.46	0.0	210	0.995	14.60	0.64	-110	
11:55	8.86	"	0.50	6.47	0.0	150	0.980	14.63	0.63	-112	
12:00	9.10	"	0.63	6.50	0.0	110	0.964	14.60	0.62	-113	
12:05	9.20	"	0.75	6.50	0.0	90	0.964	14.50	0.62	-115	
12:10	9.32	"	0.88	6.50	0.0	80	0.964	14.51	0.62	-117	
12:15	9.45	"	1.00	6.50	0.0	70	0.964	14.43	0.62	-120	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/29/09-13:30

 Total Volume Purged (gallons): 1.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.50	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	0.96	Manganese	
Turbidity (NTU)	70	Sulfate	
DO (mg/L)	0	Carbon Dioxide	
Temp.(°C)	14.42	Hydrogen Sulfide	
TDS (g/L)	0.62	Alkalinty	
ORP (mv)	-120	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

 Comments: Purged to dry, waited 1 hour then collected sample

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-14B

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/29/09-12:25

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
12:35	6.66	220	0.25	6.66	0.00	23	1.59	13.51	1.0	-190	
12:40	6.66	"	0.5	6.68	0.00	5.2	1.57	13.40	1.0	-204	
12:45	6.66	"	0.75	6.68	0.00	3.1	1.55	13.27	1.0	-202	
12:50	6.66	"	1.0	6.69	0.00	1.7	1.55	13.26	1.0	-199	
12:55	6.66	"	1.25	6.68	0.00	1.6	1.55	13.24	1.0	-205	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/29/09-13:10

 Total Volume Purged (gallons): 1.25

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.68	Ferrous Iron (mg/L)	0.4
Spec. Cond.(mS/cm)	1.55	Manganese	
Turbidity (NTU)	1.7	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.24	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	-205	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-15

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 11/3/09-9:40

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:45	4.61	220	0.25	6.11	2.40	5.9	1.58	13.90	1.0	-261	
9:50	4.60	"	0.5	6.33	0.42	3.9	1.59	13.97	1.0	-285	
9:55	4.60	"	0.75	6.49	0.0	1.0	1.58	14.03	1.0	-301	
10:00	4.60	"	1.0	6.55	0.0	4.5	1.58	14.03	1.0	-306	
10:05	4.60	"	1.25	6.58	0.0	0.2	1.58	14.04	1.0	-310	
10:10	4.60	"	1.5	6.59	0.0	0.85	1.58	14.06	1.0	-314	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/3/09-1020

 Total Volume Purged (gallons): 1.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.60	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.58	Manganese	
Turbidity (NTU)	0.85	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.07	Hydrogen Sulfide	
TDS (g/L)	1.0	Alkalinty	
ORP (mv)	-315	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

 Comments: City of Niagara Falls Police Dept - Traffic Division - (716) 285-4565 requested uniformed office with Patrol car for assistance with traffic control.

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-16A

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/27/09-13:00

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
13:05	6.56	200	0.25	6.48	0.38	33.9	3.16	15.40	2.0	46	
13:10	7.62	"	0.38	6.51	0.34	34.6	3.14	15.33	2.0	42	
13:15	7.88	"	0.50	6.52	0.92	50.1	3.13	15.49	2.0	46	
13:20	9.65	"	0.63	6.52	1.22	67.5	3.13	15.49	2.0	52	
13:25	10.51	"	0.75	6.52	1.28	21.5	3.13	15.46	2.0	56	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/27/09-13:30

 Total Volume Purged (gallons): 1.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.52	Ferrous Iron (mg/L)	0.1
Spec. Cond.(mS/cm)	3.13	Manganese	
Turbidity (NTU)	21.5	Sulfate	
DO (mg/L)	1.28	Carbon Dioxide	
Temp.(°C)	15.46	Hydrogen Sulfide	
TDS (g/L)	2.0	Alkalinty	
ORP (mv)	56	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-16B

