URS

December 28, 2012

Mr. Ronnie Lee, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016

Re: Former EMCA Site, Mamaroneck, New York
Site Number 360025
Groundwater Sampling and Analysis Report
September 2012 Sampling Event &
Summary of 2012 Supplemental Injection Event
and 2012 Post-Injection Sampling Events

Dear Mr. Lee:

Enclosed is one CD containing the Groundwater Sampling and Analysis Report for the September 2012 Sampling Event & Summary of the 2012 Supplemental Injection Event 2012 Post Injection Sampling Events. This transmittal is being made on behalf of Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company.

If you have any questions or comments regarding the enclosed, please give me a call at (716) 923-1102. Thank you.

Sincerely,

URS Corporation

Bruce J. Przybyl
Project Manager

Enc.

cc: Mr. Nathan Walz, NYSDOH (1 – CD)
Mr. Ed Tokarski, Dow (1 – Hard Copy, 1 - CD)
Mr. Louis Vetere, Cablevision (1 – Hard Copy)
Mr. James Moras, NYSDEC (e-mail of LOT)
File: 11172730/C-1

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Groundwater Sampling and Analysis Report

September 2012 Sampling Event & Summary of 2012 Supplemental Injection Event and 2012 Post-Injection Groundwater Sampling Events

Former EMCA Site
Mamaroneck, New York

Prepared for:

Rohm and Haas Company, a wholly-owned subsidiary of The Dow Chemical Company

Prepared by:

URS
77 Goodell Street
Buffalo, New York 14203

December 2012

G4427S

FORMER EMCA SITE

SITE NO. 360025

MAMARONECK, NEW YORK

GROUNDWATER SAMPLING AND ANALYSIS REPORT SEPTEMBER 2012 SAMPLING EVENT & SUMMARY OF 2012 SUPPLEMENTAL INJECTION EVENT AND 2012 POST-INJECTION GROUNDWATER SAMPLING EVENTS

Prepared for:

ROHM AND HAAS COMPANY

A WHOLLY-OWNED SUBSIDIARY OF THE DOW CHEMICAL COMPANY

Submitted by:

URS CORPORATION

77 Goodell Street

Buffalo, New York 14203

DECEMBER 2012

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1.0 INTRODUCTION

This report presents the results of groundwater monitoring conducted on September 24, 2012 at the former EMCA site located in Mamaroneck, New York **(Figure 1)** pursuant to the approved Site Management Plan (URS, 2010) and to recommendations made in the *Groundwater Sampling and Analysis Report, April 2012 Sampling Event* (URS, 2012a). The groundwater monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site from 2003 to 2012. The report also presents field parameter data collected from one well (MW-02) on October 22, October 31, and November 29 and a sample analyzed at an off-site laboratory collected from MW-02 on November 29, 2012.

In addition, this report presents the details of a supplemental injection event completed in October 2012, following the September groundwater sampling event.

The pilot program conducted in 2003, the interim remedial measure in 2004, the supplemental injection in 2007, the supplemental injection in 2009, and the supplemental injection in 2012, all involved the injections of food-grade emulsified soybean oil and sodium lactate into groundwater (a.k.a. biostimulation) to stimulate anaerobic biodegradation and the reductive dechlorination of 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113; CAS No. 76-13-1) in site groundwater. The latest injection of food-grade substrates was executed at the site from September 25 to October 4, 2012. The supplemental injection in 2012 also included the injection of KB-1 Plus® bacteria culture, developed by SiREM Laboratory in Guelph, Ontario, Canada, as a biological amendment to the emulsified soybean oil and sodium lactate injections. Biological amendment injections (a.k.a. bioaugmentation) were executed on November 1, 2012.

This was the sixteenth groundwater sampling event since the interim remedial measure in 2004, the eleventh following the supplemental injection event in 2007, and the eighth following the 2009 supplemental injection event. The September 2012 groundwater sampling event serves as the baseline event to evaluate the results for the 2012 biostimulation and bioaugmentation injection.

2.0 GROUNDWATER SAMPLING AND ANALYSIS

On September 24, groundwater samples were collected from a total of five monitoring wells (i.e., MW-02, MW-03, MW-04, MW-06 and MW-07R) using low-flow purging and sampling procedures. Static groundwater level measurements were taken prior to purging and sampling. On October 22 and 31, following the completion of the supplemental 2012 food-grade

substrate injections, field parameters were collected from MW-02 to evaluate aquifer conditions prior to bioaugmentation. On November 29, an additional sample for field parameters, along with groundwater sample for off-site analyses, was collected from MW-02. Field purging and sampling logs are presented in **Appendix A.**

Chain-of-custody was initiated immediately after the groundwater samples were collected and was maintained through shipment to the laboratory. Laboratory analyses were performed on samples from all five monitoring wells collected on September 24 for the following parameters:

Parameter	Analytical Method
Freon 113	SW8260B
Freon 123a	SW8260B
Freon 1113	SW8260B
Methane	RSK-175/SW3810
Sulfate	ASTM D516-90

In addition, supplemental analyses were also performed on all five monitoring wells to collect additional natural attenuation groundwater data to provide a baseline of results. These additional analyses are presented below:

Parameter	Analytical Method
Total Iron	200.7
Nitrate	SM4500-NO3 F
Hardness	SM2340C
Alkalinity	SM2320B
Total Organic Carbon	SM5310B
Dehalococcoides	Microbac Laboratories SOP 60105
Dehalobacter	Microbac Laboratories SOP 60105
Ferrous Iron	Field colorimeter

The samples collected from MW-02 on October 22 and October 3 were analyzed for the field parameters only (i.e. ORP, pH, temperature, and dissolved oxygen). The sample collected on November 29 was analyzed for field parameters, Freon 113, Freon 123a, Freon 1113, methane, sulfate, dehalococcoides, and dehalobacter.

3.0 RESULTS

Groundwater level data are presented in **Table 1** and a groundwater elevation map is shown on **Figure 2**. Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average surface elevation of Benchmark B and Benchmark D. As found during previous sampling events, groundwater flow was generally north to northwest towards the Sheldrake River.

Groundwater monitoring results for the current events are provided in **Table 2**. Historical groundwater analytical results are presented in **Table 3**. Laboratory data sheets and a data usability summary report for the September 2012 sampling round and the November 2012 sample collected at MW-02 are provided in **Appendix B**. Freon 113, 123a and 1113 concentrations over time are shown in plan view on **Figure 3** and trend plots are presented for Freon 113 **(Figures 4 and 5)**, Freon 123a **(Figure 6)**, Freon 1113 **(Figure 7)**, sulfate **(Figure 8)**, methane **(Figure 9)**, dissolved oxygen **(Figure 10)**, and oxidation-reduction potential **(Figure 11)**. Dissolved oxygen and oxidation-reduction potential were measured in the field by real-time instrumentation. Pre-injection Freon results (2003) compared to September 2012 Freon results are also shown in bar-graph form on **Figure 12**.

4.0 DATA ASSESSMENT

In addition to being the baseline event for the September 2012 supplemental injection, the groundwater analytical data collected in September 2012 is also the eighth set of data collected following the supplemental injection of food-grade emulsified soybean oil and sodium lactate completed on September 9, 2009. The previous round of groundwater sampling occurred on April 11, 2012. These results were presented in the previous Groundwater Sampling and Analysis Report for April 2012 (URS, 2012a).

Routine Parameters

The groundwater analytical results for the September 2012 sampling event indicate that Freon 113 concentrations were detected above the remedial goal of 5 µg/L at two of the five wells sampled (i.e., MW-02 and MW-07R). Freon 113 was detected at 650 µg/L at MW-02, decreasing from 1,200 J µg/L; and detected at 5.9 J µg/L at MW-07R, decreasing from 67 J µg/L.

Freon 123a and Freon 1113 are the expected reductive dechlorination daughter products of Freon 113. Freon 123a holds one less chlorine than Freon 113, while Freon 1113 holds two less chlorines than Freon 113. With the reductive dechlorination of Freon 113, the concentrations of these compounds are expected to increase and then eventually decline over time as reductive dechlorination continues.

Freon 123a concentrations were detected above the remedial goal of 5 µg/L at one of the five wells sampled (i.e., MW-02). Compared to the previous sampling event (April 2012), Freon 123a decreased at MW-02 (57 µg/L to 26 µg/L), MW-03 (36 µg/L to 3.2 µg/L), MW-06 (28 µg/L to 3.6 µg/L), and MW-07R (11 µg/L to 2.4 J µg/L). Freon 123a has never been detected at MW-04.

Freon 1113 concentrations were detected above the remedial goal of 5 µg/L at four of the five wells sampled (i.e., MW-02, MW-03, MW-06, and MW-07R). Freon 1113 decreased in concentration from the April 2012 event at MW-02 (140 J µg/L to 98 µg/L), MW-03 (150 J µg/L to 130 µg/L), MW-04 (7.2 J µg/L to 2.5 µg/L), MW-06 (230 J µg/L to 140 µg/L) and MW-07R (630 J µg/L to 430 µg/L).

Sulfate concentrations increased at MW-07R, and decreased at MW-02, MW-03, MW-04, and MW-06 compared to the previous event. Methane concentrations decreased at all locations compared to the previous event. Dissolved oxygen (DO) concentrations remained the same at 0 mg/L at all wells.

Oxidation-reduction potential (ORP) decreased in all wells from the previous event. The range generally became more reducing, ranging from between -44 to -87 millivolts in the April 2012 event to between -78 to -118 millivolts in the September 2012 event.

Supplemental Parameters

Prior to bioaugmentation completed in November 2012, Dehalococcoides was analyzed for in MW-02 with a reported concentration of 100 CEQ/mL (colony equivalent per milliliter). Dehalobacter was also analyzed for in all five wells sampled and the reported results ranged from non-detect to 700 GC/mL (gene copies per milliliter) at MW-04 and MW-03, respectively. The manufacturer of KB-1 Plus® (SiREM), the biological amendment introduced into groundwater at the site, believes that dehalobacter is the bacterial strain most responsible for the biologically mediated reduction of Freon 113 in groundwater.

Total iron concentrations ranged from 7,280 µg/L to 32,900 µg/L. Ferrous iron, measured in the field using a Hach DR/890 colorimeter and ferrous iron AccuVac ampules, ranged from 3.5 mg/L to 30.4 mg/L.

Results for other supplemental natural attenuation parameters are presented in **Table 2**, including alkalinity, hardness, nitrate, and total organic carbon. These results will be compared to post-injection results, scheduled to be collected in May 2013.

Post-Injection Sample Results for MW-02

A sample from MW-02 was collected on November 29, 2012 to assess the short-term impact of biostimulation and bioaugmentation injections that took place from September 25 to October 4, 2012 and November 1, 2012, respectively. Results are shown on **Table 2** and depicted graphically in comparison to the pre-injection results on **Figure 13**. Comparing to the results from the baseline sample collected on September 24, 2012, Freon 113 decreased from 650 µg/L to 65 µg/L, Freon 123a increased slightly from 26 µg/L to 29 µg/L, and Freon 1113 increased from 98 µg/L to 380 µg/L. Sulfate decreased from 50.8 mg/L to non-detection and methane increased from 4,000 µg/L to 5,600 µg/L. Also, dehalococcoides increased from 100 CEQ/ml to 2,000 CEQ/ml and dehalobacter increased from 5 GC/ml to 40,000 GC/ml. These results indicate strong dechlorination of Freon 113 and Freon 123a. It also appears that the injections have established favorable conditions for anaerobic biodegradation as well as bacterial augmentation and survival.

5.0 2012 SUPPLEMENTAL INJECTION PROGRAM

The 2003, 2004, 2007, and 2009 injections of sodium lactate and emulsified oil substrate were successful in establishing favorable conditions for reductive dechlorination of Freon compounds. The goals of the 2012 supplemental injections were to stimulate and maintain anaerobic biological processes, targeting remaining areas of contamination, particularly in the vicinity of MW-02. Injections were performed in two phases. Phase 1 included the injection of food-grade emulsified soybean oil and sodium lactate into groundwater to stimulate anaerobic biodegradation and the reductive dechlorination of site groundwater. Based on previous sampling, there has been a low level of dehalococcoides present at MW-02 relative to other areas of the site where biostimulation relying on indigenous bacteria has been more successful. Therefore, Phase 2 included the injection of KB-1 Plus® bacteria culture as a biological amendment to the emulsified soybean oil and sodium lactate injections. The KB-1 Plus® bacteria culture contains a proprietary mixture of dehalobacter and dehalococcoides strains formulated by the laboratory to biologically dechlorinate Freon 113.

The 2012 Supplemental Injection Work Plan (URS, 2012) was approved by the NYSDEC in April 2012. Phase 1 injections were performed from September 25, 2012 through October 4, 2012, beginning 1 day after the September 2012 groundwater sampling event. The target interval for the 16 proposed injection locations was within the saturated zone, extending from the water table to approximately 29 feet below grade. Based on the most recent water level readings, the depths to the water table ranged from 5-7 feet below grade. Phase 2 injections were performed on November 1, 2012. The phases were separated to allow for the biostimulation from Phase 1 to propagate from the injection locations and to provide for the development of anaerobic conditions in the aquifer favorable for bacteria survival during Phase 2 bioaugmentation. The target interval for the six (6) 6 proposed injection locations was within the saturated zone, at approximately 15, 20, and 25 feet below grade.

Field Program

Prior to injection activities, utilities were marked out in the vicinities of the 16 proposed Phase 1 injection points and the 6 proposed Phase 2 injection points. Some of the injection locations were relocated slightly to avoid surface and/or subsurface obstructions.

Phase 1

The injections of sodium lactate and emulsified oil substrate began on September 25, 2012. Zebra Environmental supplied the mixing equipment and executed the injections. URS coordinated and oversaw all fieldwork. A Geoprobe rig was used to advance a pressure-activated injection probe and rod assembly. A Sidewinder™, an injection pulsing tool rented from Wavefront Technology Solutions Inc., was placed between the high-pressure hose and rods to enhance the effectiveness of the injections by spreading the injection substrates more evenly throughout the formation. Using this equipment, only a brief stoppage was required every four feet to remove the rod sections and reconnect the Sidewinder™ to the rods.

A commercially-prepared emulsified oil substrate, SRS® 60-B, purchased from Terra Systems, Inc. (Wilmington, DE), was mixed with water prior to being injected at 16 injection locations. WILCLEAR™ sodium lactate, purchased from JRW Technologies, Inc. (Lexana, KS), was also mixed with water prior to being injected at 16 injection locations. The injection locations are shown on **Figure 14**. The volumes injected in each interval are presented in **Appendix C**. The Phase 1 injection program was completed over 8 days and a total of approximately 1,104 gallons of dilute SRS® 60-B and 4,624 gallons of dilute WILCLEAR™ were injected into the subsurface.

Phase 2

SiREM suggested injecting anaerobic chase water following the injection of the KB-1 Plus® during Phase 2. At the completion of the Phase 1 injections, Zebra supplied a ~330 gallon water tank. URS filled the water tank with tap water and 4 gallons of sodium lactate, and left it on-site to create conditions favorable to growth of a bacterial colony that would drive the water to an anaerobic state. On October 22, 2012, in consultation with SiREM, URS purged and collected groundwater from monitoring well MW-02 to evaluate reducing conditions in the aquifer prior to injection of KB-1 Plus®. After the parameters stabilized, dissolved oxygen was recorded as 0.42 mg/L and oxidation reduction potential was recorded as -119 millivolts. Anaerobic conditions in the receiving aquifer are necessary to promote survival of the injected bacteria. SiREM was pleased with the results indicating an opinion that dissolved oxygen is a poor indicator of reducing conditions, given that fluctuations with the dissolved oxygen meter can yield unreliable results and that oxidation reduction potential is a more reliable indicator of reducing conditions. The chase water in the water tank was also evaluated for reducing conditions. After stabilization, dissolved oxygen was recorded as 0.41 mg/L and oxidation reduction potential was recorded as

22 millivolts, indicating an aerobic environment. Tap water may not contain enough seed bacteria to create favorable anaerobic conditions. Therefore, approximately 12.7 gallons of groundwater from monitoring well MW-06, which was previously found to contain dehalococcoides bacteria, was purged into the water tank to seed a biological reaction to consume oxygen. Approximately 25 grams of sodium sulfite was also added to the water tank to act as an oxygen scavenger.

On October 31, 2012, one day prior to the scheduled bioaugmentation event, URS purged and sampled groundwater from monitoring well MW-02 to evaluate reducing conditions in the aquifer. After the parameters stabilized, dissolved oxygen was recorded as 0.47 mg/L and oxidation reduction potential was recorded as -82 millivolts. Though oxidation reduction potential was higher than previously recorded, the measurements still indicated acceptable reducing conditions. The chase water in the water tank was also reevaluated for reducing conditions. After stabilization, dissolved oxygen was recorded as 0.00 mg/L and oxidation reduction potential was recorded as -51 millivolts indicating that the chase water was in an acceptable anaerobic state. After parameters were recorded, an additional 10 gallons of sodium lactate, and approximately 25 grams sodium sulfite were added to the chase water and left to sit overnight to ensure that the conditions would remain anaerobic.

The injection of KB-1 Plus® bacteria culture was performed on November 1, 2012 using Zebra Environmental as the contractor to supply the injection equipment. A field technician from SiREM's parent company, GeoSyntec, was present onsite to assist in the injection of the KB-1 Plus®. URS coordinated and oversaw all fieldwork. A Geoprobe rig was used to advance a rod assembly. A nitrogen bubble was setup in the anaerobic chase water storage tank to continue to help drive dissolved oxygen out of the chase water and to displace oxygen from the tank headspace during the injection process. Using quick-connects, tubing was connected from a nitrogen tank to the KB-1® Plus vessel, and another line of tubing was connected to the vessel and purged with nitrogen gas to expel all oxygen in the tubing. The tubing was then inserted through the rods to the appropriate depth and approximately 1 liter of KB-1 Plus® was injected into the aquifer followed by approximately 18 gallons of chase water per lift. A total of 3 liters of KB-1 Plus® and 55 gallons of chase water were injected per location. The vessel was placed on a weight scale to measure 1 liter of KB-1 Plus® per lift.

The KB-1 Plus® was injected at 6 injection locations. The injection locations are shown on **Figure 14**. The volumes injected in each interval are presented in Appendix C. The Phase 2

injection program was completed in one day and a total of approximately 18 liters of KB-1 Plus® was injected into the subsurface.

6.0 CONCLUSIONS

A relative comparison of data from the September 2012 event with the April 2012 event, including Freon 113 and its degradation products and various indicator parameters, is presented in **Table 4** (see below). Comparative data from these events is also discussed in Section 4.

The Freon 113 data trends show a possible continuing residual effect of the previously completed supplemental injection event; although the longer term trend indicates that the effect is diminishing. Freon 113 concentrations decreased at MW-02, MW-03, MW-06, and MW-07R; and remained the same at non-detect at MW-04 in the September 2012 event. Freon 113 daughter product Freon 123a decreased at MW-02, MW-03, MW-06, and MW-07R, and remained the same at non-detect at MW-04 in the September 2012 event. Freon 113 daughter product Freon 1113 decreased at all monitoring locations in the September 2012 event.

Oxidation-reduction potentials decreased in all wells. Following the IRM injection in November 2004 (a period of strong Freon reduction), oxidation-reduction potentials in site wells, except GZ-06, were observed to fall to approximately -135 to -155 millivolts. Currently, the oxidation-reduction potentials in site wells have a less reducing range (-78 to -118 millivolts). Sulfate, which is a competing electron acceptor with Freon, increased at MW-07R; and decreased at MW-02, MW-03, MW-04, and MW-06. The 2012 pre-injection levels of sulfate (ranging from 12 to 52 mg/L) are generally higher than levels that would be expected in a robust reductively dechlorinating environment (0 to 25 mg/L).

Methane concentrations decreased in all wells. Methane is a byproduct of anaerobic biological activity and the decrease across the site indicates that biological activity continued to decrease prior to the 2012 injections. Dissolved oxygen concentrations remained the same at 0 mg/L at all wells.

Dissolved oxygen and oxidation-reduction potential were tested in water collected from MW-02 on October 22 and October 31, 2012 (post-biostimulation; pre-bioaugmentation) and on November 29, 2012 (post-biostimulation; post-bioaugmentation). Results, particularly oxidation-reduction potential, indicate slightly improving anaerobic conditions.

Field parameters, Freon 113, Freon 123a, Freon 1113, sulfate, and methane were tested in water collected from MW-02 on November 29, 2012. The results from this sample reflect post-injection conditions in the aquifer. Results indicate that a robust bacterial colony has been established, reductive dechlorination is occurring, and that anaerobic conditions favorable to bacterial survival and continued dechlorination are present.

Table 4

Comparison of April 2012 to September 2012 Data

Location	Freon 113	Freon 123a	Freon 1113	Methane	Sulfate	ORP	DO
MW-02	↓	↓	↓	↓	↓	↓	↔
MW-03	↓	↓	↓	↓	↓	↓	↔
MW-04	↔	↔	↓	↓	↓	↓	↔
MW-06	↓	↓	↓	↓	↓	↓	↔
MW-07/07R	↓	↓	↓	↓	↑	↓	↔

Legend

↓ Decrease from previous event

↑ Increase from previous event

↔ No significant change from previous event

7.0 CONTINGENCY TRIGGER EVALUATION

Contingency measures were triggered at the site by the April 2011 data collected at MW-02, in accordance with Section 4.0 of the Site Management Plan (URS, 2010). As a result, Dow performed the 2012 supplemental injection event to stimulate and maintain anaerobic biological processes, targeting remaining areas of contamination. Comparison of data to trigger criteria presented in the Site Management Plan will resume following the next site-wide groundwater sampling event scheduled for April 2013.

8.0 NEXT STEPS

The next site-wide routine groundwater-monitoring event is planned for April 2013. In the interim, post-injection sampling events are planned as shown in the table below.

