URS

December 28, 2011

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 2011 Sampling Event

Dear Mr. Lee:

Enclosed is one CD containing the Groundwater Sampling and Analysis Report for the September 2011 Sampling Event. 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)
Ms. Sally Dewes, NYSDEC (e-mail of LOT)
File: 11172730/C-1

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Groundwater Sampling and Analysis Report September 2011 Sampling Event

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 2011

G4427P

FORMER EMCA SITE

SITE NO. 360025

MAMARONECK, NEW YORK

GROUNDWATER SAMPLING AND ANALYSIS REPORT
SEPTEMBER 2011 SAMPLING EVENT

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 2011

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1.0 INTRODUCTION

This report presents the results of groundwater monitoring conducted on September 13, 2011 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 2011 Sampling Event* (URS, 2011a). The groundwater monitoring program generates data used to monitor the effectiveness of remedial actions performed at the site from 2003 to 2011.

The pilot program conducted in 2003, the interim remedial measure in 2004, the supplemental injection in 2007, and the supplemental injection in 2009, all involved the injections of food-grade emulsified soybean oil and sodium lactate into groundwater 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. This was the fourteenth groundwater sampling event since the interim remedial measure in 2004, the ninth following the supplemental injection event in 2007, and the sixth following the 2009 supplemental injection event.

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from a total of five monitoring wells using low-flow purging and sampling procedures. Static groundwater level measurements were taken prior to purging and sampling. Field purging and sampling logs are presented in Appendix A. A truck was parked over the top of monitoring well MW-03 during the sampling event making access difficult, however a sample was still able to be collected. In addition, during purging of monitoring well MW-06, a vendor loaded a nearby rolloff dumpster onto a truck, and a significant volume of water came out of the back of the dumpster. A small volume, less than 1 liter, flowed into well MW-06. The well was purged for an additional 45 minutes (approx.) until the purge parameters stabilized within protocol.

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 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 wells MW-02, MW-03, MW-06, and MW-07R to collect additional groundwater data to assist in the development of a Contingency Measures Work Plan. These additional analyses, recommended in the *Groundwater Sampling and Analysis Report, April 2011 Sampling Event* (URS, 2011), 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
Ferrous Iron	Field colorimeter
Oxidation-Reduction Potential	Field-probe
pH	Field-probe
Temperature	Field-probe
Dissolved Oxygen	Field-probe

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 northwestward towards the Sheldrake River.

Groundwater monitoring results for the current event 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 2011 results 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 current Freon results are also shown in bar-graph form on Figure 12.

4.0 DATA ASSESSMENT

The groundwater analytical data collected in September 2011 is the sixth 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 6, 2011. These results were presented in the previous Groundwater Sampling and Analysis Report for April 2011 (URS, 2011).

Routine Parameters

The groundwater analytical results for the September 2011 sampling event indicate that Freon 113 concentrations were detected above the remedial goal of 5 µg/L at two of the five wells sampled. Freon 113 was detected at 490 µg/L at MW-02, decreasing from 920 µg/L and detected at 5.4 µg/L at MW-03, decreasing from 32 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. Therefore, the concentrations of these compounds are expected to increase over time as Freon 113 declines in response to the treatments, and then eventually decline as reductive dechlorination continues. Compared to the previous sampling event (April 2011), Freon 123a decreased at MW-02 (33 J µg/L to 26 µg/L), MW-03 (99 J µg/L to 8.3 µg/L), MW-06 (38 J µg/L to 4.4 µg/L), and MW-07R (6.3 J µg/L to 0.94 J µg/L). Freon 123a has never been detected at MW-04.

Freon 1113, which holds two less chlorines than Freon 113, increased in concentration from the April 2011 event at MW-02 (110 J µg/L to 180 µg/L), and decreased at MW-03 (110 J µg/L to 82 µg/L), MW-04 (5 J µg/L to 1.2 µg/L), MW-06 (96 J µg/L to 30 µg/L), and MW-07R (370 J µg/L to 26 µg/L).

The September 2011 sulfate concentrations decreased at all locations compared to the previous event. This trend indicates generally more favorable reducing (more anaerobic) conditions for biological degradation of the Freon compounds.

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

Oxidation-reduction potentials decreased in all wells from the previous event. The range generally became more reducing, ranging from between -68 to -115 millivolts in the April 2011 event to between -109 to -126 millivolts in the September 2011 event.

Results for supplemental parameters are also presented in Table 2. These parameters have not been analyzed for during past sampling events at this site, so there are no previous data to which these results can be compared. These results will be considered during the design of the contingency measures.