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/27/09-14:10

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
14:25	5.02	250	0.5	6.53	0.0	50.9	1.49	13.7	1.0	-188	
14:30	5.02	"	0.75	6.55	0.0	64.4	1.49	13.8	1.0	-197	
14:35	5.02	"	1.0	6.56	0.0	46.0	1.49	13.8	1.0	-205	
14:40	5.02	"	1.25	6.56	0.0	30.9	1.49	13.7	1.0	-210	
14:45	5.02	"	1.5	6.57	0.0	26.1	1.49	13.7	1.0	-215	
14:50	5.02	"	1.75	6.57	0.0	41.6	1.48	13.6	0.9	-218	
14:55	5.02	"	2.0	6.57	0.0	43.6	1.48	13.6	0.9	-220	
15:00	5.02	"	2.25	6.57	0.0	39.6	1.48	13.6	0.9	-221	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/27/09-15:10

 Total Volume Purged (gallons): 2.25

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.57	Ferrous Iron (mg/L)	0.3
Spec. Cond.(mS/cm)	1.48	Manganese	
Turbidity (NTU)	41.7	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	13.59	Hydrogen Sulfide	
TDS (g/L)	0.9	Alkalinty	
ORP (mv)	-224	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-17A

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/28/09-10:40

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
10:45	5.91	250	0.25	6.25	0.0	116	4.03	15.48	2.6	-90	
10:50	5.96	"	0.5	6.53	0.0	42.6	4.55	15.77	2.9	-99	
10:55	5.98	"	0.75	6.55	0.0	29.4	4.62	15.64	3.0	-104	
11:00	5.99	"	1.0	6.55	0.0	28.7	4.63	15.69	3.0	-106	
11:05	6.01	"	1.25	6.56	0.0	19.2	4.57	15.69	2.9	-109	
11:10	6.02	"	1.5	6.57	0.0	16.3	5.59	15.69	2.9	-110	
11:15	6.03	"	1.75	6.57	0.0	12.0	4.59	15.65	2.9	-112	
11:20	6.04	"	2.0	6.57	0.0	10.5	4.59	15.62	2.9	-113	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/28/09-11:30

 Total Volume Purged (gallons): 2.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.57	Ferrous Iron (mg/L)	3.0
Spec. Cond.(mS/cm)	4.59	Manganese	
Turbidity (NTU)	10.5	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	15.62	Hydrogen Sulfide	
TDS (g/L)	2.9	Alkalinity	
ORP (mv)	-113	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

 Comments: Duplicate sample collected MW-171

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park Well ID: MW-17B Well Diameter: 2 Inches
 Samplers: Bill Adams Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

Method: Geo Pump Date/Time: 10/28/09-9:25

WATER VOLUME CALCULATION	
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot	

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:25	5.92	200	0.0	7.62	2.12	945	3.42	15.04	2.3	-128	
9:30	--	"	0.3	7.30	0.0	675	3.82	14.72	2.4	-171	
9:35	5.92	"	0.6	7.26	0.0	645	3.82	14.63	2.4	-179	
9:40	--	"	0.9	7.24	0.0	368	3.79	14.67	2.4	-182	
9:45	5.92	"	1.2	7.20	0.0	320	3.83	14.61	2.5	-186	
9:50	--	"	1.5	7.19	0.0	320	3.82	14.64	2.5	-188	
9:55	5.92	"	1.8	7.15	0.0	294	3.83	14.62	2.4	-190	
10:00	--	"	2.1	7.14	0.0	232	3.82	14.59	2.4	-192	
10:05	5.92	"	2.4	7.13	0.0	216	3.81	14.51	2.4	-194	
10:10	--	"	2.7	7.12	0.0	216	3.81	14.46	2.4	-195	
10:15	5.92	"	3.0	7.12	0.0	186	3.81	14.43	2.4	-197	
10:20	--	"	3.3	7.11	0.0	211	3.84	14.31	2.5	-198	
10:25	5.92	"	3.6	7.10	0.0	143	3.86	14.36	2.5	-198	
10:30	--	"	3.9	7.10	0.0	101	3.88	14.38	2.5	-199	
10:35	5.92	"	4.2	7.10	0.0	81	3.89	14.37	2.5	-199	
10:40	--	"	4.5	7.10	0.0	73	3.88	14.43	2.5	-200	
10:45	5.92	"	4.8	7.10	0.0	57	3.88	14.81	2.5	-201	
10:50	--	"	5.1	7.10	0.0	56	3.87	14.79	2.5	-202	
10:55	5.92	"	5.4	7.10	0.0	42	3.87	14.83	2.5	-202	
11:00	--	"	5.7	7.10	0.0	41	3.87	14.87	2.5	-202	
11:05	5.92	"	6.0	7.11	0.0	42	3.86	14.90	2.5	-203	