		Sample Parameter or Parameter Group								
		Freon 113	Freon 123a	Freon1113	Methane	Sulfate	Dehalococcoides	Dehalobacter	Field Parameters	Natural Attenuation Parameters
9/24/2012*	MW-02	x	x	x	x	x	x	x	x	x
	MW-03	x	x	x	x	x		x	x	x
	MW-04	x	x	x	x	x		x	x	x
	MW-06	x	x	x	x	x		x	x	x
	MW-07R	x	x	x	x	x		x	x	x
10/22/2012*	MW-02								x	
10/31/2012*	MW-02								x	
11/29/2012*	MW-02	x	x	x	x	x	x	x	x	
Week of 12/31/2012	MW-02	x	x	x	x	x	x	x	x	
Week of 1/28/2013	MW-02	x	x	x	x	x	x	x	x	
April 2013	MW-02	x	x	x	x	x	x	x	x	x
	MW-03	x	x	x	x	x		x	x	x
	MW-04	x	x	x	x	x		x	x	x
	MW-06	x	x	x	x	x		x	x	x
	MW-07R	x	x	x	x	x		x	x	x

* Event completed

** Field parameters include dissolved oxygen, oxidation-reduction potential, pH, specific conductance, temperature, and turbidity

*** Natural attenuation parameters include iron (total and ferrous) alkalinity (total, bicarbonate, carbonate, and hydroxide), hardness, nitrogen-nitrate, and TOC

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TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS (September 24, 2012)
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location	Measuring Point Elevation[1] (ft.)	Depth to Water[2] (ft.)	Water Surface Elevation (ft.)
GZ-03[3]	26.16	6.00	20.16
GZ-06	28.02	7.90	20.12
MW-01	25.74	5.75	19.99
MW-02	25.63	6.06	19.57
MW-03	25.59	6.05	19.54
MW-04	25.31	5.85	19.46
MW-05	24.63	5.12	19.51
MW-06	25.77	6.18	19.59
MW-07R	25.63	6.15	19.48
Benchmark B (Sheldrake River - South [Rockaway Avenue] Bridge)	32.21	13.30	18.91
Benchmark C[4] (Sheldrake River - between North and South Bridges)	--	--	18.01
Benchmark D (Sheldrake River - North [Fenimore Road] Bridge)	27.41	10.30	17.11

Notes:

1) All of the monitoring well and benchmark locations were resurveyed on 6/25/2010.
2) Water elevations for all wells and benchmarks were collected on 9/24/2012.
3) Monitoring well GZ-03 was modified from a stick-up well to a flush-mount well on 6/24/2010.
4) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the North and South bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average water surface elevation of Benchmark B and Benchmark D.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-03
Sample ID			20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N	20120924MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	10/22/12	10/31/12	11/29/12	09/24/12
Parameter	**Units**	**Criteria***					
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	98	NA	NA	380	130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	650	NA	NA	65	1.1
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	26	NA	NA	29	3.2
Dissolved Gases							
Methane	UG/L	-	4,000	NA	NA	5,600	7,600
Total Metals							
Iron	UG/L	300	32,900	NA	NA	NA	21,800
Miscellaneous Parameters							
Alkalinity, Total (As CaCO3)	MG/L	-	245	NA	NA	NA	292
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	245	NA	NA	NA	292
Alkalinity, Carbonate (As CaCO3)	MG/L	-	5.0 U	NA	NA	NA	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	NA	NA	NA	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	100	NA	NA	2,000	NA
Dehalobacter	GC/mL	-	5	NA	NA	40,000	700
Hardness (as CaCO3)	MG/L	-	388	NA	NA	NA	248
Nitrogen, Nitrate	MG/L	10	0.10 U	NA	NA	NA	0.10 U
Sulfate	MG/L	250	50.8	NA	NA	2.2 U	45.4
Total Organic Carbon	MG/L	-	8.4	NA	NA	NA	7.2
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.42	0.47	0.78	0.00
Ferrous Iron	MG/L	-	9.0	NA	NA	NA	3.5
Oxidation-Reduction Potential	mV	-	-78	-119	-82	-116	-84

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Estimated Result

NA - Not Analyzed

Detection Limits shown are PQL

Advanced Selection: WG Results Sept12
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([LOGDATE] >= #9/24/2012#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD')

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-03
Sample ID			20120924MW-02V10N	20121022MW-02V10N	MW-02	20121129MW-02V10N	20120924MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	10/22/12	10/31/12	11/29/12	09/24/12
Parameter	**Units**	**Criteria***					
Field Parameter							
pH	S.U.	-	6.62	6.38	6.35	6.40	6.64
Specific Conductance	MS/CM	-	1.69	2.53	2.52	2.39	0.697
Temperature	DEG C	-	24.07	19.21	19.42	14.75	23.57
Turbidity	NTU	-	0.0	0.0	9.3	0.0	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Estimated Result

NA - Not Analyzed

Detection Limits shown are PQL

Advanced Selection: WG Results Sept12
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([LOGDATE] >= #9/24/2012#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD')

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-06	MW-07R
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	20120924MW-06V13N	20120924MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			09/24/12	09/24/12	09/24/12	09/24/12
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			
Volatiles						
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.1	2.5	140	430
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	3.3	5.9 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	3.6	2.4 J
Dissolved Gases						
Methane	UG/L	-	570	550	1,300	3,900
Total Metals						
Iron	UG/L	300	7,430	7,280	12,100	29,900
Miscellaneous Parameters						
Alkalinity, Total (As CaCO3)	MG/L	-	211	210	304	335
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	211	210	304	335
Alkalinity, Carbonate (As CaCO3)	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	4 U	1 J	10
Hardness (as CaCO3)	MG/L	-	188	185	308	414
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.10 U	0.10 U
Sulfate	MG/L	250	12.3	12.0	52.2	32.0
Total Organic Carbon	MG/L	-	10.2	10	6.9	11.8
Field Parameter						
Dissolved Oxygen	MG/L	-	NA	0.00	0.00	0.00
Ferrous Iron	MG/L	-	NA	27.7	9.9	30.4
Oxidation-Reduction Potential	mV	-	NA	-96	-80	-118

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

J - Estimated Result

NA - Not Analyzed

Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-06	MW-07R
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	20120924MW-06V13N	20120924MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			09/24/12	09/24/12	09/24/12	09/24/12
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			
Field Parameter						
pH	S.U.	-	NA	6.91	6.82	6.69
Specific Conductance	MS/CM	-	NA	0.519	0.636	1.78
Temperature	DEG C	-	NA	25.40	22.01	22.35
Turbidity	NTU	-	NA	8.0	0.0	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect

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Advanced Selection: WG Results Sept12
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([LOGDATE] >= #9/24/2012#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD')

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	5.0 U	10 U	5.0 U	5.0 U
Benzene	UG/L	1	NA	5.0 U	10 U	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	0 U	0 U	5.4 NJ	0 U
1,1-Dichloroethene	UG/L	5	NA	0.8 J	1.5 J	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
Ethylbenzene	UG/L	5	NA	4.0 U	8 U	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	5.0 U	10 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	5.0 U	10 U	5.0 U	5.0 U
Tetrachloroethene	UG/L	5	NA	0.6 J	2 U	0.5 J	1.0 U
Trichloroethene	UG/L	5	NA	1.0 U	2 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	100	230	74	5.0 U
Vinyl Chloride	UG/L	2	NA	5.0 U	10 U	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	5.0 U	10 U	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	20	41	26	0.7 J
Dissolved Gases							
Methane	UG/L	-	5.0 U	140	98	89	5.9
Total Metals							
Iron	UG/L	300	NA	2,390	866	517 J	173
Dissolved Metals							
Iron	UG/L	300	NA	2,290	778	583 J	85.3 B

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	559	474	477 J	218
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	0.1 U	0.1 U	0.1 U	0.1 U
Nitrogen, Kjeldahl, Total	MG/L	-	NA	0.5 U	0.7	1.3	0.57
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	NA	0.58	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	0.12 J	NA	NA
Sulfate	MG/L	250	15.8	25.2	27.5	32.4	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	2.8	9.6	0.25	0.03
Ferric Iron (lab)	MG/L	-	NA	0.1 U	0.1 U	0.52	0.143
Fluoride	MG/L	1.5	NA	0.1 U	0.1 U	0.1 U	0.32
Oil & Grease	MG/L	-	NA	NA	NA	R	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.52	0.76	0.5	0.48	6.86
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	98.5	-110	-75	-129	73
pH	S.U.	-	6.05	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-03	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20070801GZ-03V11N	GZ06_52103	GZ06	GZ06-091703	GZ-06-121803
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/01/07	05/21/03	07/23/03	09/17/03	12/18/03
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	0.599	2.27	1.99	1.98	1.11
Temperature	DEG C	-	21.6	NA	NA	NA	NA
Turbidity	NTU	-	28	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	24	15	10 U	13	2.0 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	100 J	9.0 J	10 U	74	2.0 J
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	36	4.0 J	2.0 J	23	2.0 J
Dissolved Gases							
Methane	UG/L	-	48	310	74	140	180
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	1,610	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	20.8	14.2	31.7	23.2	25.1
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	1.00 U	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	1.15	0.11	0.03	5.67	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-210	-107	-59	-49	NA
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Only Detected Results Reported.

Detection Limits shown are PQL

Advanced Selection: WG Sept12 Tab:
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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			GZ06	GZ-06	MW-GZ-06V08N	GZ-0608N	20061117GZ-0608
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	05/31/05	12/20/05	08/15/06	11/17/06
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	5.25	1.43	1.16	1.28	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.0 J	1.0 J	2.0 J	10 U	10 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	2.0 J	14	13	10 UJ	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	2.0 J	4.0 J	10	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	210	360	23	5,900	880
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.4	29.3	50.4	5 U	28.1
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	4.17	1.18	4.1	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-29	15.6	-89.0	-102
pH	S.U.	-	NA	NA	6.22	6.15	6.31

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Only Detected Results Reported.

Detection Limits shown are PQL

Advanced Selection: WG Sept12 Tab:
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Printed: 11/13/2012 4:26:34 PM
([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID			20061117GZ0608FD	20070207GZ-06V08N	20070731GZ-06V08	20080228GZ06V08	20080812GZ06V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*	Field Duplicate (1-1)				
Field Parameter							
Specific Conductance	MS/CM	-	NA	3.06	1.671	0.89	1.59
Temperature	DEG C	-	NA	NA	NA	8.91	17.5
Turbidity	NTU	-	NA	NA	NA	1,000	18

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	*					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	140 J	130 J
Benzene	UG/L	1	NA	NA	NA	50 U	25 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	1 UJ	20 U	0 U	0 U
1,1-Dichloroethene	UG/L	5	NA	NA	20 U	4.4 J	5.1 J
cis-1,2-Dichloroethene	UG/L	5	NA	NA	250	50 U	25 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	4.0 J	50 U	25 U
Ethylbenzene	UG/L	5	NA	NA	NA	40 U	20 U
2-Hexanone	UG/L	50	NA	NA	NA	50 U	25 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	50 U	25 U
Tetrachloroethene	UG/L	5	NA	NA	8.0 J	10 U	5.0 U
Trichloroethene	UG/L	5	NA	NA	5.0 J	10 U	5.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	1 UJ	20 U	710	880
Vinyl Chloride	UG/L	2	NA	NA	5.0 J	50 U	25 U
Xylene (total)	UG/L	5	NA	NA	NA	50 U	25 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	1 U	20 U	34 J	40
Dissolved Gases							
Methane	UG/L	-	8,700	5,000	98	26	32
Total Metals							
Iron	UG/L	300	NA	NA	NA	27,800	28,300
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	27,900	28,200

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Advanced Selection: WG Sept12 Tab:
N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/13/2012 4:26:34 PM
([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	*					Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	338	338
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	3.3	3.4
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	6.6	6.2
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.15	0.16
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	8.4	39.2	44.0	46.0
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	25.3	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	2.5	3
Fluoride	MG/L	1.5	NA	NA	NA	0.28	0.3
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.36	0.00	0.99	0.36	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-91	-154	95.4	-108	NA
pH	S.U.	-	6.12	6.73	6.25	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			GZ-06	GZ-06	MW-01	MW-02	MW-02
Sample ID			20090218GZ-06V10N	20100225GZ-06V14N	20070801MW-01V08N	MW02-5-20-03	MW02-5-20-03DUP
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/25/10	08/01/07	05/20/03	05/20/03
Parameter	**Units**	*					Field Duplicate (1-1)
Field Parameter							
Specific Conductance	MS/CM	-	2.13	5.49	1.755	1.68	NA
Temperature	DEG C	-	9.24	7.23	NA	NA	NA
Turbidity	NTU	-	16	300	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	R	R	5.0 U	5.0 U	NA
Benzene	UG/L	1	50 U	50 U	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	0 U	14
1,1-Dichloroethene	UG/L	5	8.2 J	7.5 J	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
trans-1,2-Dichloroethene	UG/L	5	50 U	50 U	5.0 U	5.0 U	NA
Ethylbenzene	UG/L	5	40 U	3.4 J	4.0 U	4.0 U	NA
2-Hexanone	UG/L	50	50 U	50 U	5.0 U	5.0 U	NA
4-Methyl-2-Pentanone	UG/L	-	50 U	50 U	5.0 U	5.0 U	NA
Tetrachloroethene	UG/L	5	10 U	10 U	1.0 U	1.0 U	NA
Trichloroethene	UG/L	5	10 U	10 U	1.0 U	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,000	1,000	54	12	21 J
Vinyl Chloride	UG/L	2	50 U	50 U	5.0 U	5.0 U	NA
Xylene (total)	UG/L	5	7.1 J	11 J	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	40 J	41 J	7.8	3.3 J	4 J
Dissolved Gases							
Methane	UG/L	-	54	52	410	320	140
Total Metals							
Iron	UG/L	300	30,100	30,900	63,800 J	69,000	NA
Dissolved Metals							
Iron	UG/L	300	30,500	30,500	60,900 J	69,300	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	307	283	839	769	238
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	4.1	3.8	11.5	11.9	NA
Nitrogen, Kjeldahl, Total	MG/L	-	6.6	6.1	17.1	16.9	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1	0.1 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	32.3	32.5	4.80	5.0 U	15.2
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	25.7	28.0	49.3	6.3	NA
Ferric Iron (lab)	MG/L	-	4.4	2.9	48.3	62.7	NA
Fluoride	MG/L	1.5	0.37	0.39	0.3	0.31	0.294
Oil & Grease	MG/L	-	NA	NA	5 U	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.26	0.53	0 U	0.91
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-190	-99	-108	-133
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			DUP-7_22_03	MW02-7_22_03	MW02-091803	MW-02-121803	MW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/03	07/22/03	09/18/03	12/18/03	07/22/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Field Parameter							
Specific Conductance	MS/CM	-	NA	1.65	3.17	3.28	2.34
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	120	18	200	21	84
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200	110	890	100	800
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	86 J	15	110	10	95
Dissolved Gases							
Methane	UG/L	-	2,000	5,800	5,500	4,300	6,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	25.2	5.0 U	27.1	5.0 U	15.9
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	4.92	NA	1.56
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-140	-137	-144	NA	-120
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			MW-02	MW-02V06N	MW-02V15N	20061117MW02VISN	20070207MW-02V06N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	12/20/05	08/14/06	11/17/06	02/07/07
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	1.19	2.51	1.55	NA	1.77
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: WG Sept12 Tab:
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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	61	120 J	160	81 J	300
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	290	830 J	700	1,300	1,200 D
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	40	72	38 J	34 J	51
Dissolved Gases							
Methane	UG/L	-	2,900	6,400	6,200	8,000	6,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	27.6	23.2	47.9	35.2 J	36.9
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.31	2.87	0 U	0 U	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-97.2	-131.0	-119	-154	-161
pH	S.U.	-	6.39	6.38	6.40	6.26	6.16

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20070731MW-02V15N	20080228MW02V15N	20080812MW02V10N	20090218MW-02V10N	20091013MW-02V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/31/07	02/28/08	08/12/08	02/18/09	10/13/09
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	2.357	2.18	2.14	2.55	2.09
Temperature	DEG C	-	NA	10.5	18.9	11.23	18.88
Turbidity	NTU	-	NA	28	3	5	9.4

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	92 J	240	180	110 J	180
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	76 J	670	580	920	490
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	6.1	37	26	33 J	26
Dissolved Gases							
Methane	UG/L	-	7,500	8,400	6,200	10,000	5,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	60,400
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	361
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	1.79
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	726
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	38.9	36.9 J	26.6	5 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	19.1
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.64	6.21	0.00	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	50.6
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	9.8
Oxidation-Reduction Potential	mV	-	-147	-136	-107	-97	-115
pH	S.U.	-	6.57	8.91	6.76	6.36	6.80

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID			20100225MW-02V08N	20100624MW-02V08N	20101006MW-02V08N	20110406MW-02V08N	20110913MW02V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/25/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	4.48	1.70	1.91	3.34	3.24
Temperature	DEG C	-	9.33	16.71	19.45	10.98	22.1
Turbidity	NTU	-	0	3.0	11.9	3.9	0.1

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-03	MW-03
Sample ID			20120411MW-02V08N	20120924MW-02V10N	MW03_52103	MW03	DUP-91703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	05/21/03	07/23/03	09/17/03
Parameter	**Units**	*					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	250 U	78	110
Benzene	UG/L	1	NA	NA	250 U	2.3	2.2
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	R	130 J	69 J
Chlorotrifluoroethene (Freon-1113)	UG/L	5	140 J	98	0 U	7.0 NJ	6.2 NJ
1,1-Dichloroethene	UG/L	5	NA	NA	33 J	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	250 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	250 U	5.0 U	5.0 U
Ethylbenzene	UG/L	5	NA	NA	200 U	0.3 J	4.0 U
2-Hexanone	UG/L	50	NA	NA	250 U	5.0 U	19
4-Methyl-2-Pentanone	UG/L	-	NA	NA	250 U	5.0 U	11
Tetrachloroethene	UG/L	5	NA	NA	50 U	1.0 U	1.0 U
Trichloroethene	UG/L	5	NA	NA	50 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1,200 J	650	5,800	68	26
Vinyl Chloride	UG/L	2	NA	NA	250 U	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	NA	250 U	1.1 J	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	57	26	78 J	43	180
Dissolved Gases							
Methane	UG/L	-	8,100	4,000	86	56	2,400
Total Metals							
Iron	UG/L	300	NA	32,900	1,170	150,000	174,000 J
Dissolved Metals							
Iron	UG/L	300	NA	NA	267	152,000	187,000 J

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-03	MW-03
Sample ID			20120411MW-02V08N	20120924MW-02V10N	MW03_52103	MW03	DUP-91703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	05/21/03	07/23/03	09/17/03
Parameter	**Units**	*					Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	245	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	245	NA	NA	NA
Chloride	MG/L	250	NA	NA	113	143	99.2 J
Dehalococcoides ethenogenes	CEQ/mL	-	NA	100	NA	NA	NA
Dehalobacter	GC/mL	-	NA	5	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	388	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	0.36	2.7	0.86
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	1.3	10.8	4.5
Nitrogen, Nitrate	MG/L	10	NA	0.10 U	2	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	0.1 UJ	NA
Sulfate	MG/L	250	51.8	50.8	32.7	26.9	5.0 U
Total Organic Carbon	MG/L	-	NA	8.4	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	0.5	3.7	25.5
Ferric Iron (lab)	MG/L	-	NA	NA	0.67	146	67.0
Fluoride	MG/L	1.5	NA	NA	0.28	0.44	0.27
Oil & Grease	MG/L	-	NA	NA	NA	NA	R
Field Parameter							
Dissolved Oxygen	MG/L	-	0.0	0.00	0.58	0 U	NA
Ferrous Iron	MG/L	-	NA	9.0	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-44	-78	40	-103	NA
pH	S.U.	-	6.56	6.62	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-03	MW-03
Sample ID			20120411MW-02V08N	20120924MW-02V10N	MW03_52103	MW03	DUP-91703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/11/12	09/24/12	05/21/03	07/23/03	09/17/03
Parameter	**Units**	*					Field Duplicate (1-1)
Field Parameter							
Specific Conductance	MS/CM	-	1.86	1.69	0.638	4.35	NA
Temperature	DEG C	-	13.45	24.07	NA	NA	NA
Turbidity	NTU	-	0.0	0.0	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW03-091703	DUP1_121703	MW-03_121703	MW-03	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	12/17/03	07/23/04	05/31/05
Parameter	**Units**	*		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	110	130 J	120 J	NA	NA
Benzene	UG/L	1	1.8	10 U	10 U	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	65 J	39 J	38 J	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	68 J	83
1,1-Dichloroethene	UG/L	5	2.0 U	4.0 U	4 U	NA	NA
cis-1,2-Dichloroethene	UG/L	5	5.0 U	10 U	10 U	NA	NA
trans-1,2-Dichloroethene	UG/L	5	5.0 U	10 U	10 U	NA	NA
Ethylbenzene	UG/L	5	4.0 U	8.0 U	8 U	NA	NA
2-Hexanone	UG/L	50	16	10 U	10 U	NA	NA
4-Methyl-2-Pentanone	UG/L	-	11	10 U	10 U	NA	NA
Tetrachloroethene	UG/L	5	1.0 U	4.9	4.6	NA	NA
Trichloroethene	UG/L	5	1.0 U	2.0 U	2 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	16	150	150	4,900 J	2.0 J
Vinyl Chloride	UG/L	2	5.0 U	10 U	10 U	NA	NA
Xylene (total)	UG/L	5	5.0 U	10 U	10 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	110	170	160	3,900	14
Dissolved Gases							
Methane	UG/L	-	2,500	7,200	4,900	2,700	6,300
Total Metals							
Iron	UG/L	300	178,000 J	156,000	164,000	NA	NA
Dissolved Metals							
Iron	UG/L	300	186,000 J	167,000	176,000	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds

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J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW03-091703	DUP1_121703	MW-03_121703	MW-03	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	12/17/03	07/23/04	05/31/05
Parameter	**Units**	*		Field Duplicate (1-1)			
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	91.5 J	224	192	71.7	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.95	1.4	1.2	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	4.4	4.0	4.0	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	27.9	23.5	30.0	NA	NA
Ferric Iron (lab)	MG/L	-	93.0	132	134	NA	NA
Fluoride	MG/L	1.5	0.2	0.22	0.25	0.397	NA
Oil & Grease	MG/L	-	R	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.01	NA	0.35	1.05	1.24
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-90	NA	-59	-143	-133
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW03-091703	DUP1_121703	MW-03_121703	MW-03	MW-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	12/17/03	07/23/04	05/31/05
Parameter	**Units**	*		Field Duplicate (1-1)			
Field Parameter							
Specific Conductance	MS/CM	-	1.64	NA	1.99	2.40	3.19
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.0 J	51	39	54	13 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	10	2.0 J	0.5 J
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 J	0.8 J	48	7.0 J	4.0 J
Dissolved Gases							
Methane	UG/L	-	10,000	7,400	15,000	4,500	18,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	7.80	38.4	14.1
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	5.36	2.44	0.22	2.94
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-151	-123	-116	-79.7	-123.0
pH	S.U.	-	NA	NA	NA	6.15	6.15

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03VION	MW-03V15N	20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	08/14/06	02/07/07	07/31/07	02/28/08
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	1.20	0.946	0.91	1.309	1.36
Temperature	DEG C	-	NA	NA	NA	NA	11.6
Turbidity	NTU	-	NA	NA	NA	NA	41

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	08/12/08	02/18/09	10/13/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)			Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10	10	38	20	19
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	5.0 J	0.92 J	0.82 J
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 J	1.0 J	40	2.1	1.9
Dissolved Gases							
Methane	UG/L	-	10,000	8,400	13,000	5,300	4,800
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	08/12/08	02/18/09	10/13/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)			Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	30.0	28.1	50.7 J	4.6 J	8.7
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0 U	0 U	NA	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-149	-185	NA	-103
pH	S.U.	-	NA	6.36	6.06	NA	5.87

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20080812MW03V10FD	20080812MW03V10N	20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	08/12/08	02/18/09	10/13/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)			Field Duplicate (1-1)	
Field Parameter							
Specific Conductance	MS/CM	-	NA	1.69	2.08	NA	1.85
Temperature	DEG C	-	NA	17.8	12.87	NA	18.68
Turbidity	NTU	-	NA	2	5	NA	8.7

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	17 J	26	4.6	110 J	69
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 UJ	1 U	1 U	32	4.2
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	0.5 J	1 U	99 J	8.3
Dissolved Gases							
Methane	UG/L	-	13,000	6,000	7,400	18,000	12,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	35,300
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	596
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	1,820
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	520
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	11.6	15.8	5.1 J	34.0	19
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	27.1
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.85	0	0.00	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	29.8
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	5.5
Oxidation-Reduction Potential	mV	-	-138	-170	-116	-115	NA
pH	S.U.	-	6.32	9.28	6.73	6.38	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			20100226MW-03V09N	20100624MW-03V09N	20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	*					Field Duplicate (1-1)
Field Parameter							
Specific Conductance	MS/CM	-	3.39	1.50	1.68	1.55	NA
Temperature	DEG C	-	8.95	16.51	20.19	11.90	NA
Turbidity	NTU	-	94	5.1	6.3	3.6	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Non-Detect UJ - Not detected above the estiamted quantitation limit