Supplemental Parameters

Dehalococcoides results ranged from 1.79 CEQ/mL (MW-02) to 353,000 J CEQ/mL (MW-06). As described in Section 2.0 above, water from a garbage dumpster entered monitoring well MW-06. It is unknown whether or not this water may have influenced the very high level of dehalococcoides detected in this well.

Total iron concentrations ranged from 9,630 µg/L to 60,400 µg/L. Ferrous iron, measured in the field using a Hach DR/890 colorimeter and ferrous iron AccuVac ampules, ranged from 7.4 mg/L to 50.6 mg/L. Ferric iron was then calculated by subtracting the measured ferrous iron result from the total iron laboratory result. Calculated ferric iron concentrations ranged from 2.23 mg/L to 9.8 mg/L.

Results for the additional parameters of alkalinity, hardness, nitrate, and total organic carbon will be considered when evaluating various contingency options.

5.0 CONCLUSIONS

A relative comparison of data from the September 2011 event with the April 2011 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 data trends show a possible residual effect of the August-September 2009 supplemental injection event. Freon 113 concentrations decreased at MW-02, MW-03, and MW-06, and MW-07R; and remained the same at non-detect at MW-04 in September 2011. Freon 113 daughter product Freon 123a decreased at MW-02, MW-03, and MW-06, and MW-07R, and remained non-detect at MW-04 in the September 2011 event. Freon 113 daughter product Freon 1113 decreased at MW-03, MW-04, MW-06, and MW-07R, and increased at MW-02 in the September 2011 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 slightly less reducing range (-109 to -126 millivolts). Sulfate, which is a competing electron acceptor with Freon, decreased in all wells.

Methane concentrations decreased at MW-02, MW-03, MW-04, and MW-07R, and increased at MW-06. Dissolved oxygen concentrations remained the same at non-detect at all wells.

Overall, it appears that conditions for reductive dechlorination are more favorable based on the September 2011 sample results when compared to the April 2011 results. This may be indicative of a lingering residual effect of the August-September 2009 substrate injection event.

Table 4

Comparison of April 2011 to September 2011 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

6.0 CONTINGENCY TRIGGER EVALUATION

A comparison of the current round of data to the contingency measure trigger criteria is presented below. These criteria are presented in the Site Management Plan (URS, 2010).

<table>
<tr><th>TRIGGER CRITERIA</th><th>ANALYSIS</th></tr>
<tr><td>1. A successive increase of 100-percent or greater in Freon 113 concentrations for two consecutive events at any monitored well, assuming that the remediation goal (5 μg/L) is exceeded in at least one of the monitoring events. For example, a well concentration that increased from 4 μg/L to 8 μg/L to 16 μg/L over two consecutive events would trigger contingency measures.</td><td>No contingency criteria triggered.

• Compared to the April 2011 sampling event, Freon 113 decreased in all wells where it was detected during the September 2011 sampling event.</td></tr>
<tr><td>2. Freon 113 is confirmed at MW-04 at a concentration greater than the remediation goal (5 μg/L).</td><td>No contingency criteria triggered.</td></tr>
<tr><td>3. The maximum detected Freon 113 concentration at any well is greater than a maximum target level, as shown below.
<table><tr><th>YEAR</th><th>TARGET MAXIMUM</th></tr><tr><td>2011</td><td>320 μg/L</td></tr><tr><td>2012</td><td>160 μg/L</td></tr><tr><td>2013</td><td>80 μg/L</td></tr><tr><td>2014</td><td>40 μg/L</td></tr></table>Once 40 μg/L is achieved after 2014, Criteria #1 becomes the relevant criteria.</td><td>Contingency criteria triggered.

• Freon 113 detected at MW-02 decreased from 920 μg/L in April 2011 to 490 μg/L in September 2011, still a level greater than the maximum target level of 320 μg/L.</td></tr>
</table>

Based on this analysis, contingency measures are triggered by the September 2011 sampling event.

7.0 NEXT STEPS

Results of the September 2011 groundwater monitoring event confirm that contingency measures are triggered by the Freon 113 concentration detected in well MW-02 (490 μg/L). In accordance with the proposed schedule presented in the April 2011 SAR Report (URS, 2011), URS/Dow will prepare a draft contingency measure work plan for submittal to the NYSDEC.

The work plan will discuss the contingency measures evaluated, and then present the details of implementing the selected contingency measures. Upon completion of field activities, details of contingency measures implementation will be presented the subsequent monitoring report.