Sampling Data

Method: Geo Pump Date/Time: 10/28/09-11:30 Total Volume Purged (gallons): 6.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.11	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	3.86	Manganese	
Turbidity (NTU)	42.4	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.9	Hydrogen Sulfide	
TDS (g/L)	2.5	Alkalinity	
ORP (mv)	-203	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	None	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: MW-17B, MW-17-B (MS), MW-17B (MSD)

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-18A

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/27/09-12:58

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
12:58	6.32	200	0.0	7.36	3.02	77.0	1.25	16.89	0.8	30	
13:03	--	"	0.3	7.23	0.58	32.3	1.24	16.61	0.8	12	
13:08	7.04	"	0.6	7.21	0.0	14.0	1.24	16.80	0.8	8	
13:13	--	"	0.9	7.20	0.0	10.65	1.24	16.81	0.8	-28	
13:18	7.26	"	1.2	7.19	0.0	5.79	1.25	16.38	0.8	-88	
13:23	--	"	1.5	7.18	0.0	3.11	1.26	16.28	0.8	-101	
13:28	7.38	"	1.8	7.17	0.0	2.35	1.26	16.23	0.8	-105	
13:33	--	"	2.1	7.16	0.0	2.91	1.26	16.24	0.8	-110	
13:38	7.45	"	2.4	7.15	0.0	2.53	1.26	15.23	0.8	-112	
13:43	--	"	2.7	7.14	0.0	1.32	1.26	16.21	0.8	-115	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/27/09-13:50

 Total Volume Purged (gallons): 2.7

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.14	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.26	Manganese	
Turbidity (NTU)	1.32	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	16.21	Hydrogen Sulfide	
TDS (g/L)	0.8	Alkalinty	
ORP (mv)	-115	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-18B

 Well Diameter: 2 Inches

 Samplers: Bill Adams

 Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

 Method: Geo Pump

 Date/Time: 10/27/09-14:13

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
14:13	6.45	200	0.0	7.11	3.82	7.86	1.55	15.07	1.0	-49	
14:18	--	"	0.3	6.94	0.0	1.57	1.68	14.90	1.1	-76	
14:23	6.49	"	0.6	6.93	0.0	1.52	1.70	14.79	1.1	-97	
14:28	--	"	0.9	6.92	0.0	1.44	1.70	14.73	1.1	-103	
14:33	6.50	"	1.2	6.91	0.0	0.58	1.70	14.70	1.1	-106	
14:38	--	"	1.5	6.91	0.0	1.22	1.69	14.68	1.1	-109	
14:43	6.51	"	1.8	6.91	0.0	0.79	1.70	14.64	1.1	-111	
14:48	--	"	2.1	6.91	0.0	0.93	1.70	14.61	1.1	-111	
14:53	6.52	"	2.4	6.92	0.0	1.15	1.70	14.59	1.1	-112	

Sampling Data

 Method: Geo Pump

 Date/Time: 10/27/09-15:10

 Total Volume Purged (gallons): 2.4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.92	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	1.7	Manganese	
Turbidity (NTU)	1.15	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.59	Hydrogen Sulfide	
TDS (g/L)	1.1	Alkalinty	
ORP (mv)	-112	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B
MEEP	2-40mL glass vial	HCl	8015B EPA RSK 175
TOC	1-250mL amber	H3PO4	5310 C
BOD	2-500mL plastic	Nonee	SM 5210 B
COD	1-1000mL glass	H2SO4	EPA 410.4
Dissolved Inorganics	1-500mL plastic	None	SW 6010 B
Chloride Sulfate	2-40ml glass vial	None	300
Nitrate	1-40mL glass vial	H2SO4	EPA 353.2
Nitrite	1-40mL glass vial	None	EPA 353.2
Sulfide	1-500mL glass	NaOH/ZnAC	SM 20 4500

Comments: _____

MEE - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-19A

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 11/2/09-9:20

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
9:40	9.23	200	0.25	6.28	0.0	21.1	1.91	14.92	1.2	-83	
9:45	10.10	"	0.5	6.30	0.08	6.6	1.94	15.12	1.2	-84	
10:00	12.50	"	0.75	6.29	0.0	13.0	1.88	14.97	1.2	-60	
10:05	12.91	"	1.0	6.32	0.0	3.9	1.88	15.04	1.2	-55	
10:10	13.62	"	1.25	6.32	0.0	0.4	1.88	15.26	1.2	-37	
10:15	14.45	"	1.5	6.33	0.0	4.8	1.88	15.35	1.2	-39	
10:20	15.08	"	1.75	6.33	0.0	3.4	1.88	15.34	1.2	-41	
10:25	15.76	"	2.0	6.33	0.0	2.4	1.80	15.35	1.2	-41	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/2/09-10:40