D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

R - Rejected result NA - Not Analyzed

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	05/20/03	12/17/03
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
Benzene	UG/L	1	NA	NA	NA	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	82	150 J	130	0 U	0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	5.0 U	5.0 U
Ethylbenzene	UG/L	5	NA	NA	NA	4.0 U	4.0 U
2-Hexanone	UG/L	50	NA	NA	NA	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	5.0 U	5.0 U
Tetrachloroethene	UG/L	5	NA	NA	NA	1.0 U	1.0 U
Trichloroethene	UG/L	5	NA	NA	NA	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5.4	20 J	1.1	5.0 U	5.0 U
Vinyl Chloride	UG/L	2	NA	NA	NA	5.0 U	5.0 U
Xylene (total)	UG/L	5	NA	NA	NA	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	9.4	36	3.2	5.0 U	5.0 U
Dissolved Gases							
Methane	UG/L	-	15,000	15,000	7,600	380	35
Total Metals							
Iron	UG/L	300	35,700	NA	21,800	18,400	3,640
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	18,500	3,760

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds

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D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	05/20/03	12/17/03
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	596	NA	292	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	292	NA	NA
Chloride	MG/L	250	NA	NA	NA	238	294
Dehalococcoides ethenogenes	CEQ/mL	-	3,780	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	700	NA	NA
Hardness (as CaCO3)	MG/L	-	510	NA	248	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	1.6	1.2
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	6.2	1.9
Nitrogen, Nitrate	MG/L	10	0.1 U	NA	0.10 U	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	18.2	63.1	45.4	5.0 U	9.40
Total Organic Carbon	MG/L	-	26.7	NA	7.2	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	17.6	2.2
Ferric Iron (lab)	MG/L	-	NA	NA	NA	0.76	1.3
Fluoride	MG/L	1.5	NA	NA	NA	0.27	0.19
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.0	0.00	0.54	0 U
Ferrous Iron	MG/L	-	29.8	NA	3.5	NA	NA
Ferric Iron (calculated)	MG/L	-	5.9	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-124	-63	-84	-115	0 U
pH	S.U.	-	6.85	6.64	6.64	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-03	MW-03	MW-03	MW-04	MW-04
Sample ID			20110913MW03V09N	20120411MW-03V09N	20120924MW-03V09N	MW04-5-20-03	MW-04_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	05/20/03	12/17/03
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	1.99	1.02	0.697	1.61	0.99
Temperature	DEG C	-	20.7	13.35	23.57	NA	NA
Turbidity	NTU	-	21.8	0.0	0.0	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	10 U	1.0 J	10 U	0.7 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 UJ	0.7 J	10 U	10 U	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	69	99	190	400	420
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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Advanced Selection: WG Sept12 Tab:
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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	*	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	158	161	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	10.8	10.8	14.2	6.66	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.304	0.302	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.82	0 U	0 U	4.97
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-136	-126	-161	-154
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			Dup1	MW-04	MW-04	MW-04VION	MW-04V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/22/04	07/22/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	*	Field Duplicate (1-1)				
Field Parameter							
Specific Conductance	MS/CM	-	NA	1.05	1.85	1.47	1.14
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	*					Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0.6 J	10 U	1.0 J	10 U	1.0 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	10 UJ	10 U	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	400	43	5,700	290	1,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	*					Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	7.0	5 U	5 U	5 UJ
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	4.73	0.41	2.91	0 U	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-81	-79.2	-136.0	-126	NA
pH	S.U.	-	NA	6.59	6.45	6.65	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N	20090218MW-04V08FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	08/01/07	02/28/08	08/12/08	02/18/09
Parameter	**Units**	*					Field Duplicate (1-1)
Field Parameter							
Specific Conductance	MS/CM	-	0.804	1.241	1.16	0.531	NA
Temperature	DEG C	-	NA	NA	9.19	21.3	NA
Turbidity	NTU	-	NA	NA	9	2	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	*			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 J	15	6.6 J	7.7 J	12
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	1 U	1 UJ	1 UJ	1 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	1 U	1 U	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	1,600	3,100	5,200	5,100	4,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	*			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	20.8	13	11.3	18.4
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0.00	NA	0.00	0.80
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-158	-122	NA	-124	-146
pH	S.U.	-	6.33	6.43	NA	6.50	8.99

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

Detection Limits shown are PQL

Advanced Selection: WG Sept12 Tab:
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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N	20100624MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	02/25/10	06/24/10
Parameter	**Units**	*			Field Duplicate (1-1)		
Field Parameter							
Specific Conductance	MS/CM	-	1.75	1.83	NA	2.14	1.84
Temperature	DEG C	-	9.36	19.37	NA	8.34	18.45
Turbidity	NTU	-	4	4.6	NA	1.5	1.9

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Concentration Exceeds

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D - Diluted analysis

J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	*		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.8	5 J	4.3 J	1.2	7.2 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	1 U	1 U	1 U	1 UJ
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	1 UJ	1 UJ	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	2,400	4,200	4,300	1,700	2,700
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	*		Field Duplicate (1-1)			
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.5 J	26.6	22.3	16.7	18.7
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0	NA	0.00	0.00	0.0
Ferrous Iron	MG/L	-	NA	NA	NA	14.3	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-96	NA	-78	-126	-87
pH	S.U.	-	6.86	NA	6.40	6.83	6.80

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-04	MW-04	MW-04
Sample ID			20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N	20120411MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	04/06/11	09/13/11	04/11/12
Parameter	**Units**	*		Field Duplicate (1-1)			
Field Parameter							
Specific Conductance	MS/CM	-	1.48	NA	2.19	2.29	1.38
Temperature	DEG C	-	21.38	NA	12.86	22.5	14.07
Turbidity	NTU	-	3.7	NA	0.0	0.2	8.9

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	05/21/03	12/18/03	07/23/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	5.0 U	5.0 U	NA
Benzene	UG/L	1	NA	NA	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	2.1	2.5	0 U	0 U	10 U
1,1-Dichloroethene	UG/L	5	NA	NA	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	5.0 U	5.0 U	NA
Ethylbenzene	UG/L	5	NA	NA	4.0 U	4.0 U	NA
2-Hexanone	UG/L	50	NA	NA	5.0 U	5.0 U	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	5.0 U	5.0 U	NA
Tetrachloroethene	UG/L	5	NA	NA	0.4 J	1.0 U	NA
Trichloroethene	UG/L	5	NA	NA	1.0 U	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U	5.0 U	5.0 U	0.5 J
Vinyl Chloride	UG/L	2	NA	NA	5.0 U	5.0 U	NA
Xylene (total)	UG/L	5	NA	NA	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U	5.0 U	5.0 U	10 U
Dissolved Gases							
Methane	UG/L	-	570	550	27	6.7	47
Total Metals							
Iron	UG/L	300	7,430	7,280	2,110	15,500	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	1,670	39.7 U	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	05/21/03	12/18/03	07/23/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	211	210	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	211	210	NA	NA	NA
Chloride	MG/L	250	NA	NA	49.8	27.5	63.9
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	4 U	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	188	185	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	0.25	0.1 U	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	3.6	0.61	NA
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U	0.22	0.18	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	12.3	12.0	50.1	61.4	42.3
Total Organic Carbon	MG/L	-	10.2	10	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	1.7	0.07	NA
Ferric Iron (lab)	MG/L	-	NA	NA	0.43	15.4	NA
Fluoride	MG/L	1.5	NA	NA	0 U	0.12	0.103
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0.00	0.37	0 U	0.97
Ferrous Iron	MG/L	-	NA	27.7	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-96	26	121	46
pH	S.U.	-	NA	6.91	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Detection Limits shown are PQL

Advanced Selection: WG Sept12 Tab:
N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/13/2012 4:26:48 PM
([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-04	MW-04	MW-05	MW-05	MW-05
Sample ID			20120924MW-04V08FD	20120924MW-04V08N	MW05_52103	MW-05-121803	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	09/24/12	05/21/03	12/18/03	07/23/04
Parameter	**Units**	*	Field Duplicate (1-1)				
Field Parameter							
Specific Conductance	MS/CM	-	NA	0.519	0.426	0.629	0.463
Temperature	DEG C	-	NA	25.40	NA	NA	NA
Turbidity	NTU	-	NA	8.0	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

R - Rejected result NA - Not Analyzed

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	10 U	5.0 U	5.0 U	10 U	NA
Benzene	UG/L	1	10 U	5.0 U	5.0 U	10 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	5.7 NJ	0 U	0 U	5 J
1,1-Dichloroethene	UG/L	5	4 U	1.2 J	2.0 U	4 U	NA
cis-1,2-Dichloroethene	UG/L	5	10 U	1.7 J	1.4 J	1.3 J	NA
trans-1,2-Dichloroethene	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
Ethylbenzene	UG/L	5	8 U	4.0 U	4.0 U	8 U	NA
2-Hexanone	UG/L	50	10 U	5.0 U	5.0 U	10 U	NA
4-Methyl-2-Pentanone	UG/L	-	10 U	5.0 U	5.0 U	10 U	NA
Tetrachloroethene	UG/L	5	2 U	1.0 U	1.0 U	2 U	NA
Trichloroethene	UG/L	5	2 U	1.0 U	1.0 U	2 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	220	180	97	250	140 J
Vinyl Chloride	UG/L	2	10 U	1.2 J	5.0 U	10 U	NA
Xylene (total)	UG/L	5	10 U	5.0 U	5.0 U	10 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.8 J	9.5	8.6	14	23
Dissolved Gases							
Methane	UG/L	-	49	81	99	78	40
Total Metals							
Iron	UG/L	300	14,400	10,500	8,370 J	7,690	NA
Dissolved Metals							
Iron	UG/L	300	14,300	10,300	8,470 J	7,670	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	184	82.3	74.6	84.0	60.5
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.19	0.33	0.31	0.36	NA
Nitrogen, Kjeldahl, Total	MG/L	-	0.72	1.1	0.88	0.79	NA
Nitrogen, Nitrate	MG/L	10	0.33	0.1 U	0.1 U	0.1 UJ	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	32.0	30.5	39.2	39.1	33.5
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	14.3	8.6	6.0	8.7	NA
Ferric Iron (lab)	MG/L	-	0.12	1.9	8.4	1.0 U	NA
Fluoride	MG/L	1.5	0.46	0.56	0.37	0.42	0.467
Oil & Grease	MG/L	-	NA	NA	5 U	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.93	1.07	0 U	0 U	1.04
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-145	-155	-143	-110	-64
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/10/03	07/22/03	09/18/03	12/17/03	07/23/04
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	0.741	0.866	0.581	0.602	0.513
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
Parameter	**Units**	*	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	6.0 J	5.0 J	6.0 J	6.0 J	10 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 J	1.0 J	10 U	10 U	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	16	14	10 UJ	10 UJ	10 U
Dissolved Gases							
Methane	UG/L	-	3,600	3,300	6,700	5,600	1,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
Parameter	**Units**	*	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0 U	NA	0 U	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-140	NA	-140	NA
pH	S.U.	-	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			Field-Dup	MW-06	MW-06V15FD	MW-06V15N	MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/31/05	05/31/05	12/20/05	12/20/05	08/15/06
Parameter	**Units**	*	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Field Parameter							
Specific Conductance	MS/CM	-	NA	1.13	NA	1.29	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
Parameter	**Units**	*		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	10 U	100	100	18	21
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	3.0 J	3.0 J	10 U	10 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	8.0 J	8.0 J	0.5 J	0.6 J
Dissolved Gases							
Methane	UG/L	-	1,700	12,000	13,000	3,800	2,500
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
Parameter	**Units**	*		Field Duplicate (1-1)		Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.0 U	7.40	7.00	41.8	44.2
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	6.83	NA	1.05	NA	0.31
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	87	NA	-136	NA	-99.7
pH	S.U.	-	NA	NA	NA	NA	6.38

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			MW-06V15N	20070207MW-06V15FD	20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/15/06	02/07/07	02/07/07	07/31/07	07/31/07
Parameter	**Units**	*		Field Duplicate (1-1)		Field Duplicate (1-1)	
Field Parameter							
Specific Conductance	MS/CM	-	0.033	NA	0.79	NA	1.050
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	8.0 J	8.0 J	4.0 J	34	6.4
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 UJ	10 U	10 U	2.0 J	1 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	10 U	10 U	10 U	35	1 U
Dissolved Gases							
Methane	UG/L	-	12,000	14,000	12,000	9,000	7,300
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)				
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 U	5 U	17.8	57.0 J	2.8 J
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	2.61	0 U	0 U	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	NA	-122.0	-117	-132	-139
pH	S.U.	-	NA	6.24	6.37	6.30	6.57

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080228MW06V15FD	20080228MW06V15N	20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/28/08	02/28/08	08/12/08	02/19/09	10/13/09
Parameter	**Units**	*	Field Duplicate (1-1)				
Field Parameter							
Specific Conductance	MS/CM	-	NA	1.21	1.47	0.84	1.79
Temperature	DEG C	-	NA	12.2	17.0	13.23	17.80
Turbidity	NTU	-	NA	9	5	8	2.2

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	10/06/10	04/06/11
Parameter	**Units**	*			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	35 J	68 J	61	57	96 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 UJ	1 U	1 U	1 U	33
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	3.6	0.57 J	1 U	1 U	38 J
Dissolved Gases							
Methane	UG/L	-	13,000	9,400	8,300	8,800	7,900
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	10/06/10	04/06/11
Parameter	**Units**	*			Field Duplicate (1-1)		
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	31.2	52.3	36.8 J	34.5 J	60.8
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.73	NA	0	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-140	-124	NA	-129	-68
pH	S.U.	-	6.46	8.81	NA	6.97	7.08

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20100226MW-06V13N	20100624MW-06V13N	20101006MW-06V13FD	20101006MW-06V13N	20110406MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/26/10	06/24/10	10/06/10	10/06/10	04/06/11
Parameter	**Units**	*			Field Duplicate (1-1)		
Field Parameter							
Specific Conductance	MS/CM	-	2.48	0.958	NA	0.879	1.61
Temperature	DEG C	-	11.80	17.79	NA	18.25	12.46
Turbidity	NTU	-	39	0.45	NA	0	0.0

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-07	MW-07
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	MW07-6-10-03	MW07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	06/10/03	07/23/03
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	250 U	500 U
Benzene	UG/L	1	NA	NA	NA	250 U	500 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	30	230 J	140	0 U	0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	100 U	68 J
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	250 U	500 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	250 U	500 U
Ethylbenzene	UG/L	5	NA	NA	NA	200 U	400 U
2-Hexanone	UG/L	50	NA	NA	NA	250 U	500 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	250 U	500 U
Tetrachloroethene	UG/L	5	NA	NA	NA	50 U	100 U
Trichloroethene	UG/L	5	NA	NA	NA	50 U	100 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	82 J	3.3	5,400	8,500
Vinyl Chloride	UG/L	2	NA	NA	NA	250 U	500 U
Xylene (total)	UG/L	5	NA	NA	NA	250 U	500 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	4.4	28	3.6	68 J	130 J
Dissolved Gases							
Methane	UG/L	-	1,800	5,300	1,300	740	420
Total Metals							
Iron	UG/L	300	9,630	NA	12,100	21,300	21,200
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	20,800	20,800

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-07	MW-07
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	MW07-6-10-03	MW07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	06/10/03	07/23/03
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	388	NA	304	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	304	NA	NA
Chloride	MG/L	250	NA	NA	NA	140	168
Dehalococcoides ethenogenes	CEQ/mL	-	353,000 J	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	1 J	NA	NA
Hardness (as CaCO3)	MG/L	-	235	NA	308	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	0.39	0.6
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	1.2	1.8
Nitrogen, Nitrate	MG/L	10	0.1 U	NA	0.10 U	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	0.1 UJ
Sulfate	MG/L	250	16.5	119	52.2	32.8	31.0
Total Organic Carbon	MG/L	-	10.9	NA	6.9	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	20.2	19.8
Ferric Iron (lab)	MG/L	-	NA	NA	NA	1	1.4
Fluoride	MG/L	1.5	NA	NA	NA	0.33	0.25
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.0	0.00	0.9	0.1
Ferrous Iron	MG/L	-	7.4	NA	9.9	NA	NA
Ferric Iron (calculated)	MG/L	-	2.23	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-123	-48	-80	-130	-108
pH	S.U.	-	7.08	6.81	6.82	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-07	MW-07
Sample ID			20110913MW06V13N	20120411MW-06V13N	20120924MW-06V13N	MW07-6-10-03	MW07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	04/11/12	09/24/12	06/10/03	07/23/03
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	0.801	1.06	0.636	0.93	1.11
Temperature	DEG C	-	22.4	14.04	22.01	NA	NA
Turbidity	NTU	-	5.3	0.0	0.0	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07-91703	MW-07_121703	MW-07	MW-07	MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	07/22/04	05/31/05	12/20/05
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	250 U	50 U	NA	NA	NA
Benzene	UG/L	1	250 U	14	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	210	140	47
1,1-Dichloroethene	UG/L	5	100 U	20 U	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	250 U	50 U	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	250 U	50 U	NA	NA	NA
Ethylbenzene	UG/L	5	200 U	49	NA	NA	NA
2-Hexanone	UG/L	50	250 U	50 U	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	250 U	50 U	NA	NA	NA
Tetrachloroethene	UG/L	5	50 U	10 U	NA	NA	NA
Trichloroethene	UG/L	5	50 U	10 U	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	6,100	370	110 J	10 U	10 U
Vinyl Chloride	UG/L	2	250 U	50 U	NA	NA	NA
Xylene (total)	UG/L	5	250 U	50 U	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	130 J	940	50	2.0 J	10 U
Dissolved Gases							
Methane	UG/L	-	1,200	1,700	2,500	5,900	9,700
Total Metals							
Iron	UG/L	300	32,700 J	38,900	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	32,500 J	38,900	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07-91703	MW-07_121703	MW-07	MW-07	MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	07/22/04	05/31/05	12/20/05
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	300 J	328	303	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.66	0.99	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	2.1	2.8	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	23.6	5.0 U	5.0 U	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	33.8	19.5	NA	NA	NA
Ferric Iron (lab)	MG/L	-	14.1	19.4	NA	NA	NA
Fluoride	MG/L	1.5	0.24	0.19	0.190	NA	NA
Oil & Grease	MG/L	-	5.44 U	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	3.33	0.88	0 U	0 U
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-118	-115	-153	-152	-169
pH	S.U.	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07-91703	MW-07_121703	MW-07	MW-07	MW-07V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/17/03	12/17/03	07/22/04	05/31/05	12/20/05
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	1.44	1.94	1.69	1.75	1.65
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*					
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	97	89	82	92	170
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	10 U	10 U	6.0 J	10 UJ	3.0 J
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 J	3.0 J	10	0.9 J	16
Dissolved Gases							
Methane	UG/L	-	6,900	6,200	4,100	7,100	5,600
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*					
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	19.3	5.0 U	6.1	5 U	5.6
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	3.47	2.89	0.48	2.64	0 U
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-163	-121	-113.5	-137.0	-167
pH	S.U.	-	NA	NA	6.78	6.32	6.48

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N	20080812MW07V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	07/31/07	02/28/08	08/12/08
Parameter	**Units**	*					
Field Parameter							
Specific Conductance	MS/CM	-	1.44	2.02	2.182	1.62	1.99
Temperature	DEG C	-	NA	NA	NA	9.03	17.3
Turbidity	NTU	-	NA	NA	NA	54	25

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20090218MW-07V09N	20091013MW-07RV15N	20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	06/24/10	06/24/10
Parameter	**Units**	*				Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	150	370 D	150 J	350 J	390
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	46	580 D	18 J	1.1 J	1
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	20	76	8.1	1.7 J	1.8
Dissolved Gases							
Methane	UG/L	-	11,000	5,900	6,500	8,100	8,400
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20090218MW-07V09N	20091013MW-07RV15N	20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	06/24/10	06/24/10
Parameter	**Units**	*				Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5 UJ	6.3	7.9	17	11.2
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0.00	0.00	NA	0.69
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-154	-139	-146	NA	-129
pH	S.U.	-	6.18	6.45	6.52	NA	8.83

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Advanced Selection: WG Sept12 Tab:
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([LOGDATE] BETWEEN #05/01/03# AND #9/24/12#) AND [MATRIX] = 'WG' AND ([SACODE] = 'N' OR [SACODE] = 'FD

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20090218MW-07V09N	20091013MW-07RV15N	20100225MW-07RV15N	20100624MW-07RV15FD	20100624MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	02/25/10	06/24/10	06/24/10
Parameter	**Units**	*				Field Duplicate (1-1)	
Field Parameter							
Specific Conductance	MS/CM	-	2.01	2.74	2.79	NA	2.09
Temperature	DEG C	-	12.11	18.36	10.69	NA	16.45
Turbidity	NTU	-	21	1.1	1.1	NA	0.35

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	09/13/11	04/11/12	04/11/12
Parameter	**Units**	*				Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	350	370 J	26	630 J	540 J
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	53 J	18	1.6	67 J	59 J
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	9.5	6.3 J	0.94 J	11	9.7
Dissolved Gases							
Methane	UG/L	-	6,200	8,300	2,000	6,400	6,600
Total Metals							
Iron	UG/L	300	NA	NA	23,600	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	09/13/11	04/11/12	04/11/12
Parameter	**Units**	*				Field Duplicate (1-1)	
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	406	NA	NA
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	248	NA	NA
Dehalobacter	GC/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	637	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	13 J	25.8	12.2	18.9	17.7
Total Organic Carbon	MG/L	-	NA	NA	11.3	NA	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	4.05	0.00	0.00	NA	0.0
Ferrous Iron	MG/L	-	NA	NA	20.1	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	3.5	NA	NA
Oxidation-Reduction Potential	mV	-	-113	-83	-109	NA	-82
pH	S.U.	-	6.82	6.39	6.86	NA	6.72

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R	MW-07R	MW-07R	MW-07R	MW-07R
Sample ID			20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N	20120411MW-07RV15FD	20120411MW-07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	09/13/11	04/11/12	04/11/12
Parameter	**Units**	*				Field Duplicate (1-1)	
Field Parameter							
Specific Conductance	MS/CM	-	2.03	3.40	3.28	NA	2.10
Temperature	DEG C	-	21.42	12.08	22.4	NA	13.63
Turbidity	NTU	-	14.3	0.0	0.1	NA	8.2

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20120924MW-07RV15N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			09/24/12
Parameter	**Units**	*	
Volatiles			
Acetone	UG/L	50	NA
Benzene	UG/L	1	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	430
1,1-Dichloroethene	UG/L	5	NA
cis-1,2-Dichloroethene	UG/L	5	NA
trans-1,2-Dichloroethene	UG/L	5	NA
Ethylbenzene	UG/L	5	NA
2-Hexanone	UG/L	50	NA
4-Methyl-2-Pentanone	UG/L	-	NA
Tetrachloroethene	UG/L	5	NA
Trichloroethene	UG/L	5	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5.9 J
Vinyl Chloride	UG/L	2	NA
Xylene (total)	UG/L	5	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	2.4 J
Dissolved Gases			
Methane	UG/L	-	3,900
Total Metals			
Iron	UG/L	300	29,900
Dissolved Metals			
Iron	UG/L	300	NA

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20120924MW-07RV15N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			09/24/12
Parameter	**Units**	*	
Miscellaneous Parameters			
Alkalinity, Total (as CaCO3)	MG/L	-	335
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	335
Chloride	MG/L	250	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA
Dehalobacter	GC/mL	-	10
Hardness (as CaCO3)	MG/L	-	414
Nitrogen, Ammonia (As N)	MG/L	2	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA
Nitrogen, Nitrate	MG/L	10	0.10 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA
Sulfate	MG/L	250	32.0
Total Organic Carbon	MG/L	-	11.8
Ferrous Iron (field)	MG/L	-	NA
Ferric Iron (lab)	MG/L	-	NA
Fluoride	MG/L	1.5	NA
Oil & Grease	MG/L	-	NA
Field Parameter			
Dissolved Oxygen	MG/L	-	0.00
Ferrous Iron	MG/L	-	30.4
Ferric Iron (calculated)	MG/L	-	NA
Oxidation-Reduction Potential	mV	-	-118
pH	S.U.	-	6.69

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

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TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20120924MW-07RV15N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			09/24/12
Parameter	**Units**	*	
Field Parameter			
Specific Conductance	MS/CM	-	1.78
Temperature	DEG C	-	22.35
Turbidity	NTU	-	0.0

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Non-Detect UJ - Not detected above the estiamted quantitation limit

D - Diluted analysis

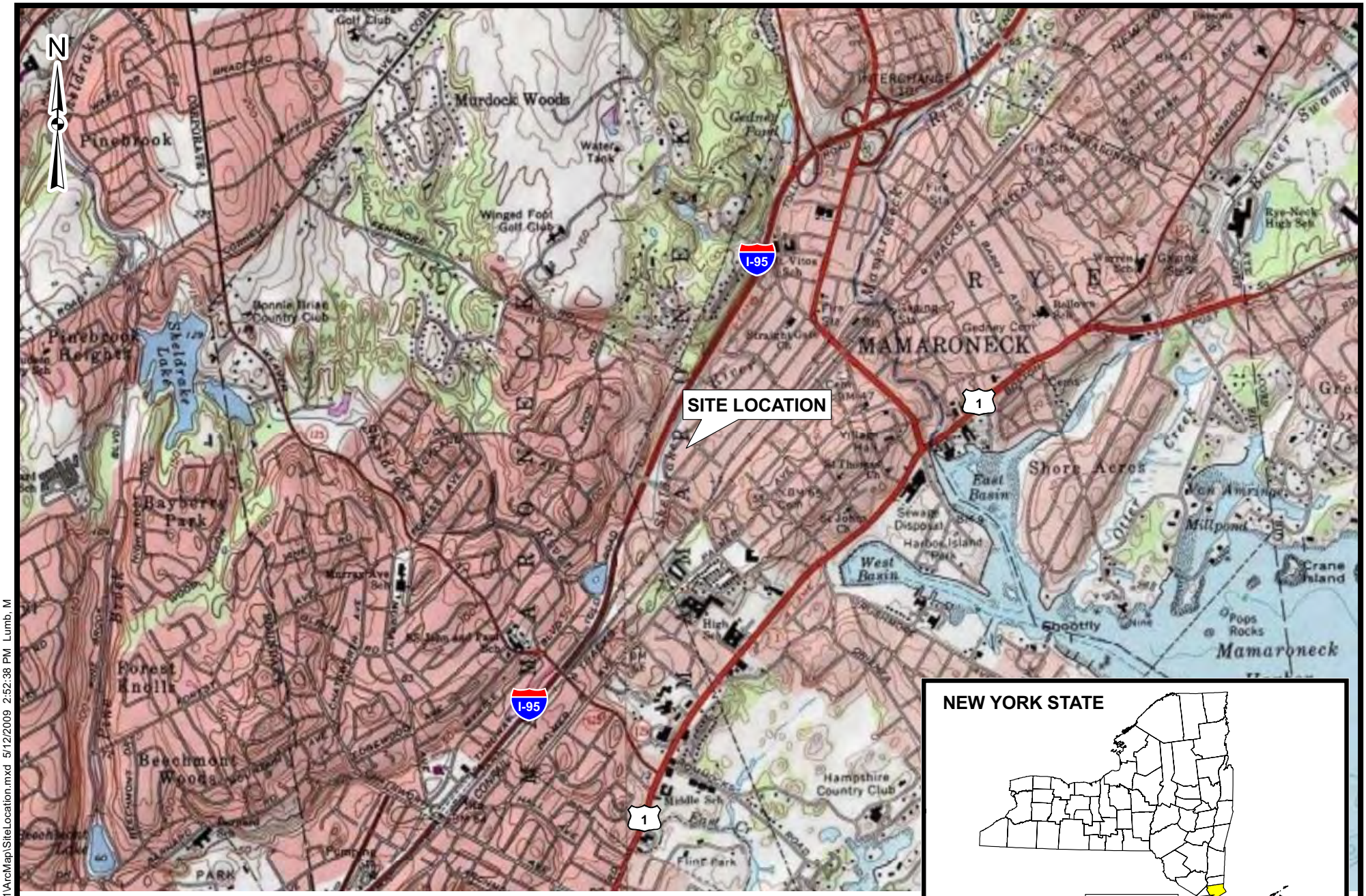
J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

R - Rejected result NA - Not Analyzed

Only Detected Results Reported.

Detection Limits shown are PQL

FIGURES



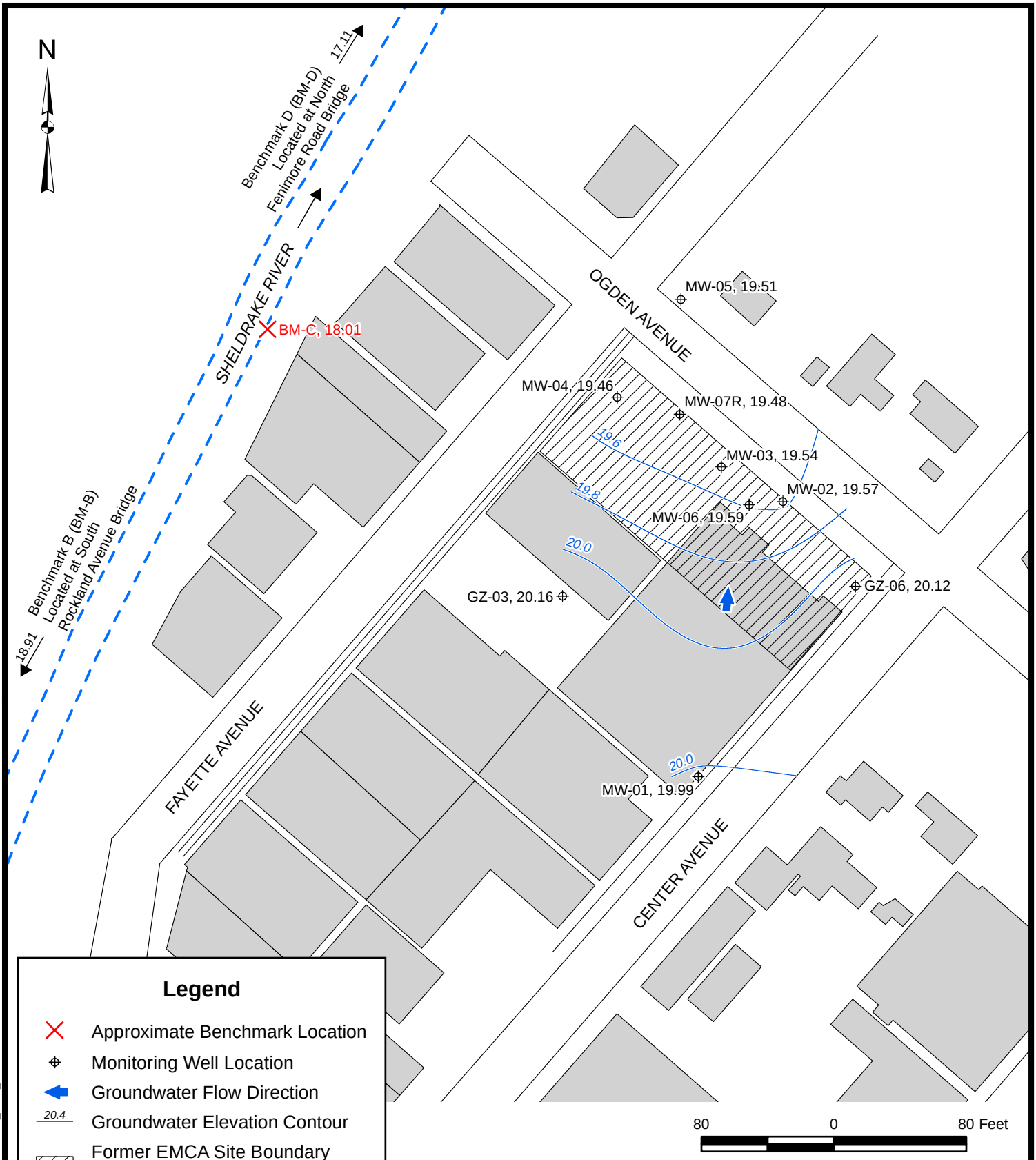
SOURCE: USGS Topographical Quadrangle Mount Vernon, New York, 1979 and Mamaroneck, New York, 1985.

URS

SITE LOCATION MAP

FIGURE 1

N:\11172730.00000\DB\GIS\2001\ArcMap\SiteLocation.mxd 5/12/2009 2:52:38 PM Lumb, M



Legend

- Approximate Benchmark Location
- Monitoring Well Location
- Groundwater Flow Direction
- 20.4 Groundwater Elevation Contour
- Former EMCA Site Boundary (Approximate)

MW-05, 19.51
Location ID
Groundwater Elevation
(based upon URS survey datum)

NOTES:
(1) Well MW-07 was replaced by well MW-07R on September 3, 2009.
(2) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average water surface elevation of Benchmark B and Benchmark D.

URS

GROUNDWATER ELEVATION MAP (SEPTEMBER 24, 2012)

FIGURE 2

N:\11172730.00000\DB\GIS\2001\ArcMap\GW_Elevation_2012_09.mxd 10/16/2012 MDL

N

SHELDRAKE RIVER

FAYETTE AVENUE

OGDEN AVENUE

CENTER AVENUE

MW-04	10/99	7/00	7/01	5/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	11	ND	ND	ND	ND	0.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	1.0 J	ND	0.7 J	0.6 J	ND	1.0 J	ND	1.0J	15	7.7 J	12	2.8	5J	1.2	7.2 J	2.5

MW-05	7/00	7/01	5/03	12/03	7/04
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	7	ND	ND	ND	0.5 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND

MW-03	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	17000	11000	13000	5800	68	26	150	4900 J	2 J	ND	ND	10	2.0 J	0.5 J	ND	5.0J	0.9J	ND	ND	ND	32	5.4	20 J	1.1
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	78 J	43	180	170	3900	14	1.0 J	0.8 J	48	7.0 J	4.0 J	1.0 J	40	2.1	ND	0.5J	ND	99J	9.4	36	3.2
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	7	6.2	ND	68 J	83	2.0 J	51	39	54	13 J	10	38	20	17 J	26	4.6	110J	82	150 J	130

MW-07/07R	6/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	5400	8500	6100	370	110 J	ND	ND	ND	ND	6.0 J	ND	3.0 J	46	580	18 J	1.1J	53J	18	1.6	67 J	5.9J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	68 J	130 J	130 J	940	50	2.0 J	ND	1.0 J	3.0 J	10	0.9 J	16	20	76	8.1	1.8	9.5	6.3J	0.9J	11	2.4J
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	210	140	47	97	89	82	92	170	150	370	150 J	390	350	370J	26	630 J	430

MW-02	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	11/06	2/07	8/07	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12	11/12
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	740	1700	2400	880	1000	54	12	21 J	1200	110	890	100	800	290	830 J	700	1300	1200	76 J	670	580	920	490	1200 J	650	65
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	40	41 J	7.8	3.3 J	4 J	86 J	15	110	10	95	40	72	38 J	34J	51	6.1	37	26	33J	26	57	26	29
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	ND	14	120	18	200	21	84	61	120 J	160	81J	300	92 J	240	180	110J	180	140 J	98	380

GZ-03	8/07
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND
Chlorotrifluoroethene (Freon-1113)	ND

GZ-06	5/88	3/89	10/99	7/00	7/01	5/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	11/06	2/07	8/07	2/08	8/08	2/09
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1274	200	49	900	250	100	230	74	ND	100 J	9 J	ND	74	2.0 J	14	13	ND	ND	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND	ND	ND	ND	ND	20	41	26	0.7 J	36	4.0 J	2.0 J	23	2.0 J	4.0 J	10	ND	ND	ND
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	ND	ND	ND	5.4	ND	24	15	ND	13	2.0 J	1.0 J	2.0 J	ND	ND	ND

MW-06	6/03	7/03	9/03	12/03	7/04	5/05	12/05	8/06	2/07	8/07	2/08	8/08	2/09	10/09	2/10	6/10	10/10	4/11	9/11	4/12	9/12
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	220	180	97	250	140 J	1.0 J	ND	ND	3 J	ND	ND	ND	2.0J	ND	ND	ND	ND	33	ND	82 J	3.3
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	8.8 J	9.5	8.6	14	23	16	ND	ND	8 J	0.6 J	ND	ND	35	ND	3.6	0.57 J	ND	38J	4.4	28	3.6
Chlorotrifluoroethene (Freon-1113)	ND	5.7	ND	ND	5 J	6.0 J	6.0 J	ND	100	21	8.0 J	4.0 J	34	6.4	35 J	68 J	61	96J	30	230 J	140

MW-01	8/07
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	ND
Chlorotrifluoroethene (Freon-1113)	ND

Legend

- Existing Monitoring Well Location
- Generalized Groundwater Flow Direction
- Concentration Exceeds NYSDEC TOGS (1.1.1) Class GA Standards

All Analytical Results are Reported in UG/L

NOTES:

Well, MW-07, was replaced by well, MW-07R, on September 3, 2009.
ND - Not Detected
NS - Not Sampled because injected substrate was present in the well.

- 7/00 - Pre-Pilot Injection Sampling Dates
- 12/03 - Post-Pilot Injection/Pre-IRM Injection Sampling Dates
- 12/05 - Post-IRM Injection Sampling Dates
- 2/08 - Post-2007 Supplemental Injection Sampling Dates
- 10/09 - Post-2009 Supplemental Injection Sampling Dates

100 0 100 Feet

FORMER EMCA SITE
SUMMARY OF FREON DETECTIONS IN GROUNDWATER

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FIGURE 3

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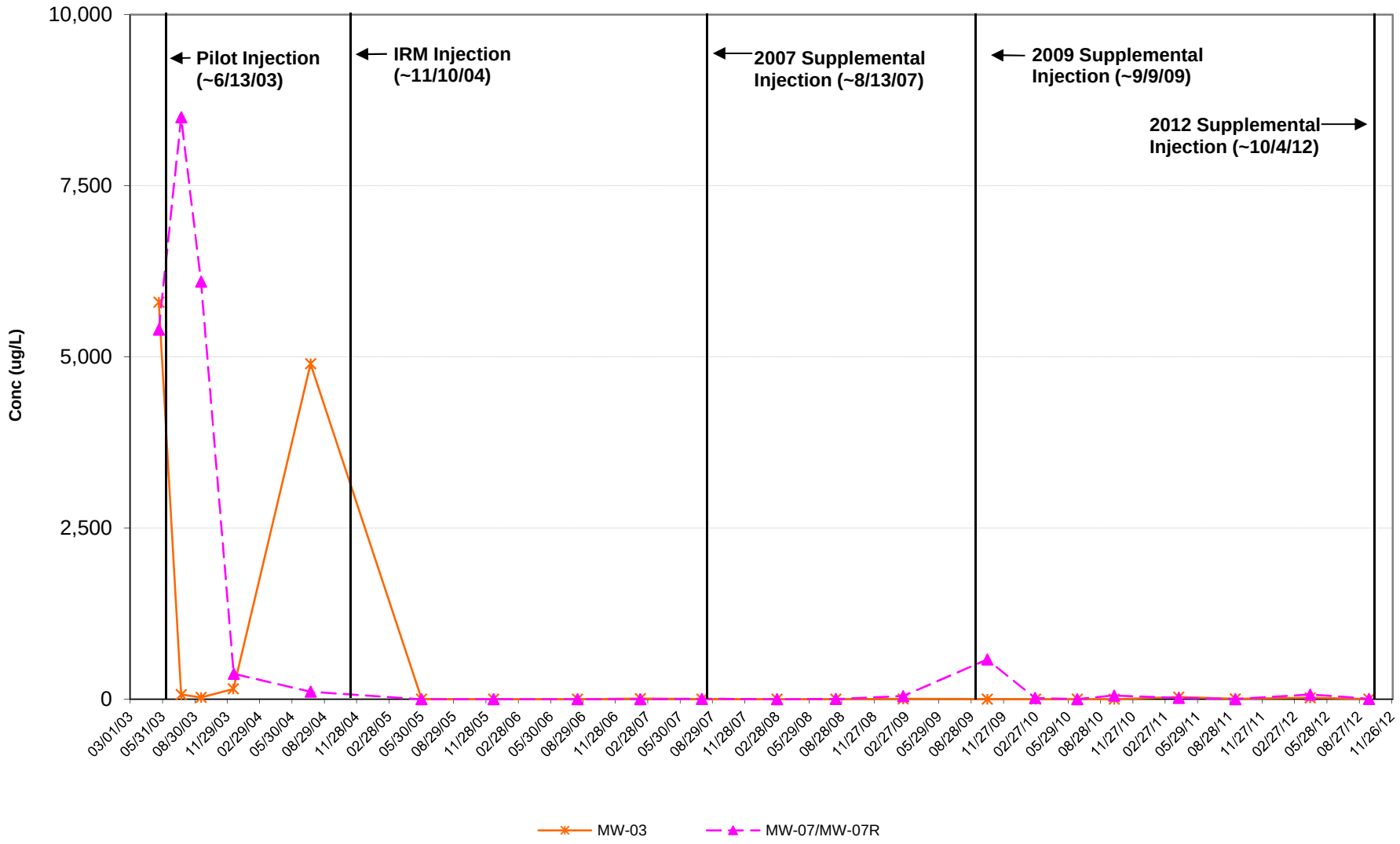
FIGURE 4
FORMER EMCA SITE
Freon 113 Concentrations, MW-03 and MW-07/07R



N:\11172730.00000\WORD\DRAFT\GW SAR Reports\Sept 2012 GW SAR\Figures\GW Data Plots_Time Scaled Long_Sept 2012 - Figure 4