 Total Volume Purged (gallons): 2.0

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.33	Ferrous Iron (mg/L)	1.0
Spec. Cond.(mS/cm)	1.80	Manganese	
Turbidity (NTU)	2.4	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	15.35	Hydrogen Sulfide	
TDS (g/L)	1.2	Alkalinty	
ORP (mv)	-41	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

 Comments: stopped briefly at 9:45, then continued at 10:00.

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

 Site Name: Hyde Park

 Well ID: MW-19B

 Well Diameter: 2 Inches

 Samplers: Rick Becken

 Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

 Method: Geo Pump

 Date/Time: 11/2/09-12:55

WATER VOLUME CALCULATION

= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
13:00	6.67	200	0.25	6.56	0.05	15.6	0.960	14.65	0.61	-203	
13:05	6.67	"	0.50	6.58	0.0	13.6	0.945	14.75	0.61	-204	
13:10	6.67	"	0.75	6.60	0.0	5.8	0.951	14.68	0.61	-210	
13:15	6.67	"	1.00	6.62	0.0	3.7	0.964	14.59	0.62	-228	
13:20	6.67	"	1.25	6.62	0.0	4.8	0.964	14.58	0.62	-224	
13:25	6.67	"	1.50	6.63	0.0	5.2	0.969	14.53	0.62	-229	
13:30	6.67	"	1.75	6.64	0.0	2.5	0.970	14.43	0.62	-234	
13:35	6.67	"	2.00	6.64	0.0	3.2	0.970	14.40	0.62	-237	
13:40	6.67	"	2.25	6.64	0.0	1.9	0.970	14.38	0.62	-238	

Sampling Data

 Method: Geo Pump

 Date/Time: 11/2/09-13:50

 Total Volume Purged (gallons): 2.25

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.64	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	0.970	Manganese	
Turbidity (NTU)	1.9	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	
Temp.(°C)	14.38	Hydrogen Sulfide	
TDS (g/L)	0.62	Alkalinty	
ORP (mv)	-238	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
VOCs	3-40mL glass vial	HCl	8260 B

Comments: _____

MEE - methane, ethane, ethene, propane, propene. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park

Well ID: MH-1

Well Diameter: _____ Inches

Samplers: Bill Adams / Rick Becken

Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: _____

Date/Time: _____

WATER VOLUME CALCULATION = (Total Depth of Well - Depth To Water) x Casing Volume per Foot	

[illegible]

Sampling Data

Method: _____

Date/Time: 10/28/09-13:00

Total Volume Purged (gallons): _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L)	
Spec. Cond.(mS/cm)		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)		* NOTE * HACH test kits are only required for MNA analysis wells.	

[illegible]

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park

Well ID: MH-2

Well Diameter: _____ Inches

Samplers: Bill Adams / Rick Becken

Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: _____

Date/Time: _____

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot

[illegible]

Sampling Data

Method: _____

Date/Time: 10/28/09-13:05

Total Volume Purged (gallons): _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L)	
Spec. Cond.(mS/cm)		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)		* <u>NOTE</u> * HACH test kits are only required for MNA analysis wells.	

[illegible]

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: Hyde Park

Well ID: MH-3

Well Diameter: _____ Inches

Samplers: Bill Adams / Rick Becken

Monitored Natural Attenuation Sample Set (Y/N)? NO

Purging Data

Method: _____

Date/Time: _____

WATER VOLUME CALCULATION = (Total Depth of Well - Depth To Water) x Casing Volume per Foot	

[illegible]

Sampling Data

Method: _____

Date/Time: 10/28/09-13:10

Total Volume Purged (gallons): _____

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L)	
Spec. Cond.(mS/cm)		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)		* NOTE * HACH test kits are only required for MNA analysis wells.	

[illegible]

Comments: _____

MEEP - methane, ethane, ethene, propane. Dissolved Inorganics - Al, As, Ca, Fe, K, Mg, Mn, Na, Se. VOCs - full 8260 list.

PARSONS