FIGURE 5
FORMER EMCA SITE
Freon 113 Concentrations, GZ-06, MW-02, and MW-06

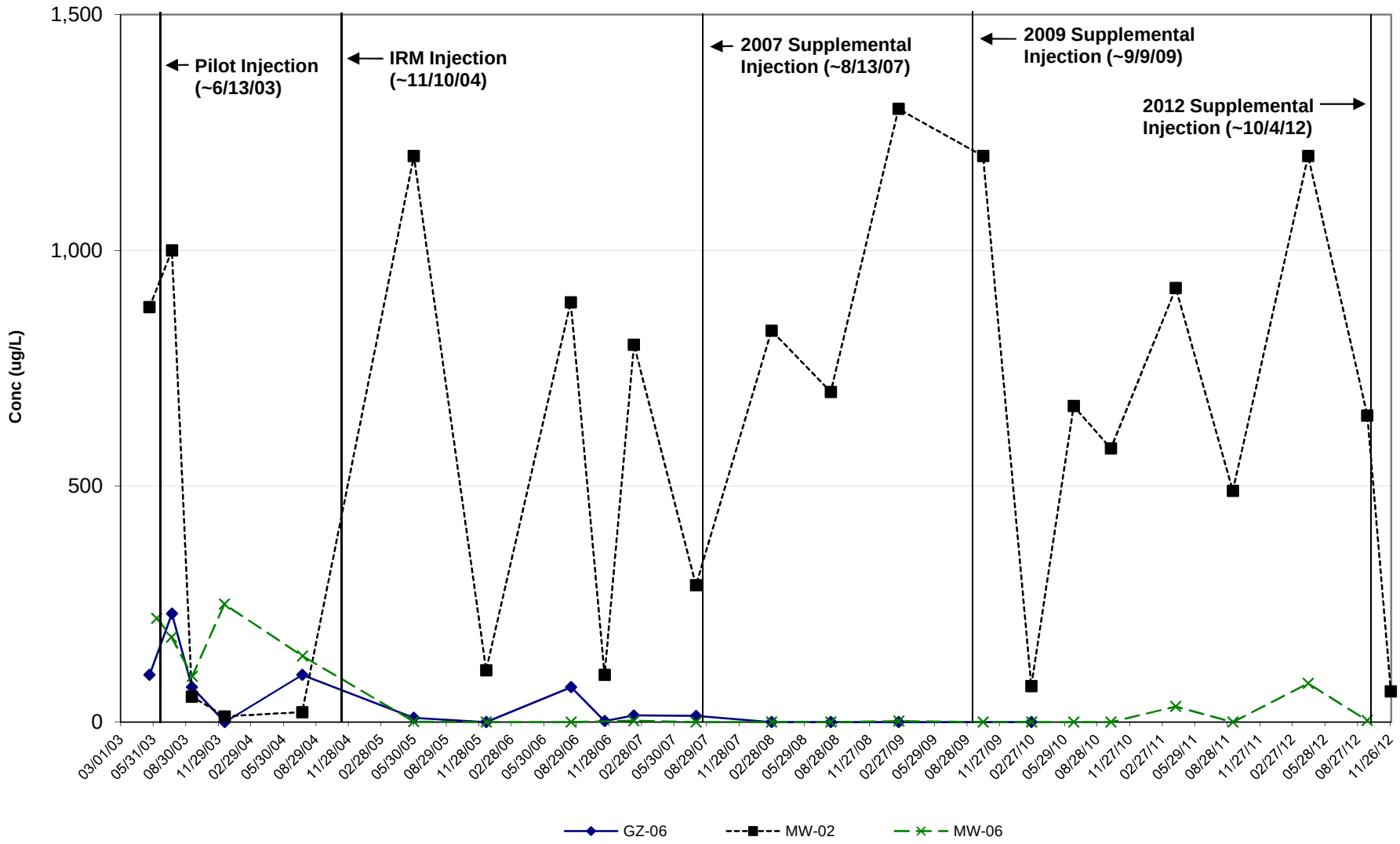


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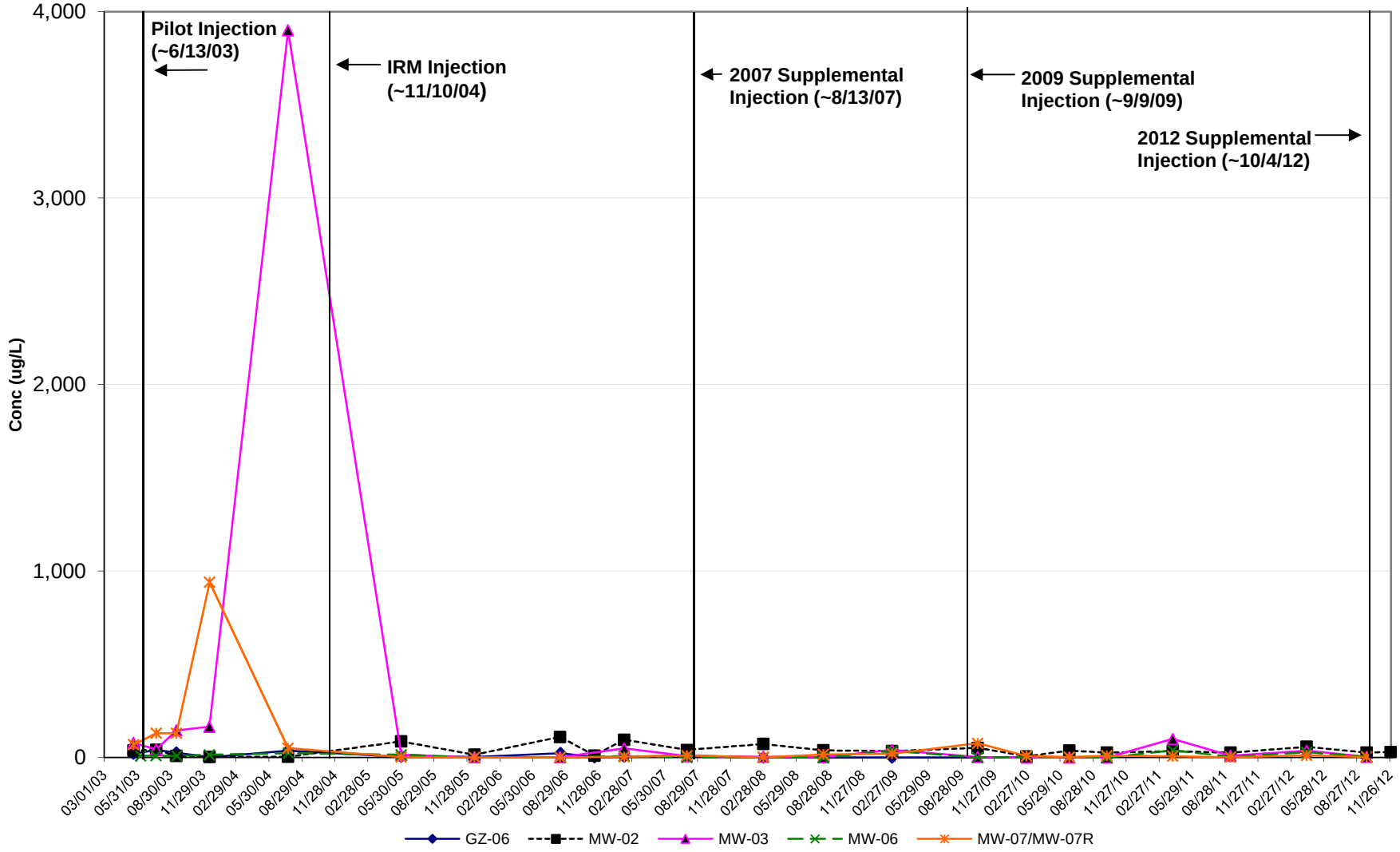
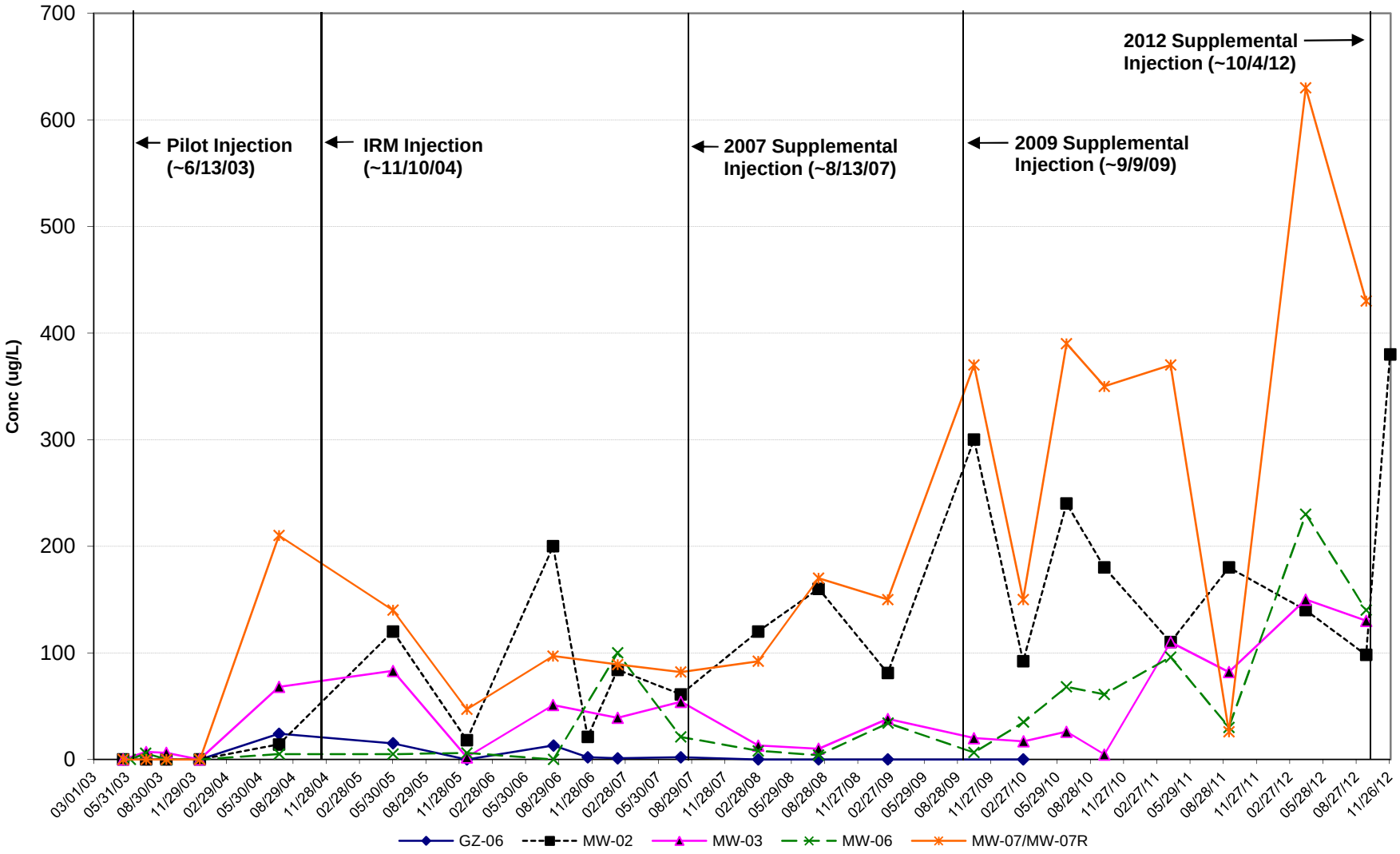
FIGURE 6
FORMER EMCA SITE
Freon 123a Concentrations



N:\11172730.00000\WORD\DRAFT\GW SAR Reports\Sept 2012 GW SAR\Figures\GW Data Plots_Time Scaled Long_Sept 2012 - Figure 6

FIGURE 7
FORMER EMCA SITE
Freon 1113 Concentrations



N:\11172730.00000\WORD\DRAFT\GW SAR Reports\Sept 2012 GW SAR\Figures\GW Data Plots_Time Scaled Long_Sept 2012 - Figure 7

FIGURE 8
FORMER EMCA SITE
Sulfate Concentrations

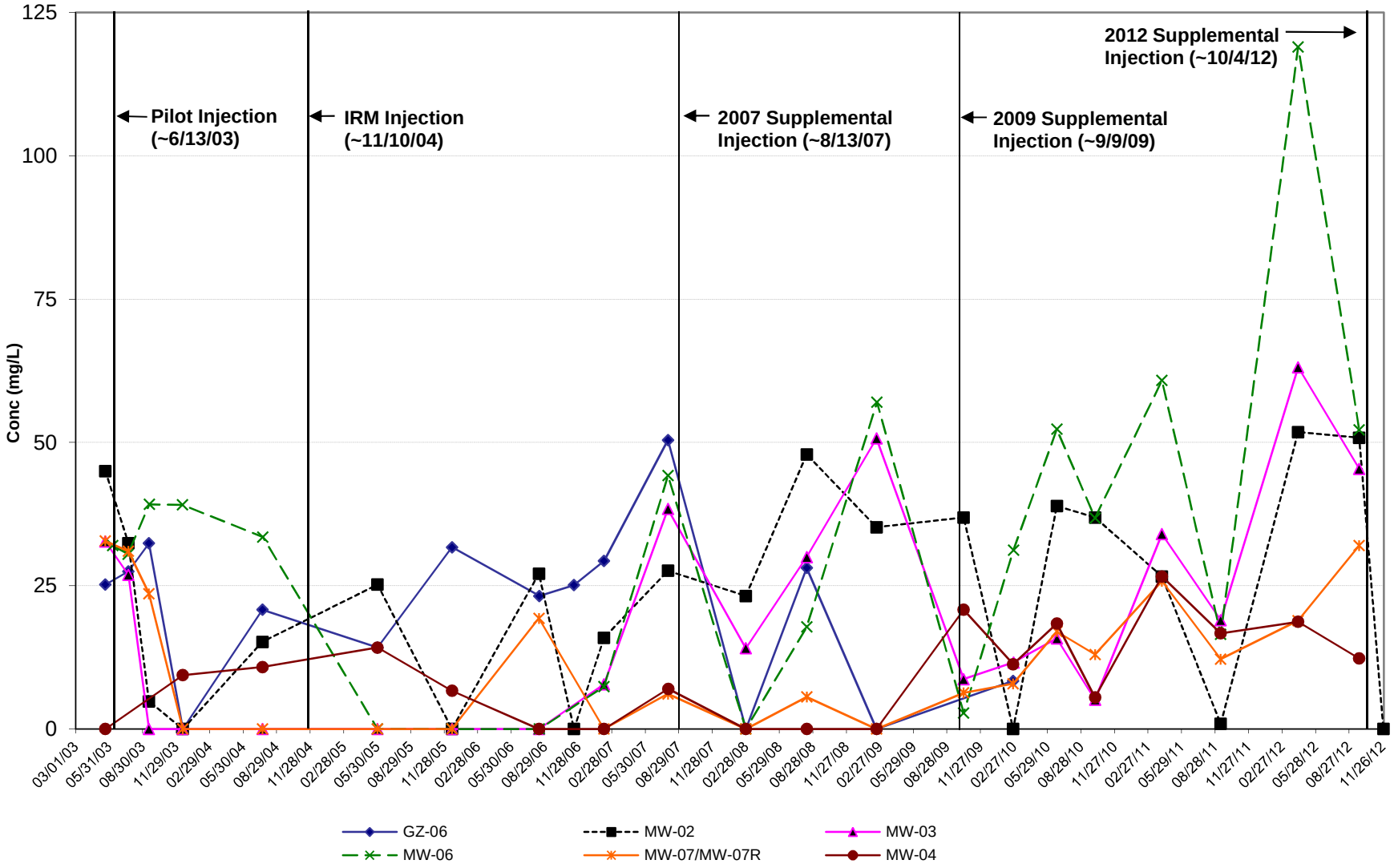


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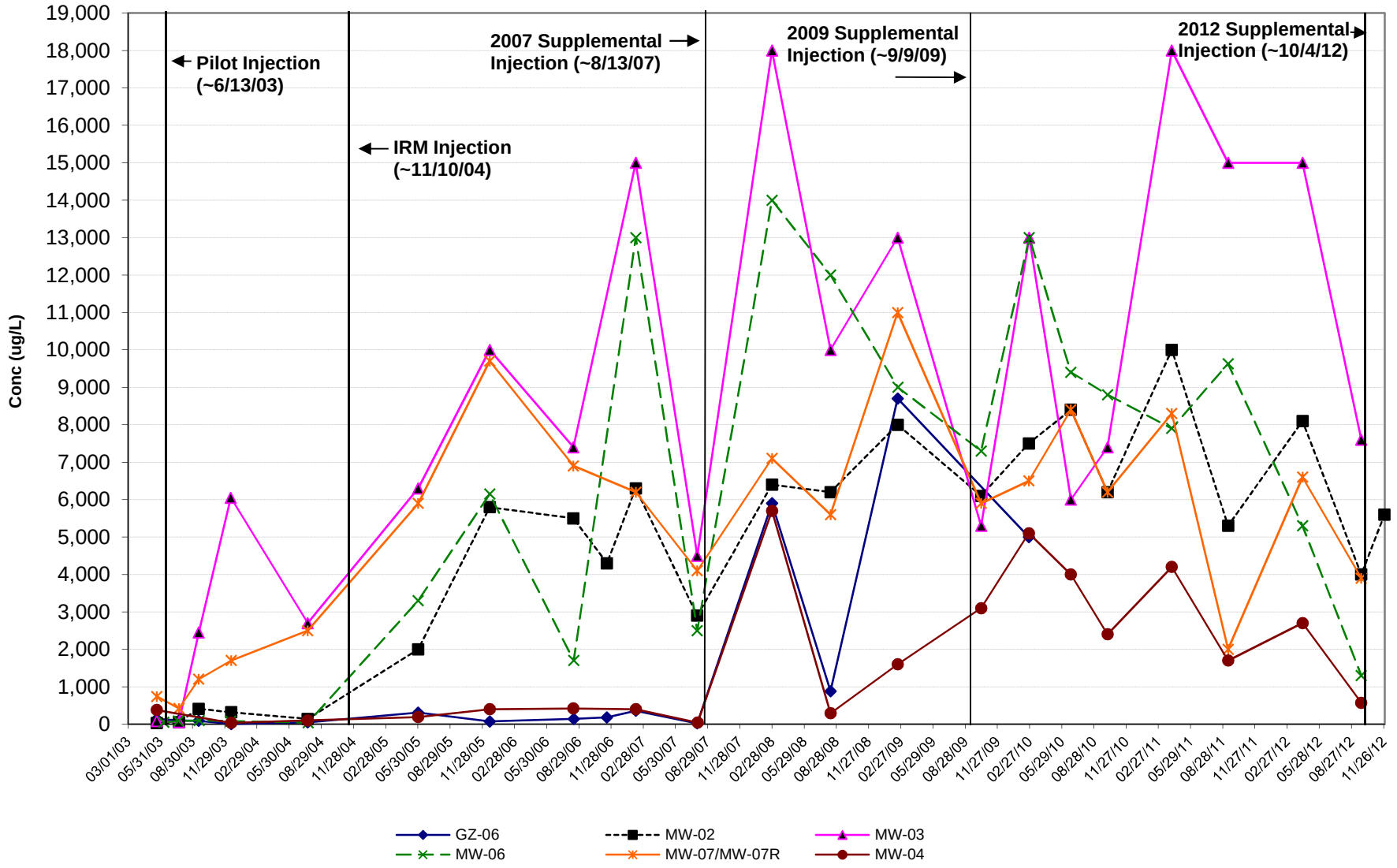
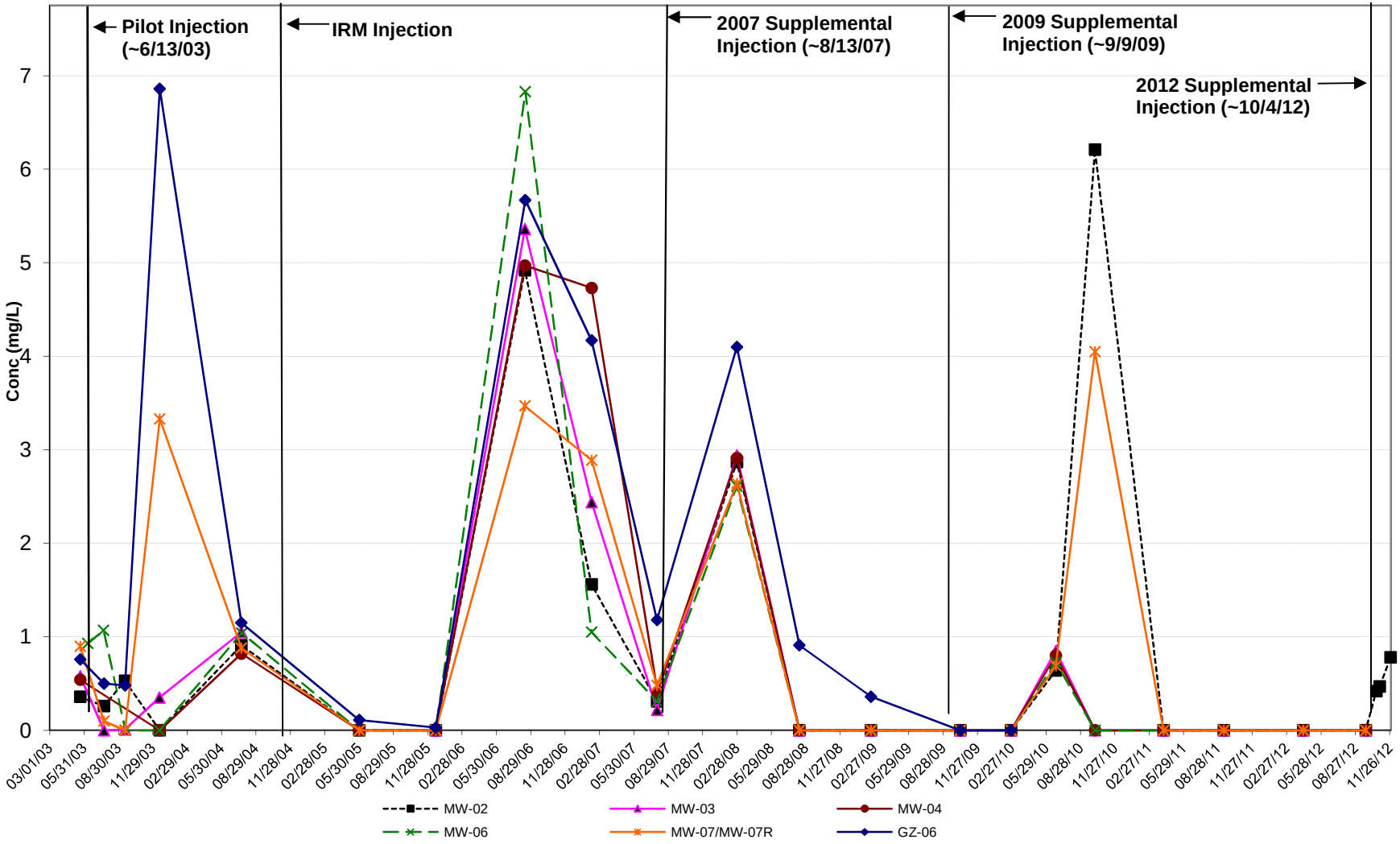
FIGURE 9
FORMER EMCA SITE
Methane Concentrations



N:\11172730.00000\WORD\DRAFT\GW SAR Reports\Sept 2012 GW SAR\Figures\GW Data Plots_Time Scaled Long_Sept 2012 - Figure 9

FIGURE 10
FORMER EMCA SITE
Dissolved Oxygen Concentrations



N:\11172730.00000\WORD\DRAFT\GW SAR Reports\Sept 2012 GW SAR\Figures\GW Data Plots_Time Scaled Long_Sept 2012 - Figure 10

FIGURE 11
FORMER EMCA SITE
Oxidation-Reduction Potential

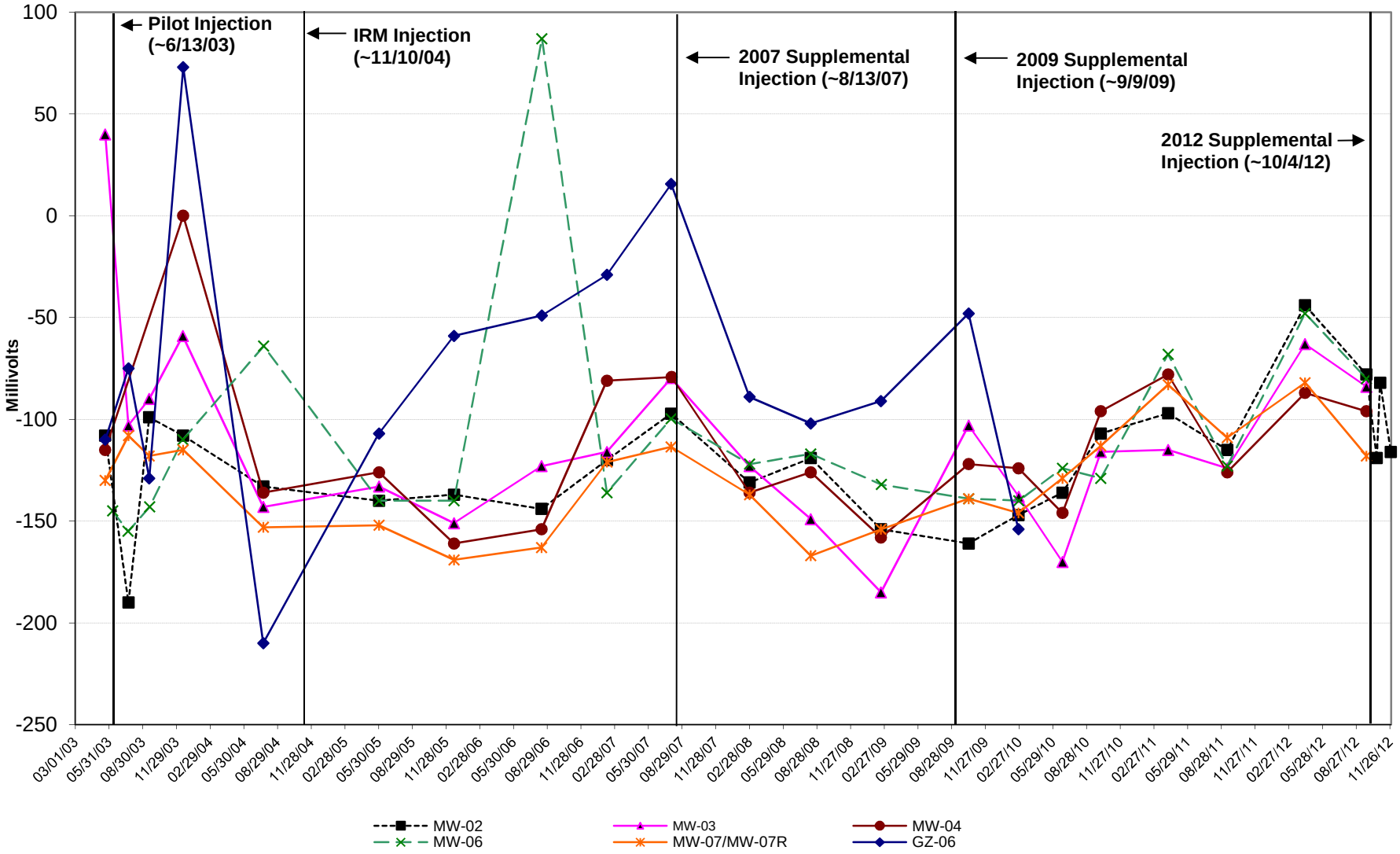


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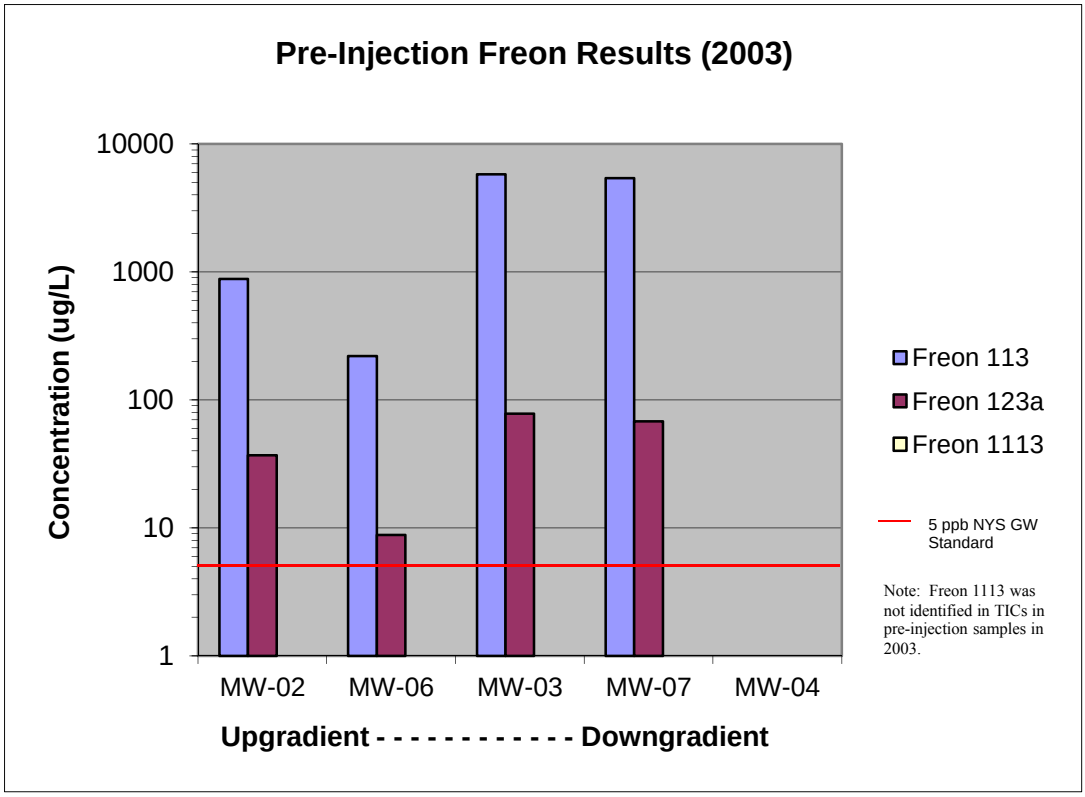
FIGURE 12
FORMER EMCA SITE - FREON CONCENTRATIONS
PRE-INJECTION AND CURRENT RESULTS



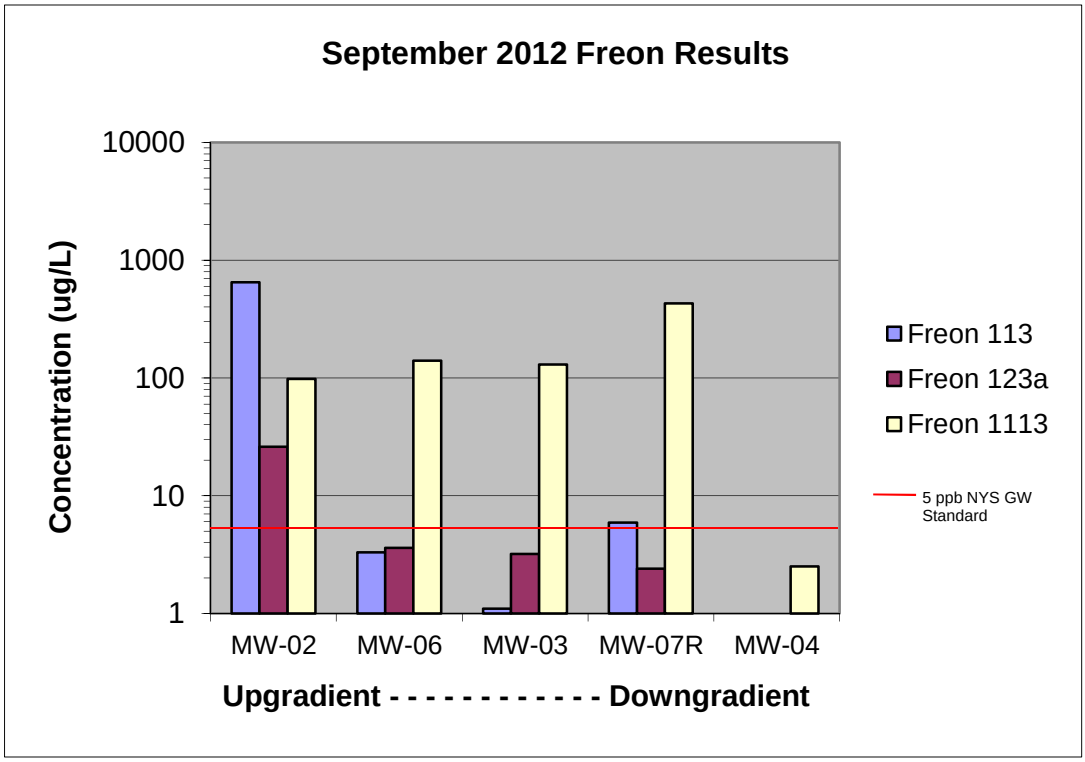
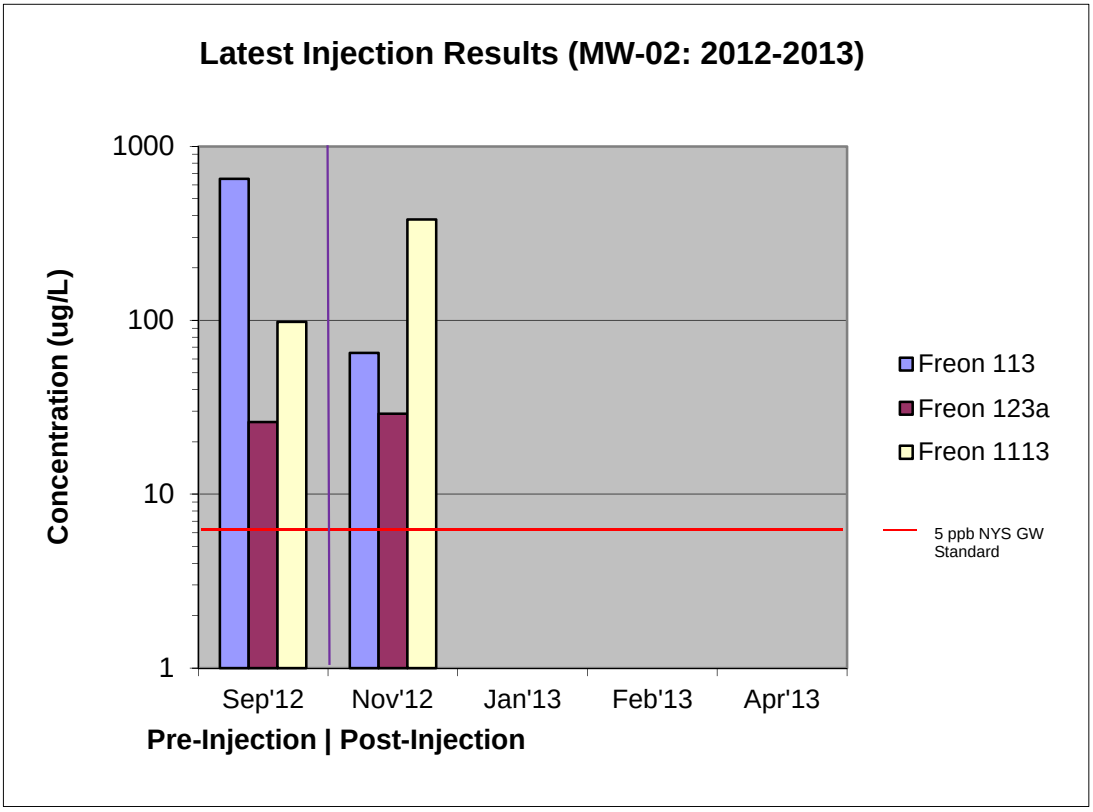
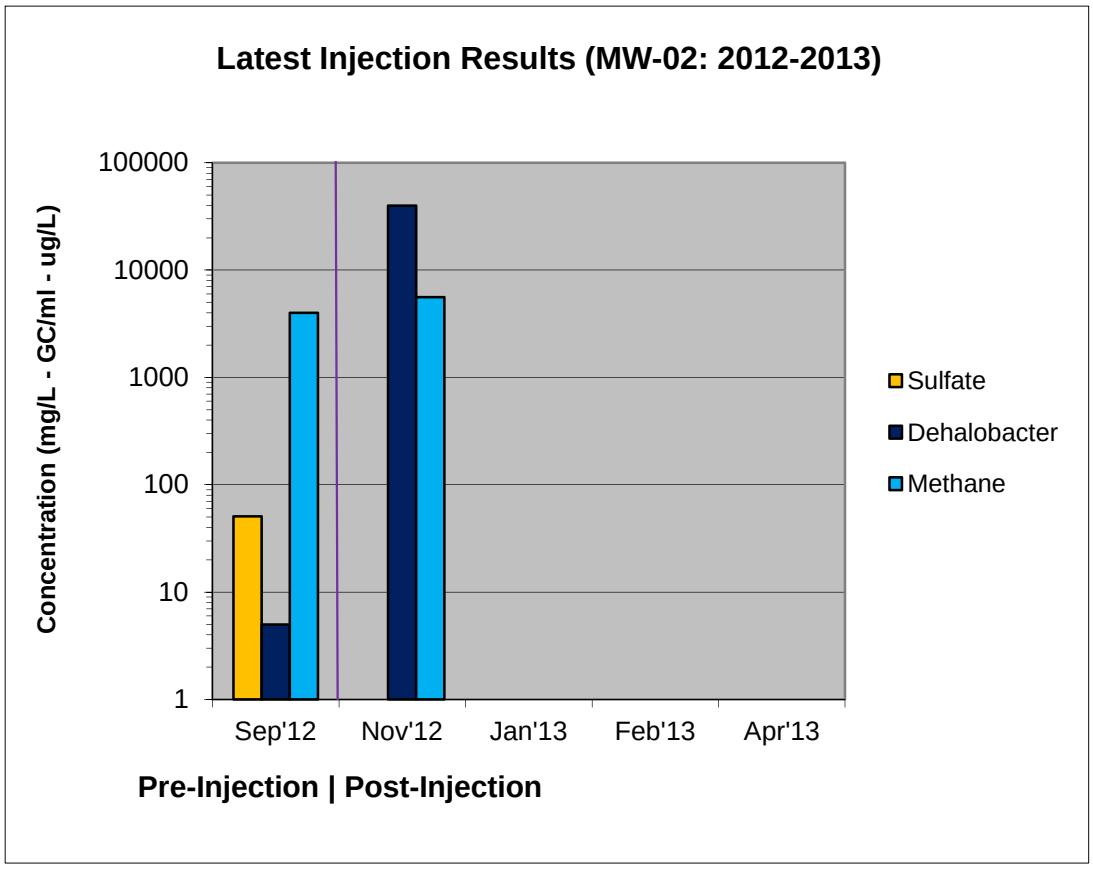
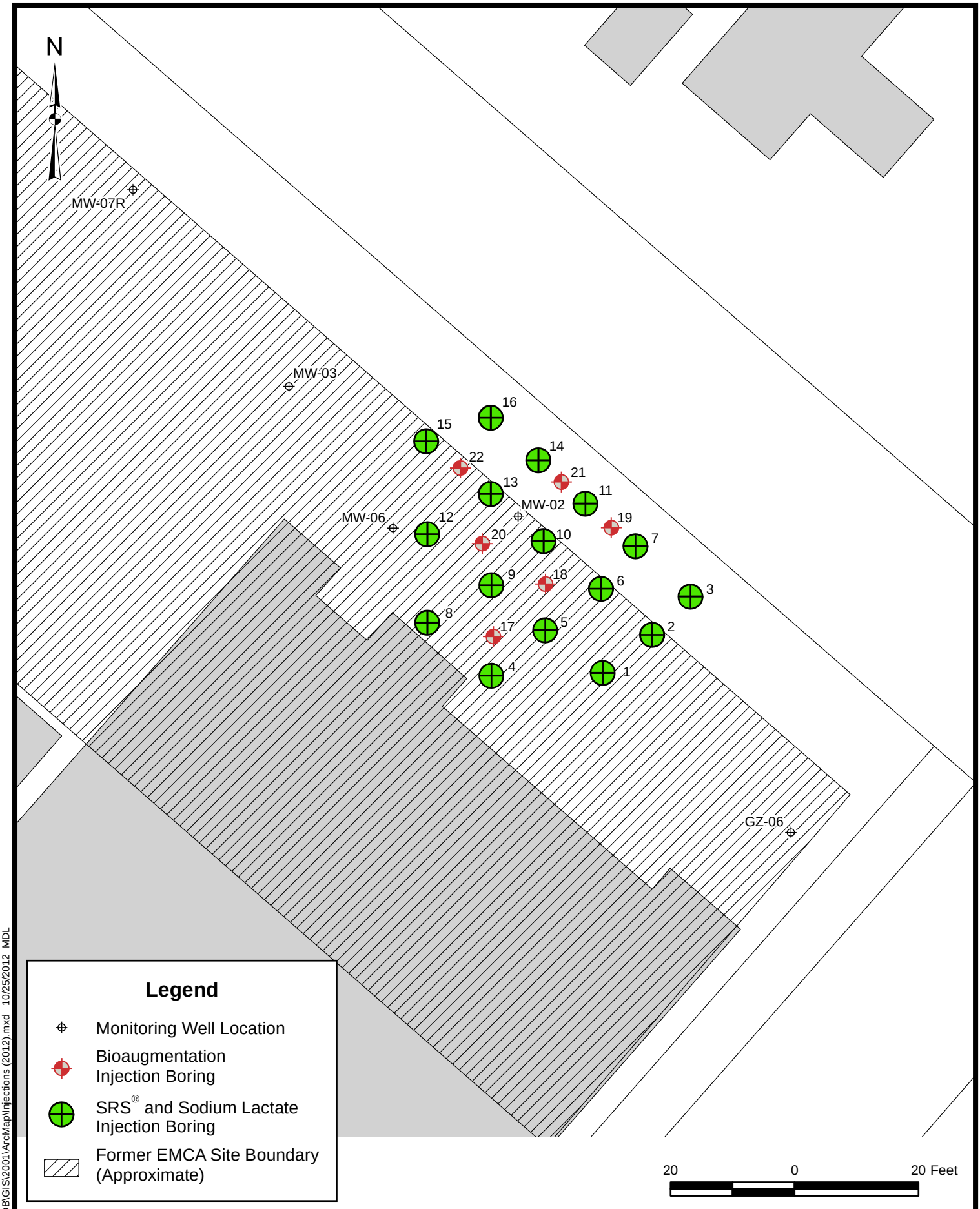


FIGURE 13
RESULTS TRACKING LATEST INJECTION
MW-02 2012-2013







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FORMER EMCA SITE
2012 INJECTION LOCATIONS

FIGURE 14

N:\11172730.00000\DB\GIS\2001\ArcMap\Injections (2012).mxd 10/25/2012 MDL

APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site | Site: Former EMCA Site | Well I.D.: MW-02

Date: 9/24/2012 | Sampling Personnel: Tim Ifkovich | Company: URS Corporation

Purging/ Sampling Device:	Low Flow Peristaltic Pump (GeoPump 2)			Tubing Type:	HDPE and Silicone		Pump/Tubing Inlet Location:	Midpoint of Saturated Screen	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.06'	Depth to Well Bottom:	11.80'	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	0.9		Estimated Purge Volume (liters):	11.2	

Sample ID: 20120924MW-02V10N | Sample Time: 1401 | QA/QC: --

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Nitrate; Iron; Hardness; Total Organic Carbon (TOC); Alkalinity; Dehalococcoides

Notes: Slight sheen, clear
Ferrous Iron = 0.90 mg/L (Dilution - 90 ml distilled water:10 ml groundwater)

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1326	6.78	26.35	2.27	0.00	4.8	-70	320	6.06
1331	6.69	24.91	1.94	0.00	0.0	-77	320	6.06
1336	6.65	24.60	1.83	0.00	0.0	-78	320	6.06
1341	6.63	24.50	1.79	0.00	0.0	-78	320	6.06
1346	6.62	24.38	1.75	0.00	0.0	-78	320	6.06
1351	6.61	24.23	1.72	0.00	0.0	-78	320	6.06
1356	6.61	24.12	1.70	0.00	0.0	-78	320	6.06
1401	6.62	24.07	1.69	0.00	0.0	-78	320	6.06
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-02

Date: 10/22/2012 Name: John Crespo Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Disposable Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 5.97 Depth to Well Bottom: 11.95 Well Diameter: 1" Screen Length: 5'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: MW-02 Sample Time: NA QA/QC: NA

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10;31	6.32	18.93	3.14	0.85	67.5	-101	500	6.07
10:36	6.36	19.02	2.92	0.75	60.9	-109	350	6.07
10:41	6.37	19.01	2.95	0.67	24.3	-112	300	6.04
10:46	6.37	18.93	2.66	0.61	8.0	-113	300	6.04
10:51	6.37	19..03	2.61	0.58	3.3	-114	300	6.04
10:56	6.37	19.02	2.60	0.59	0.3	-114	300	6.04
11:01	6.36	19.05	2.60	0.53	0.0	-115	300	6.04
11:06	6.36	19.07	2.56	0.52	0.0	-115	300	6.04
11:11	6.37	19.14	2.57	0.48	0.1	-116	300	6.04
11:16	6.37	19.16	2.55	0.46	0.0	-117	300	6.04
11:21	6.37	19.21	2.53	0.45	0.0	-118	300	6.04
11:26	6.38	19.22	2.53	0.43	0.0	-119	300	6.04
11:31	6.38	19.21	2.53	0.42	0.0	-119	300	6.03
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-02

Date: 10/31/2012 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: HDPE and Silicone Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser Initial Depth to Water: 5.93' Depth to Well Bottom: 11.80' Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 0.9 Estimated Purge Volume (liters): 16.87

Sample ID: -- Sample Time: -- QA/QC: --

Sample Parameters: --

Notes: Slight sheen, clear

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1415	5.78	18.25	3.21	1.10	21.3	-58	365	5.93
1420	6.24	19.31	2.52	0.37	18.1	-71	300	5.93
1425	6.29	19.45	2.75	0.27	18.7	-74	300	5.93
1430	6.32	19.40	2.63	0.88	14.9	-76	300	5.93
1435	6.33	19.40	2.58	0.88	11.1	-79	300	5.93
1440	6.35	19.39	2.55	0.87	10.0	-80	300	5.93
1445	6.35	19.47	2.54	0.86	9.0	-79	300	5.93
1450	6.36	19.46	2.53	0.72	9.5	-80	300	5.93
1455	6.37	19.45	2.51	0.62	8.6	-81	300	5.93
1500	6.36	19.53	2.51	0.47	8.5	-81	300	5.93
1505	6.35	19.52	2.50	0.58	7.9	-81	300	5.93
1510	6.35	19.43	2.50	0.52	7.9	-82	300	5.93
1515	6.35	19.42	2.52	0.47	9.3	-82	300	5.93
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-02

Date: 11/29/2012 Sampling Personnel: Megan Dascoli Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (Geopump) Tubing Type: Poly tubing Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 6.19 Depth to Well Bottom: 11.80 Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): Estimated Purge Volume (liters):

Sample ID: 20121129MW-02V10N Sample Time: 10:00 QA/QC: TB11292012

Sample Parameters: Freon 113, 123a, 1113; Methane; Sulfate; Dehalococcoides, Dehalobacter

Horiba U-52 calibrated daily and used for parameters recorded below.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:17	6.17	14.43	3.24	3.30	123.0	-63	175	6.19
9:22	6.41	14.42	3.13	1.64	49.7	-110	225	6.19
9:27	6.43	14.54	2.77	1.14	21.0	-116	225	6.19
9:32	6.43	14.45	2.64	1.05	13.7	-117	225	6.19
9:37	6.42	14.49	6.54	0.93	0.7	-116	225	6.19
9:42	6.41	14.49	2.46	0.85	0.0	-116	225	6.19
9:47	6.40	14.63	2.42	0.81	0.0	-116	225	6.19
9:52	6.40	14.75	2.39	0.78	0.0	-116	225	6.19
10:00	Sample taken							
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site | Site: Former EMCA Site | Well I.D.: MW-03

Date: 9/24/2012 | Sampling Personnel: Tim Ifkovich | Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) | Tubing Type: HDPE and Silicone | Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser | Initial Depth to Water: 6.05' | Depth to Well Bottom: 14.23' | Well Diameter: 1" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (liters): 1.3 | Estimated Purge Volume (liters): 10.6

Sample ID: 20120924MW-03V09N, 20120924MW-03V09MS, 20120924MW-03V09SD | Sample Time: 1229 | QA/QC: MS/MSD

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Nitrate; Iron; Hardness; Total Organic Carbon (TOC); Alkalinity; Dehalococcoides

Notes: Slight sheen, clear
Ferrous Iron = 0.35 mg/L (Dilution - 90 ml distilled water:10 ml groundwater)

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1154	6.97	27.00	0.679	0.00	0.0	-33	350	6.05
1159	6.62	24.66	0.690	0.00	0.0	-57	295	6.05
1204	6.61	23.94	0.698	0.00	0.0	-66	295	6.05
1209	6.62	23.72	0.698	0.00	0.0	-72	295	6.05
1214	6.63	23.68	0.696	0.00	0.0	-77	295	6.05
1219	6.63	23.60	0.697	0.00	0.0	-79	295	6.05
1224	6.64	23.59	0.696	0.00	0.0	-82	295	6.05
1229	6.64	23.57	0.697	0.00	0.0	-84	295	6.05
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site | Site: Former EMCA Site | Well I.D.: MW-04

Date: 9/24/2012 | Sampling Personnel: Tim Ifkovich | Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) | Tubing Type: HDPE and Silicone | Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser | Initial Depth to Water: 5.85' | Depth to Well Bottom: 11.59' | Well Diameter: 1" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (liters): 0.9 | Estimated Purge Volume (liters): 12.0

Sample ID: 20120924MW-04V08N / 20120924MW-04V08FD | Sample Time: 1107 | QA/QC: Field Duplicate

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Nitrate; Iron; Hardness; Total Organic Carbon (TOC); Alkalinity; Dehalococcoides

Notes: Clear
Ferrous Iron = 2.77 mg/L (Dilution - 90 ml distilled water:10 ml groundwater)

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1027	7.12	23.70	0.529	0.00	135	-54	365	5.85
1032	6.93	24.49	0.502	0.00	18.1	-77	290	5.85
1037	6.93	24.53	0.503	0.00	15.7	-81	290	5.85
1042	6.92	24.69	0.505	0.00	13.5	-87	290	5.85
1047	6.91	24.89	0.506	0.00	12.3	-89	290	5.85
1052	6.91	25.02	0.504	0.00	14.4	-91	290	5.85
1057	6.91	25.13	0.511	0.00	14.1	-93	290	5.85
1102	6.91	25.28	0.517	0.00	8.3	-95	290	5.85
1107	6.91	25.40	0.519	0.00	8.0	-96	290	5.85
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site | Site: Former EMCA Site | Well I.D.: MW-06

Date: 9/24/2012 | Sampling Personnel: Tim Ifkovich | Company: URS Corporation

Purging/ Sampling Device:	Low Flow Peristaltic Pump (GeoPump 2)			Tubing Type:	HDPE and Silicone		Pump/Tubing Inlet Location:	Midpoint of Saturated Screen	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.18'	Depth to Well Bottom:	18.62'	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	1.9		Estimated Purge Volume (liters):	9.1	

Sample ID: 20120924MW-06V13N | Sample Time: 1506 | QA/QC: --

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Nitrate; Iron; Hardness; Total Organic Carbon (TOC); Alkalinity; Dehalococcoides

Notes: Clear

Ferrous Iron = 0.99 mg/L (Dilution - 90 ml distilled water:10 ml groundwater)

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1431	7.21	23.47	0.613	0.00	46.8	-50	260	6.18
1436	6.98	22.46	0.624	0.00	0.0	-65	260	6.18
1441	6.80	22.34	0.626	0.00	0.0	-68	260	6.18
1446	6.80	22.22	0.629	0.00	0.0	-72	260	6.18
1451	6.80	22.13	0.632	0.00	0.0	-75	260	6.18
1456	6.81	22.09	0.633	0.00	0.0	-77	260	6.18
1501	6.81	22.03	0.635	0.00	0.0	-79	260	6.18
1506	6.82	22.01	0.636	0.00	0.0	-80	260	6.18
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Dow Chemical - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-07R

Date: 9/24/2012 Sampling Personnel: Tim Ifkovich Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: HDPE and Silicone Pump/Tubing Inlet Location: Midpoint of Saturated Screen

Measuring Point: Below Top of Riser Initial Depth to Water: 6.15' Depth to Well Bottom: 19.92' Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 2.1 Estimated Purge Volume (liters): 12.8

Sample ID: 20120924MW-07RV15N Sample Time: 0948 QA/QC: --

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Nitrate; Iron; Hardness; Total Organic Carbon (TOC); Alkalinity; Dehalococcoides

Notes: Slight sheen, clear
Ferrous Iron = 3.04 mg/L (Dilution - 90 ml distilled water:10 ml groundwater)

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
0913	5.83	19.41	1.82	0.00	0.0	-10	365	6.15
0918	6.59	21.43	1.78	3.92	3.3	-110	365	6.15
0923	6.64	21.77	1.79	2.08	0.0	-116	365	6.15
0928	6.66	21.85	1.79	0.88	0.0	-117	365	6.15
0933	6.67	21.92	1.79	0.00	0.0	-118	365	6.15
0938	6.67	22.15	1.78	0.00	0.0	-118	365	6.15
0943	6.68	22.26	1.78	0.00	0.0	-118	365	6.15
0948	6.69	22.35	1.78	0.00	0.0	-118	365	6.15
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

APPENDIX B

DATA USABILITY SUMMARY REPORT

APPENDIX B

DATA USABILITY SUMMARY REPORT

SEPTEMBER/NOVEMBER 2012 SAMPLING EVENT

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

Analyses Performed by:

TESTAMERICA LABORATORIES, INC.
777 New Durham Road
Edison, New Jersey 08817

Prepared for:

The Dow Chemical Company
(Formerly ROHM & HAAS Company)
3100 State Road
Croydon, PA 19021

Prepared by:

URS CORPORATION
77 Goodell Street
Buffalo, New York 14203

DECEMBER 2012

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TABLES
(Following Text)

ATTACHMENTS
(Following Tables)

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10, Technical Guidance for Site Investigation and Remediation, Appendix 2B - Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DUSR discusses the analytical data for five (5) groundwater samples, one field duplicate, one matrix spike/matrix spike duplicate (MS/MSD) pair, and one trip blank collected by URS personnel on September 24, 2012, and one groundwater sample plus trip blank collected on November 29, 2012, as summarized on Table B-1. The September samples were collected at the Former EMCA Site located in Mamaroneck, New York, as part of the semi-annual groundwater monitoring event; and to determine baseline data prior to in-situ bioaugmentation which occurred in October 2012. The groundwater sampled in November was collected as part of the post in-situ bioaugmentation monitoring program.

II. ANALYTICAL METHODOLOGIES

The groundwater samples were analyzed by TestAmerica Laboratories, Inc., located in Edison, New Jersey and SiREM Laboratory located in Guelph, Ontario, Canada for the following parameters. Note, not all groundwater samples were analyzed for all parameters.

Parameter	Method No.	References
Volatile Organic Compounds (VOCs)*	SW8260B	1
Methane	RSK-175/SW3810	2
Sulfate	ASTM D516-90	3
Alkalinity (total, bicarbonate, carbonate, hydroxide)	SM 2320 B	4
Hardness (calculated)	SM 2340 B	4
Total Iron	200.7	5
Ferrous Iron (Fe^{+2})	Field colorimeter	6
Nitrate (calculated)	SM 4500-NO3 F	4
Total Organic Carbon (TOC)	SM 5310 B	4
Bacteria (*Dehalococcoides ethenogenes and Dehalobacter*)	QPCR**	SiREM Standard Operating Procedures

Notes:
* - VOCs include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113), 1,2-dichloro-1,1,2-trifluoroethane (Freon-123A), and chlorotrifluoroethene (Freon-1113).
** - Quantitative Polymerase Chain Reaction.

References:

1 NYSDEC Analytical Services Protocol, July 2005.
2 USEPA, R.S. Kerr Environmental Research Laboratory, March 15, 1989.
3 ASTM International, most recent version.
4 Standard Methods of Examination of Water and Wastewater, 20th Edition, 1998.
5 40 CFR Part 136, most recent version.
6 Hach Colorimeter using 1,10-Phenanthroline.

III. DATA VALIDATION

A limited data validation was performed following the guidelines in USEPA Region II *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B, SOP No. HW-24, Rev. #2*, August 2008 and the intent of USEPA Region II *Validating Metals for the Contract Laboratory Program, based on SOW – ILM05.3*, SOP No. HW-2, Revision 13, September 2006. The validated groundwater and field quality control (QC) analytical results are presented in Tables B-2 and B-3, respectively. Copies of the validated laboratory results (i.e., Form 1's) are presented in Attachment A. Copies of the case narrative, chain-of-custody, and documentation supporting the qualification of data are presented in Attachment B. Only problems affecting data usability are discussed in this report.

IV. DATA DELIVERABLE COMPLETENESS

The laboratory deliverable data packages were in accordance with NYSDEC Analytical Services Protocol (ASP) Category B requirements.

V. PRESERVATION / SAMPLE RECEIPT / HOLDING TIMES

All samples were received by the laboratory intact, properly preserved, and under proper chain-of-custody (COC). All sample analyses were performed within method holding times.

VI. NONCONFORMANCES

Instrument Calibration

The VOC continuing calibration (CCAL) percent differences for 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113) and 1,2-dichloro-1,2,2-trifluoroethane (Freon-123a) were greater than 20%. The detected results for these compounds for groundwater sample 20120924MW-07RV15N were qualified 'J'.

Documentation supporting data qualification (i.e., Forms 5 and 7) are presented in Attachment B.

Blank Contamination

The methane method blank and/or trip blank exhibited contamination. Since the methane concentrations for the associated samples were several orders of magnitude greater than the method and trip blank concentrations, no qualification of the data was necessary.

Matrix Spike/Matrix Spike Duplicate Recoveries

The VOC, methane, and total iron MS/MSD percent recoveries (%Rs) for sample 20120924MW-03V09N were outside QC limits. Since the parent sample concentrations were significantly greater than the spike levels, the MS/MSD %Rs are not used to qualify the data. Note, the associated laboratory control samples (LCS) were within QC limits.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'J' (estimated) during the data validation are considered conditionally usable.

TABLE B-1
SAMPLE AND ANALYSIS SUMMARY - SEPTEMBER/NOVEMBER 2012
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG Nos.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity	Hardness	Total Iron	Nitrate	TOC	Dhc	Dhb	Comments
460-45018-1/ S-2619	20120924MW-07RV15N	GW	09/24/12	X	X	X	X	X	X	X	X	—	X	—
	20120924MW-04V08N	GW		X	X	X	X	X	X	X	X	—	X	—
	20120924MW-04V08FD	GW		X	X	X	X	X	X	X	X	—	—	Field Duplicate of MW-04
	20120924MW-03V09N	GW		X	X	X	X	X	X	X	X	—	X	MS/MSD
	20120924MW-02V10N	GW		X	X	X	X	X	X	X	X	X	X	—
	20120924MW-06V13N	GW		X	X	X	X	X	X	X	X	—	X	—
	20120924TB1	Water		X	X	—	—	—	—	—	—	—	—	Trip Blank
460-47728-1/ S-2674	20121129MW-02V10N	GW	11/29/12	X	X	X	—	—	—	—	—	X	X	—
	TB11292012	Water		X	X	—	—	—	—	—	—	—	—	Trip Blank

Notes:

* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113); 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a); and chlorotrifluoroethene (Freon-1113).

X - Parameter requested.
— - Parameter not requested/analyzed or no comment.
Dhc - Dehalococcoides ethenogenes
Dhb - Dehalobacter
GW - Groundwater
MS/MSD - Matrix Spike/Matrix Spike Duplicate
TOC - Total Organic Carbon

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-04
Sample ID			20120924MW-02V10N	20121129MW-02V10N	20120924MW-03V09N	20120924MW-04V08FD	20120924MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	11/29/12	09/24/12	09/24/12	09/24/12
Parameter	Units	Criteria*				Field Duplicate (1-1)	
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	98	380	130	2.1	2.5
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	650	65	1.1	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	26	29	3.2	1.0 U	1.0 U
Dissolved Gases							
Methane	UG/L	-	4,000	5,600	7,600	570	550
Total Metals							
Iron	UG/L	300	32,900	NA	21,800	7,430	7,280
Miscellaneous Parameters							
Alkalinity, Total (As CaCO3)	MG/L	-	245	NA	292	211	210
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	245	NA	292	211	210
Alkalinity, Carbonate (As CaCO3)	MG/L	-	5.0 U	NA	5.0 U	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	NA	5.0 U	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	100	2,000	NA	NA	NA
Dehalobacter	GC/mL	-	5	40,000	700	NA	4 U
Hardness (as CaCO3)	MG/L	-	388	NA	248	188	185
Nitrogen, Nitrate	MG/L	10	0.10 U	NA	0.10 U	0.10 U	0.10 U
Sulfate	MG/L	250	50.8	2.2 U	45.4	12.3	12.0
Total Organic Carbon	MG/L	-	8.4	NA	7.2	10.2	10
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	0.78	0.00	NA	0.00
Ferrous Iron	MG/L	-	9.0	NA	3.5	NA	27.7
Oxidation-Reduction Potential	mV	-	-78	-116	-84	NA	-96

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect J - Estimated Result

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; mV - Millivolts

S.U. - Standard Units; MS/CM - microsemens per centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

MADE BY: _PRF_12/28/12_ CHKD BY: _AMK_12/28/12_

Detection Limits shown are PQL

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-02	MW-03	MW-04	MW-04
Sample ID			20120924MW-02V10N	20121129MW-02V10N	20120924MW-03V09N	20120924MW-04V03FD	20120924MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/24/12	11/29/12	09/24/12	09/24/12	09/24/12
Parameter	Units	Criteria*				Field Duplicate (1-1)	
Field Parameter							
pH	S.U.	-	6.62	6.40	6.64	NA	6.91
Specific Conductance	MS/CM	-	1.69	2.39	0.697	NA	0.519
Temperature	DEG C	-	24.07	14.75	23.57	NA	25.40
Turbidity	NTU	-	0.0	0.0	0.0	NA	8.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect J - Estimated Result

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; mV - Millivolts

S.U. - Standard Units; MS/CM - microsemens per centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

MADE BY: _PRF_12/28/12_ CHKD BY _AMK_12/28/12_

Detection Limits shown are PQL

N:\11172\30.0000\DB\PROGRAM\EDM5.mdb
Printed: 12/28/2012 8:35:35 AM
((LOGDATE) = #09/01/2012# OR ((LOGDATE) = #11/29/2012#) AND ([MATRIX] = "WT

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07R
Sample ID			20120924MW-06V13N	20120924MW-07RV13N
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			09/24/12	09/24/12
Parameter	**Units**	**Criteria***		
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	5	140	430
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	3.3	5.9 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	3.6	2.4 J
Dissolved Gases				
Methane	UG/L	-	1,300	3,900
Total Metals				
Iron	UG/L	300	12,100	29,900
Miscellaneous Parameters				
Alkalinity, Total (As CaCO3)	MG/L	-	304	335
Alkalinity, Bicarbonate (As CaCO3)	MG/L	-	304	335
Alkalinity, Carbonate (As CaCO3)	MG/L	-	5.0 U	5.0 U
Alkalinity, Hydroxide	MG/L	-	5.0 U	5.0 U
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA
Dehalobacter	GC/mL	-	1 J	10
Hardness (as CaCO3)	MG/L	-	308	414
Nitrogen, Nitrate	MG/L	10	0.10 U	0.10 U
Sulfate	MG/L	250	52.2	32.0
Total Organic Carbon	MG/L	-	6.9	11.8
Field Parameter				
Dissolved Oxygen	MG/L	-	0.00	0.00
Ferrous Iron	MG/L	-	9.9	30.4
Oxidation-Reduction Potential	mV	-	-80	-118

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect J - Estimated Result

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; mV - Millivolts

S.U. - Standard Units; MS/CM - microsemens per centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

MADE BY: _PRF_12/28/12_ CHKD BY _AMK_12/28/12_

Detection Limits shown are PQL

N:\11117730.0000\03\PROGRAM\EDMS.mdb
Printed: 12/28/2012 9:35:26 AM
([LOGDATE] = #9/24/2012# OR [LOGDATE] = #11/29/2012#) AND ([MATRIX] = 'W'

TABLE B-2
GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-07R
Sample ID			20120924MW-06V13N	20120924MW-07RV15N
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			09/24/12	09/24/12
Parameter	**Units**	**Criteria***		
Field Parameter				
pH	S.U.	-	6.82	6.69
Specific Conductance	MS/CM	-	0.636	1.78
Temperature	DEG C	-	22.01	22.35
Turbidity	NTU	-	0.0	0.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Non-Detect J - Estimated Result

UG/L - Micrograms per Liter; MG/L - Milligrams per Liter; CEQ/mL - Count Equivalents per milliliter; mV - Millivolts

S.U. - Standard Units; MS/CM - microsemens per centimeter; DEG C - Degrees Celsius; NTU - Nephelometric Turbidity Units

MADE BY: _PRF_12/28/12_ CHKD BY _AMK_12/28/12_

Detection Limits shown are PQL

N:\11172730.0000\0019\IOG\RAM\EDMS.mdb
Printed: 12/28/2012 9:35:37 AM
([LOGDATE] = #9/24/2012# OR [LOGDATE] = #11/29/2012#) AND ([MATRIX] = 'WG

TABLE B-3
FIELD QC ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			FIELDQC	FIELDQC
Sample ID			20120924TB1	TB11292012
Matrix			Water	Water
Depth Interval (ft)			-	-
Date Sampled			09/24/12	11/29/12
Parameter	Units	Criteria*	Trip Blank (1-1)	Trip Blank (1-1)
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	5	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.0 U	1.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.0 U	1.0 U
Dissolved Gases				
Methane	UG/L	-	2.2 JB	2.3 JB

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Class GA, Revised April 2000.

Flags assigned during chemistry validation are shown.

( ) Concentration Exceeds Criteria

U - Non-Detect J - Estimated Result

B - Analyte detected in the associated method blank.

MADE BY: _PRF_12/28/12_ CHKD BY: _AMK_12/28/12_

Detection Limits shown are PQL

ATTACHMENT A

VALIDATED ANALYTICAL RESULTS (FORM 1's)

DEFINITIONS OF USEPA REGION II DATA QUALIFIERS

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

D – The sample results are reported from a separate secondary dilution analysis.

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-07RV15N**

Lab Sample ID: 460-45018-1
Client Matrix: Water

Date Sampled: 09/24/2012 0848
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4058.d
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2309			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	3900		17	27

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-04V08N**

Lab Sample ID: 460-45018-2
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4047.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2119			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	550		1.7	2.7

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-04V08FD**

Lab Sample ID: 460-45018-3
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4048.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2128			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	570		1.7	2.7

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-03V09N**

Lab Sample ID: 460-45018-4
Client Matrix: Water

Date Sampled: 09/24/2012 1229
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4060.d
Dilution:	20			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2327			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	7600		34	54

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-02V10N**

Lab Sample ID: 460-45018-5
Client Matrix: Water

Date Sampled: 09/24/2012 1401
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4059.d
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2318			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	4000		17	27

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-06V13N**

Lab Sample ID: 460-45018-6
Client Matrix: Water

Date Sampled: 09/24/2012 1506
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129432	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4057.d
Dilution:	5.0			Initial Weight/Volume:	10 mL
Analysis Date:	09/25/2012 2300			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1300		8.5	13

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924TB1**

Lab Sample ID: 460-45018-7
Client Matrix: Water

Date Sampled: 09/24/2012 0000
Date Received: 09/25/2012 0930

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-129643	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4069.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	09/26/2012 1947			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	2.2	J B	1.7	2.7

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-07RV15N**

Lab Sample ID: 460-45018-1
Client Matrix: Water

Date Sampled: 09/24/2012 0848
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130691	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47275.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 1416			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 1416				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	5.9 J		0.16	2.0
Chlorotrifluoroethene	430		0.36	2.0
1,2-Dichloro-1,1,2-trifluoroethane	2.4 J		1.7	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		70 - 130
Toluene-d8 (Surr)	103		70 - 130
Bromofluorobenzene	102		70 - 130

11/6/12

Client Sample ID: **20120924MW-04V08N**

Lab Sample ID: 460-45018-2
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47248.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0349			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0349				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	2.5		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Toluene-d8 (Surr)	96		70 - 130
Bromofluorobenzene	101		70 - 130

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-04V08FD**

Lab Sample ID: 460-45018-3
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47249.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0411			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0411				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	2.1		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Toluene-d8 (Surr)	97		70 - 130
Bromofluorobenzene	101		70 - 130

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-03V09N**

Lab Sample ID: 460-45018-4
Client Matrix: Water

Date Sampled: 09/24/2012 1229
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47250.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0433			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0433				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	1.1		0.080	1.0
Chlorotrifluoroethene	130		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	3.2		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Toluene-d8 (Surr)	93		70 - 130
Bromofluorobenzene	101		70 - 130

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-02V10N**

Lab Sample ID: 460-45018-5
Client Matrix: Water

Date Sampled: 09/24/2012 1401
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47253.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0539			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0539				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	650		0.16	2.0
Chlorotrifluoroethene	98		0.36	2.0
1,2-Dichloro-1,1,2-trifluoroethane	26		1.7	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		70 - 130
Toluene-d8 (Surr)	94		70 - 130
Bromofluorobenzene	100		70 - 130

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-06V13N**

Lab Sample ID: 460-45018-6
Client Matrix: Water

Date Sampled: 09/24/2012 1506
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47251.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0455			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0455				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	3.3		0.080	1.0
Chlorotrifluoroethene	140		0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	3.6		0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Toluene-d8 (Surr)	93		70 - 130
Bromofluorobenzene	100		70 - 130

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924TB1**

Lab Sample ID: 460-45018-7
Client Matrix: Water

Date Sampled: 09/24/2012 0000
Date Received: 09/25/2012 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-130677	Instrument ID:	VOAMS2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	b47247.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/05/2012 0326			Final Weight/Volume:	5 mL
Prep Date:	10/05/2012 0326				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	0.18	U	0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Toluene-d8 (Surr)	97		70 - 130
Bromofluorobenzene	103		70 - 130

Client Sample ID: **20120924MW-07RV15N**

Lab Sample ID: 460-45018-1
Client Matrix: Water

Date Sampled: 09/24/2012 0848
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-129846	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129793	Lab File ID:	09292012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/29/2012 1707			Final Weight/Volume:	100 mL
Prep Date:	09/28/2012 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	29900		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1351			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	414		33.1	33.1

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-04V08N**

Lab Sample ID: 460-45018-2
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-129846	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129793	Lab File ID:	09292012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/29/2012 1710			Final Weight/Volume:	100 mL
Prep Date:	09/28/2012 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	7280		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1351			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	185		33.1	33.1

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-04V08FD**

Lab Sample ID: 460-45018-3
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-129846	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129793	Lab File ID:	09292012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/29/2012 1714			Final Weight/Volume:	100 mL
Prep Date:	09/28/2012 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	7430		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1351			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	188		33.1	33.1

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-03V09N**

Lab Sample ID: 460-45018-4
Client Matrix: Water

Date Sampled: 09/24/2012 1229
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-129846	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129793	Lab File ID:	09292012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/29/2012 1544			Final Weight/Volume:	100 mL
Prep Date:	09/28/2012 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	21800		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1351			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	248		33.1	33.1

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-02V10N**

Lab Sample ID: 460-45018-5
Client Matrix: Water

Date Sampled: 09/24/2012 1401
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-129846	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129793	Lab File ID:	09292012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/29/2012 1718			Final Weight/Volume:	100 mL
Prep Date:	09/28/2012 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	32900		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1351			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	388		33.1	33.1

Client: URS Corporation

Job Number: 460-45018-1

Client Sample ID: **20120924MW-06V13N**

Lab Sample ID: 460-45018-6
Client Matrix: Water

Date Sampled: 09/24/2012 1506
Date Received: 09/25/2012 0930

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-130334	Instrument ID:	ICP5
Prep Method:	200.7	Prep Batch:	460-129858	Lab File ID:	10032012.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	10/03/2012 1941			Final Weight/Volume:	100 mL
Prep Date:	09/29/2012 1434				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	12100		80.9	150

SM 2340B Hardness, Calculation

Analysis Method:	SM 2340B	Analysis Batch:	460-131229	Instrument ID:	NOEQUIP
	N/A		N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Analysis Date:	10/09/2012 1355			Final Weight/Volume:	1.0 mL
Prep Date:	N/A				

Analyte	Result (mg/L)	Qualifier	RL	RL
Hardness as calcium carbonate	308		33.1	33.1

General Chemistry

Client Sample ID: **20120924MW-07RV15N**

Lab Sample ID: 460-45018-1 Date Sampled: 09/24/2012 0848
Client Matrix: Water Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	32.0		mg/L	1.1	5.0	1.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1318						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	11.8		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1524						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	335		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1300						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1300						
Alkalinity	335		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1300						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1300						

General Chemistry

Client Sample ID: **20120924MW-04V08N**

Lab Sample ID: 460-45018-2
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	12.0		mg/L	1.1	5.0	1.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1318						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	10		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1544						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	210		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1307						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1307						
Alkalinity	210		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1307						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1307						

General Chemistry

Client Sample ID: **20120924MW-04V08FD**

Lab Sample ID: 460-45018-3
Client Matrix: Water

Date Sampled: 09/24/2012 1107
Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	12.3		mg/L	1.1	5.0	1.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1318						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	10.2		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1608						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	211		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1313						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1313						
Alkalinity	211		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1313						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1313						

General Chemistry

Client Sample ID: **20120924MW-03V09N**

Lab Sample ID: 460-45018-4
Client Matrix: Water

Date Sampled: 09/24/2012 1229
Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	45.4		mg/L	2.2	10.0	2.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1341						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	7.2		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1425						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	292		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1245						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1245						
Alkalinity	292		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1245						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1245						

General Chemistry

Client Sample ID: **20120924MW-02V10N**

Lab Sample ID: 460-45018-5
Client Matrix: Water

Date Sampled: 09/24/2012 1401
Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	50.8		mg/L	2.2	10.0	2.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1343						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	8.4		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1633						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	245		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1321						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1321						
Alkalinity	245		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1321						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1321						

General Chemistry

Client Sample ID: **20120924MW-06V13N**

Lab Sample ID: 460-45018-6
Client Matrix: Water

Date Sampled: 09/24/2012 1506
Date Received: 09/25/2012 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	52.2		mg/L	2.2	10.0	2.0	D516-90, 02
Analysis Batch: 460-129857	Analysis Date: 09/29/2012 1343						
Nitrate as N	0.047	U	mg/L	0.047	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-131072	Analysis Date: 10/08/2012 1259						
Total Organic Carbon	6.9		mg/L	0.11	1.0	1.0	SM 5310B
Analysis Batch: 460-129522	Analysis Date: 09/26/2012 1655						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Bicarbonate Alkalinity as CaCO3	304		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1328						
Carbonate Alkalinity as CaCO3	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1328						
Alkalinity	304		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1328						
Hydroxide Alkalinity	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-129485	Analysis Date: 09/26/2012 1328						

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Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Peter Fairbanks, URS
Project: Former EMCA Site
Customer Reference: 41569290-00002

SiREM Reference: S-2619
Report Date: 24-Oct-12
Data Files: iQ5-GBA-QPCR-0035
MyiQ-DHC-QPCR-0939
MyiQ-DB-DHC-QPCR-0316

Table 1a: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhc *	*Dehalococcoides* Enumeration/Liter **
20120924MW-02V10N	DHC-8599	24-Sep-12	Groundwater	0.02 - 0.07 %	1 x 10^5 CEG/mL

11/6/12

Notes:

* Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

** Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was also detected in the method blank.
NA Not applicable as *Dehalococcoides* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
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130 Research Lane, Ste 2
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Certificate of Analysis: Gene-Trac® *Dehalobacter* Assay

Customer: Peter Fairbanks, URS
Project: Former EMCA Site
Customer Reference: 41569290-00002

SiREM Reference: S-2619
Report Date: 24-Oct-12
Data Files: iQ5-DHB-QPCR-0212
iQ5-DB-DHB-QPCR-0037

Table 1b: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhb*	*Dehalobacter* 16S rRNA Gene Copies/Liter	Gene Copies/mL
20120924MW-07RV15N	DHB-0629	24-Sep-12	Groundwater	0.001 - 0.004 %	1×10^4	10
20120924MW-04V08N	DHB-0630	24-Sep-12	Groundwater	NA	4×10^3U	4 U
20120924MW-03V09N	DHB-0631	24-Sep-12	Groundwater	0.03 - 0.08 %	7×10^5	700
20120924MW-02V10N	DHB-0632	24-Sep-12	Groundwater	0.001 - 0.004 %	5×10^3	5
20120924MW-06V13N	DHB-0633	24-Sep-12	Groundwater	0.0001 - 0.0003 %	1×10^3J	1 J

11/6/12

Notes:

* Percent Dehalobacter (Dhb) in microbial population. This value is calculated by dividing the number of Dhb 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhb enumeration.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was also detected in the method blank.
NA Not applicable as *Dehalobacter* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

Client: URS Corporation

Job Number: 460-47728-1

Client Sample ID: **20121129MW-02V10N**

Lab Sample ID: 460-47728-1
Client Matrix: Water

Date Sampled: 11/29/2012 1000
Date Received: 11/30/2012 1000

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-137775	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4486.d
Dilution:	25			Initial Weight/Volume:	10 mL
Analysis Date:	12/01/2012 1845			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	5600		43	67

Client: URS Corporation

Job Number: 460-47728-1

Client Sample ID: **TB11292012**

Lab Sample ID: 460-47728-2
Client Matrix: Water

Date Sampled: 11/29/2012 1000
Date Received: 11/30/2012 1000

3810M Methane, Ethene, Ethane, and Propane using Static Headspace

Analysis Method:	3810M	Analysis Batch:	460-137775	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf4480.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	12/01/2012 1750			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	2.3	J B	1.7	2.7

Client: URS Corporation

Job Number: 460-47728-1

Client Sample ID: **20121129MW-02V10N**

Lab Sample ID: 460-47728-1
Client Matrix: Water

Date Sampled: 11/29/2012 1000
Date Received: 11/30/2012 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-138822	Instrument ID:	VOAMS4
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	d26847.d
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/08/2012 1049			Final Weight/Volume:	5 mL
Prep Date:	12/08/2012 1049				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	65		0.16	2.0
Chlorotrifluoroethene	380		0.36	2.0
1,2-Dichloro-1,1,2-trifluoroethane	29		1.7	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
Toluene-d8 (Surr)	99		70 - 130
Bromofluorobenzene	98		70 - 130

Client: URS Corporation

Job Number: 460-47728-1

Client Sample ID: **TB11292012**

Lab Sample ID: 460-47728-2
Client Matrix: Water

Date Sampled: 11/29/2012 1000
Date Received: 11/30/2012 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-138822	Instrument ID:	VOAMS4
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	d26844.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/08/2012 0941			Final Weight/Volume:	5 mL
Prep Date:	12/08/2012 0941				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	0.080	U	0.080	1.0
Chlorotrifluoroethene	0.18	U	0.18	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.84	U	0.84	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
Toluene-d8 (Surr)	100		70 - 130
Bromofluorobenzene	98		70 - 130

General Chemistry

Client Sample ID: **20121129MW-02V10N**

Lab Sample ID: 460-47728-1
Client Matrix: Water

Date Sampled: 11/29/2012 1000
Date Received: 11/30/2012 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	2.2	U	mg/L	2.2	5.0	1.0	D516-90, 02

Analysis Batch: 460-137957 Analysis Date: 12/03/2012 0913

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Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Tim Ifkovich & Bruce Przybyl, URS
Project: Rohm & Haas - Former EMCA Site
Customer Reference: 41569290.00005

SiREM Reference: S-2674
Report Date: 12-Dec-12
Data Files: iQ5-GBA-QPCR-0046
MyiQ-DHC-QPCR-0959
MyiQ-DB-DHC-QPCR-033

Table 1a: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhc *	*Dehalococcoides* Enumeration/Liter **
20121129MW-02V10N	DHC-8783	29-Nov-12	Groundwater	0.2 - 0.5 %	2×10^6

(CEQ/L)

2×10^3 CEQ/mL

Notes:

* Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

** Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was also detected in the method blank.
NA Not applicable as *Dehalococcoides* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

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Certificate of Analysis: Gene-Trac® *Dehalobacter* Assay

Customer: Tim Ifkovich & Bruce Przybyl, URS
Project: Rohm & Haas - Former EMCA Site
Customer Reference: 41569290.00005

SiREM Reference: S-2674
Report Date: 12-Dec-12
Data Files: iQ5-DHB-QPCR-0218
iQ5-DB-DHB-QPCR-0040

Table 1b: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhb*	*Dehalobacter* 16S rRNA Gene Copies/Liter
20121129MW-02V10N	DHB-0658	29-Nov-12	Groundwater	3 - 7 %	4×10^7

4×10^4 GC/mL

Notes:
* Percent Dehalobacter (Dhb) in microbial population. This value is calculated by dividing the number of Dhb 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhb enumeration.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was also detected in the method blank.
NA Not applicable as *Dehalobacter* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers
E Extracted genomic DNA was not detected in the sample.

Analyst: Jen Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

ATTACHMENT B

SUPPORT DOCUMENTATION

CASE NARRATIVE

Client: URS Corporation

Project: Former EMCA Site

Report Number: 460-45018-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 09/25/2012; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at the time of receipt were 3.2° C and 3.3° C..

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

TOTAL RECOVERABLE METALS
Samples 460-45018-1 through 460-45018-6 were analyzed for total recoverable metals in accordance with EPA Method 200.7. The samples were prepared on 09/28/2012 and 09/29/2012 and analyzed on 09/29/2012 and 10/03/2012.

Iron failed the recovery criteria low for the MS of sample 460-45018-4 in batch 460-129432.

Refer to the QC report for details.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

ALKALINITY
Samples 460-45018-1 through 460-45018-6 were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 09/26/2012.

No difficulties were encountered during the alkalinity analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED HYDROCARBON GASES
Samples 460-45018-1 through 460-45018-7 were analyzed for dissolved hydrocarbon gases in accordance with EPA Method 3810M (Methane, Ethane, Ethene, Propane). The samples were analyzed on 09/25/2012 and 09/26/2012.

Methane was detected in method blanks MB 460-129432/4 and MB 460-129643/4 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries of Methane were outside control limits in batch 129432 due to the high concentration in the parent sample relative to the spike amount. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Refer to the QC report for details.

Samples 460-45018-1(10X), 460-45018-4(20X), 460-45018-5(10X) and 460-45018-6(5X) required dilution prior to analysis. The reporting

limits have been adjusted accordingly.

No other difficulties were encountered during the dissolved gases analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 460-45018-1 through 460-45018-7 were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/05/2012.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 130691 were outside control limits for Chlorotrifluoroethene. The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike (MS) recoveries for batch 130677 were outside control limits for Chlorotrifluoroethene due to the high concentration present in the parent sample relative to the spike amount. The associated laboratory control sample (LCS) recovery met acceptance criteria.

The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples 460-45018-1(2X) and 460-45018-5(2X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analyses.

All other quality control parameters were within the acceptance limits.

SULFATE
Samples 460-45018-1 through 460-45018-6 were analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 09/29/2012.

Samples 460-45018-4 through 460-45018-6(2X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analyses.

All quality control parameters were within the acceptance limits.

HARDNESS
Samples 460-45018-1 through 460-45018-6 were analyzed for hardness in accordance with Hardness (a calculated method). The samples were analyzed on 10/09/2012.

No difficulties were encountered during the hardness analyses.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Samples 460-45018-1 through 460-45018-6 were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 10/08/2012.

Samples were analyzed for nitrite (NO2) via method SM4500_NO2_B within HT (with the exception of sample -1 that was run 4 minutes outside of HT) on our Konelab instrument on 9/26/12. The preserved volume for these samples was analyzed on 10/1/12 to obtain combined NO3+NO2 results (these were within HT as well). Nitrate (NO3) was determined by calculation (combined NO3+NO2 minus NO2). QC was done for both the Konelab and preserved batches, reflecting actual analysis. No qualifier is necessary for sample 460-45018-1 as there were no detections for the total nitrate-nitrite analysis performed within holding time.

No difficulties were encountered during the Niitrate analyses.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 460-45018-1 through 460-45018-6 were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 09/26/2012.

No difficulties were encountered during the TOC analyses

All quality control parameters were within the acceptance limits.

Sm 4500 Nitrite

46004368

45018

CHAIN OF CUSTODY RECORD

URS

PROJECT NO.: 41569290.00002

SITE NAME: Former EMCA Site

SAMPLERS (PRINT/SIGNATURE): Tim Ifkovich / Tim Ifkovich

LAB: Test America - Edison, N.J.

COOLER 1 of 2

PAGE 1 of 1

DELIVERY SERVICE: FED EX

AIRBILL NO.: ~~8771 3916 5852~~ 8705 0251 2864

TESTS:
1. 8260B Freon (MUIS)
2. 3810M / RSK-175 Methane
3. D516 / 315.4 / Sm 4500 Nitrite, Sulfate
4. 200.7 Iron, 2340C Hardness
5. SM 5310B TOC
6. 2320B Alkalinity
7. ~~Sulfide~~
8. ~~Nitrate~~

BOTTLE TYPE AND PRESERVATIVE:
1. 40 ml VOA HCl
2. 40 ml VOA HCl
3. 250 ml Plastic
4. 500 ml Plastic HNO_3
5. 250 ml Amber glass - H_2SO_4
6. 500 ml plastic
7. ~~500 ml plastic~~
8. (blank)

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	1	2	3	4	5	6	7	8	REMARKS (45018)	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)
MW-07R	9/24/12	0948	G	20120924MW-07RV15N	WG	10	3	3	1	1	1	1			-1	N,			
MW-04	9/24/12	1107	G	20120924MW-04V08N	WG	10	3	3	1	1	1	1			-2	N,			
MW-04	9/24/12	1107	G	20120924MW-04V08FD	WG	10	3	3	1	1	1	1			-3	FD,			
MW-03	9/24/12	1229	G	20120924MW-03V09N	WG	10	3	3	1	1	1	1			-4	N,			
MW-03	9/24/12	1229	G	20120924MW-03V09MS	WG	10	3	3	1	1	1	1			-4	MS,			
MW-03	9/24/12	1229	G	20120924MW-03V09SD	WG	10	3	3	1	1	1	1			-4	SD,			
MW-02	9/24/12	1401	G	20120924MW-02V10N	WG	10	3	3	1	1	1	1			-5	N,			
MW-06	9/24/12	1506	G	20120924MW-06V13N	WG	10	3	3	1	1	1	1			-6	N,			
Trip Blank	9/24/12	—	G	20120924TB1	WQ	4	2	2							-7				

MATRIX CODES: AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

#3 4.9/3.3°C 4.8/3.2°C

SAMPLE TYPE CODES: TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
Tim Ifkovich	9/24/12	1600	[signature] (From Fedex)	9/25/12	9:30

SPECIAL INSTRUCTIONS: For questions contact Peter Fairbanks @ 716-923-1121

CS#488408

☆ 2 Week TAT #595931

Distribution: Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CofCR/GCM

S-2619

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. 41509290.00002

SITE NAME Former EMCA Site

SAMPLERS (PRINT/SIGNATURE) Tim Ifkovich Tim Ifkovich

LAB SiREM

COOLER 1 of 1

PAGE 1 of 1

DELIVERY SERVICE: FED Ex AIRBILL NO.: 8490 6544 4011

TESTS: Dehalococcoides/Gene TCE 52103

BOTTLE TYPE AND PRESERVATIVE: 1 L Plastic

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	Dehalococcoides/Gene TCE 52103 (1 L Plastic)							REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)
MW-07R	9/24/12	0948	G	20120924MW-07RV15N	WG	1	1								N,			
MW-04	9/24/12	1107	G	20120924MW-04V08N	WG	1	1								N,			
MW-03	9/24/12	1229	G	20120924MW-03V09N	WG	1	1								N,			
MW-02	9/24/12	1401	G	20120924MW-02V10N	WG	1	1								N			
MW-06	9/24/12	1506	G	20120924MW-06V13N	WG	1	1								N,			

MATRIX CODES: AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES: TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
-			[signature] SiREM	Sept 25/12	1115

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
Tim Ifkovich	9/24/12	1600			

SPECIAL INSTRUCTIONS: For questions contact Peter Fairbanks @ 716-923-1121

Distribution: Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CoCR/GCM

2 Week TAT

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Edison Job No.: 460-45018-1

SDG No.:

Lab File ID: b47257.d BFB Injection Date: 10/05/2012

Instrument ID: VOAMS2 BFB Injection Time: 07:07

Analysis Batch No.: 130691

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	24.3	
75	30.0 - 60.0 % of mass 95	53.7	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.8	
173	Less than 2.0 % of mass 174	0.5	(0.6)1
174	50.0 - 120.00 % of mass 95	78.1	
175	5.0 - 9.0 % of mass 174	5.9	(7.6)1
176	95.0 - 101.0 % of mass 174	75.7	(97.0)1
177	5.0 - 9.0 % of mass 176	4.9	(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 460-130691/2	b47259.d	10/05/2012	07:59
	LCS 460-130691/3	b47260.d	10/05/2012	08:34
	MB 460-130691/4	b47263.d	10/05/2012	09:47
	460-45228-A-31 MS	b47267.d	10/05/2012	11:16
	460-45228-A-31 MSD	b47268.d	10/05/2012	11:38
20120924MW-07RV15N	460-45018-1	b47275.d	10/05/2012	14:16

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-45018-1

SDG No.:

Lab Sample ID: CCVIS 460-130691/2 Calibration Date: 10/05/2012 07:59

Instrument ID: VOAMS2 Calib Start Date: 10/04/2012 21:42

GC Column: Rtx-624 ID: 0.25(mm) Calib End Date: 10/04/2012 23:55

Lab File ID: b47259.d Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorotrifluoroethene	LinF	0.0640	0.0691		21.6	20.0	8.2	50.0
Dichlorodifluoromethane	Ave	0.3195	0.3328		20.8	20.0	4.1	50.0
Chloromethane	Ave	0.3688	0.4275	0.1000	23.2	20.0	15.9	50.0
Vinyl chloride	Ave	0.3173	0.3635		22.9	20.0	14.6	20.0
Bromomethane	Ave	0.1722	0.2074		24.1	20.0	20.5	50.0
Chloroethane	Ave	0.1665	0.2009		24.1	20.0	20.7	50.0
Dichlorofluoromethane	Ave	0.5696	0.6188		21.7	20.0	8.6	50.0
Trichlorofluoromethane	Ave	0.4104	0.4679		22.8	20.0	14.0	50.0
n-Pentane	Ave	0.0385	0.0265		27.6	40.0	-31.1	50.0
Ethyl ether	Ave	0.2427	0.2736		22.5	20.0	12.7	50.0
Isopropene	Ave	0.3569	0.3516		19.7	20.0	-1.5	50.0
1,2-Dichloro-1,1,2-trifluoro ethane	Ave	0.4258	0.3277		15.4	20.0	-23.0	50.0
Acrolein	Ave	0.0765	0.0891		46.6	40.0	16.5	99.0
Freon TF	Ave	0.2501	0.1859		14.9	20.0	-25.7	50.0
1,1-Dichloroethene	Ave	0.2399	0.2257		18.8	20.0	-5.9	20.0
Acetone	QuaF	0.1654	0.1753		21.7	20.0	8.4	50.0
Iodomethane	Ave	0.5238	0.5223		19.9	20.0	-0.3	50.0
Carbon disulfide	Ave	0.8634	0.8636		20.0	20.0	0.0	50.0
Cyclopentene	Ave	0.6663	0.6149		18.5	20.0	-7.7	50.0
Methyl acetate	Ave	0.4526	0.4922		21.8	20.0	8.8	50.0
Acetonitrile	Ave	0.0550	0.0658		478	400	19.6	50.0
Methylene Chloride	Ave	0.3128	0.3148		20.1	20.0	0.6	50.0
TBA	Ave	0.0409	0.0420		411	400	2.7	50.0
MTBE	Ave	0.8465	0.9597		22.7	20.0	13.4	50.0
trans-1,2-Dichloroethene	Ave	0.2698	0.2770		20.5	20.0	2.6	50.0
Acrylonitrile	Ave	0.1473	0.1650		22.4	20.0	12.0	50.0
Hexane	Ave	0.2087	0.1208		11.6	20.0	-42.1	50.0
1,1-Dichloroethane	Ave	0.5450	0.5868	0.1000	21.5	20.0	7.7	50.0
DIPE	Ave	0.9543	1.114		23.3	20.0	16.7	50.0
Vinyl acetate	LinF	0.8318	0.8634		34.5	40.0	-13.7	50.0
Tert-butyl ethyl ether	Ave	0.9550	1.030	0.0100	21.6	20.0	7.8	50.0
2,2-Dichloropropane	Ave	0.3805	0.3829		20.1	20.0	0.6	50.0
cis-1,2-Dichloroethene	Ave	0.2998	0.3149		21.0	20.0	5.1	50.0
2-Butanone	Ave	0.0469	0.0523		22.3	20.0	11.4	50.0
Ethyl acetate	Ave	0.0377	0.0409		43.4	40.0	8.6	50.0
Bromochloromethane	Ave	0.1675	0.1773		21.2	20.0	5.9	50.0
Tetrahydrofuran	Ave	0.1450	0.1635		22.6	20.0	12.8	50.0
Chloroform	Ave	0.5520	0.5926		21.5	20.0	7.3	20.0
Cyclohexane	Ave	0.3944	0.2766		14.0	20.0	-29.9	50.0
1,1,1-Trichloroethane	Ave	0.4136	0.3869		18.7	20.0	-6.5	50.0

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice) Tim Ifkovich	Samplers Name (Printed) Megan Dascoli	Site/Project Identification Rohm & Haas / Former EMCA site
Company VRS Corp	P. O. # 4156929 0.00005	State (Location of site): NJ: ☐ NY: ☒ Other:
Address 77 Goodell St	Analysis Turnaround Time: Standard ☒	Regulatory Program:
City Buffalo, NY State	Rush Chrages Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	LAB USE ONLY Project No:
Phone 716-856-5636 Fax		Job No: 47728

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Freon 113, 123a, 1113	Methane	Sulfate	Sample Numbers
20121129MW-02VION	11/29/12	1000	GW	7	X	X	X	-1
TB112920M	11/29/12	1000	W	6	X	X		-2

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH 6 = Other _____, 7 = Other _____

Soil:
Water: 1, 2 | 1, 2 | 1

Special Instructions _____ Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1) Megan Dascoli	VRS	11/29/12 1142	1)	TA NYC
2)	TA NYC	11/29/12 15:50	2)	
3) Fedex		11/30/12 10:00	3)	TA ED
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

#4 2.0/2.4°C 4.0/4.4°C No C.S.

TAL - 0016 (0408)

12/13/2012

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CMS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

S-2674

Page 1 of 1

Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification
Tim Ifkovich/Bruce Przybyl	Megan Dascoli	Rohm & Haas - Former EMCA Site
Company: URS Corp	P. O. #: 41569290.00005	State (Location of site): NJ: ☐ NY: ☒ Other:
		Regulatory Program:
Address: 77 Goodell Street	Analysis Turnaround Time: Standard ☒	
City: Buffalo, State: NY	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone: 716-856-5636 Fax:		

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

Sample Identification	Date	Time	Matrix	No. of Cont.	Dehalobacter	Dehalococcoides									LAB USE ONLY: Project No: / Job No: / Sample Numbers
20121129MW-02VIDN	11/29/12	1000	GW	1	X	X									
Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH, 6 = Other, 7 = Other				Soil:											
				Water:	1	1									

Special Instructions Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1) Megan Dascoli	URS	11/29/12 1615	1) [illegible]	[illegible]
Relinquished by 2)	Company	Date / Time 11/30/12 1420	Received by 2) J. Wilkinson	Company SIREM
Relinquished by 3)	Company	Date / Time	Received by 3)	Company
Relinquished by 4)	Company	Date / Time	Received by 4)	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL-0016 (0408)

Massachusetts (M-NJ312), North Carolina (No. 578)

Mailed FedEx to SIREM, Ontario, CANADA

CASE NARRATIVE

Client: URS Corporation

Project: Rohm and Haas - Former EMCA Site

Report Number: 460-47728-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/30/2012 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4° C and 4.4° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DISSOLVED HYDROCARBON GASES
Samples 460-47728-1 and 460-47728-2 were analyzed for dissolved hydrocarbon gases in accordance with EPA Method 3810M (Methane, Ethane, Ethene, Propane). The samples were analyzed on 12/01/2012.

Methane was detected in method blank MB 460-137775/4 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

The following sample was diluted due to the abundance of target analytes: 20121129MW-02V10N (460-47728-1). Elevated reporting limits (RLs) are provided.

Sample 460-47728-1(25X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the dissolved gases analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 460-47728-1 and 460-47728-2 were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/08/2012.

The matrix spike (MS) recoveries for batch 138822 were outside control limits for Chlorotrifluoroethene. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Refer to the QC report for details.

The following sample was diluted to bring the concentration of target analytes within the calibration range: 20121129MW-02V10N (460-47728-1). Elevated reporting limits (RLs) are provided.

Sample 460-47728-1(2X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analyses.

All other quality control parameters were within the acceptance limits.

SULFATE

Sample 460-47728-1 was analyzed for sulfate in accordance with ASTM Method D516-90. The samples were analyzed on 12/03/2012.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

APPENDIX C

2012 SUPPLEMENTAL INJECTION SUMMARY

2012 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
Phase 1 - September 25 - October 4, 2012

Injection Point using SRS® 60-B and WILCLEAR™ Sodium Lactate	Depth (ft bgs)	Approximate Volume (gal.)	Notes
1	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
2	6 - 25	SRS® 60-B - ~3.5 gal/ft	Refusal at 25 ft bgs.
		WILCLEAR™ - ~14.5 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
3	6 - 25	SRS® 60-B - ~3.5 gal/ft	Refusal at 25 ft bgs.
		WILCLEAR™ - ~14.5 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
4	6 - 29	SRS® 60-B - ~2.9 gal/ft	Difficulty with seal at surface.
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
5	6 - 29	SRS® 60-B - ~2.9 gal/ft	Difficulty with seal at surface.
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
6	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
7	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
8	6 - 28	SRS® 60-B - ~3 gal/ft	Refusal at 28 ft bgs.
		WILCLEAR™ - ~12.6 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
9	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
10	6 - 28	SRS® 60-B - ~3 gal/ft	Refusal at 28 ft bgs.
		WILCLEAR™ - ~12.6 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
11	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
12	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
13	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	

2012 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
Phase 1 - September 25 - October 4, 2012

Injection Point using SRS® 60-B and WILCLEAR™ Sodium Lactate	Depth (ft bgs)	Approximate Volume (gal.)	Notes
14	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
15	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	
16	6 - 29	SRS® 60-B - ~2.9 gal/ft	
		WILCLEAR™ - ~12 gal/ft	
	Subtotal	**SRS® 60-B - 69**	
		WILCLEAR™ - 289	

2012 Supplemental Injection Summary
Former EMCA Site, Mamaroneck, New York
Phase 2 - October 31, 2012

Injection Point using KB-1 Plus®	Depth (ft bgs)	Approximate Volume (liters)	Notes
1	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	
2	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	
3	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	
4	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	
5	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	
6	~15, ~20, ~25	KB-1 Plus® - 1 liter/interval	
	Subtotal	KB-1 Plus® - 3 liters	