The following approximate schedule is proposed:

	2011	**2012**				
ACTION	**DEC.**	**JAN.**	**FEB.**	**MARCH**	**APRIL**	**MAY**
September Monitoring Report Submittal	X					
Dow Submits Contingency Measure Work Plan			X			
NYSDEC Comments on Contingency Measure Work Plan				X		
Contingency Measure Work Plan Finalized					X	
April 2012 Monitoring Event Completed					X	
Contingency Measure Executed						X

Additional sampling events may be proposed or planned events shifted to provide adequate monitoring of the injection event.

REFERENCES

URS Inc., 2005. *Groundwater Sampling and Analysis Report, May 2005 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* August.

URS Inc., 2006a. *Groundwater Sampling and Analysis Report, December 2005 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* March.

URS Inc., 2006b. *Groundwater Sampling and Analysis Report, August 2006 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* October.

URS Inc., 2007a. *Groundwater Sampling and Analysis Report, February 2007 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* April.

URS Inc., 2007b. *Groundwater Sampling and Analysis Report, August 2007 Sampling Event & Summary of Supplemental Injection Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* October.

URS Inc., 2008. *Groundwater Sampling and Analysis Report, February 2008 Sampling Event, Former EMCA Site, Site No 360025, Mamaroneck, New York.* May.

URS Inc., 2008a. *Groundwater Sampling and Analysis Report, August 2008 Sampling Event, Former EMCA Site, Site No 360025, Mamaroneck, New York.* October.

URS Inc., 2009. *Groundwater Sampling and Analysis Report, February 2009 Sampling Event, Former EMCA Site, Site No 360025, Mamaroneck, New York.* April.

URS Inc., 2009b. *2009 Supplemental Injection Work Plan, Former EMCA Site, Site No 360025, Mamaroneck, New York.* July.

URS Inc., 2009c. *Groundwater Sampling and Analysis Report, October 2009 Sampling Event and Summary of 2009 Supplemental Injection Event, Former EMCA Site, Site No 360025, Mamaroneck, New York.* November.

URS Inc., 2010. *Site Management Plan, NYSDEC Site Number 360025, Former EMCA Site, Mamaroneck, New York.* October.

URS Inc., 2010a. *Groundwater Sampling and Analysis Report, February 2010 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* April.

URS Inc., 2010b. *Groundwater Sampling and Analysis Report, June 2010 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* August.

URS Inc., 2010c. *Groundwater Sampling and Analysis Report, October 2010 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* December.

URS Inc., 2011. *Groundwater Sampling and Analysis Report, April 2011 Sampling Event, Former EMCA Site, Site No. 360025, Mamaroneck, New York.* June.

TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS (September 13, 2011)
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	4.21	21.95
GZ-06	28.02	6.40	21.62
MW-01	25.74	NA	NA
MW-02	25.63	4.57	21.06
MW-03	25.59	4.60	20.99
MW-04	25.31	4.46	20.85
MW-05	24.63	3.69	20.94
MW-06	25.77	4.64	21.13
MW-07R	25.63	4.70	20.93
Benchmark B (Sheldrake River - South [Rockaway Avenue] Bridge)	32.21	13.00	19.21
Benchmark C[4] (Sheldrake River - between North and South Bridges)	--	--	18.31
Benchmark D (Sheldrake River - North [Fenimore Road] Bridge)	27.41	10.00	17.41

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 9/13/2011.
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.

NA - Well could not be located.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
SEPTEMBER 2011 SAMPLING EVENT
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-02	MW-03	MW-03	MW-04	MW-06
Sample ID			20110913MW02V08N	20110913MW03V09FD	20110913MW03V09N	20110913MW04V08N	20110913MW06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Chlorotrifluoroethene (Freon-1113)	UG/L	5	180	69	82	1.2	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	490	4.2	5.4	1 U	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	26	8.3	9.4	1 U	4.4
Dissolved Gases							
Methane	UG/L	-	5,300	12,000	15,000	1,700	1,800
Total Metals							
Iron	UG/L	300	60,400	35,300	35,700	NA	9,630
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	361	596	596	NA	388
Dehalococcoides ethenogenes	CEQ/mL	-	1.79	1,820	3,780	NA	353,000 J
Hardness (as CaCO3)	MG/L	-	726	520	510	NA	235
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 U	0.1 U	NA	0.1 U
Sulfate	MG/L	250	5 U	19	18.2	16.7	16.5
Total Organic Carbon	MG/L	-	19.1	27.1	26.7	NA	10.9
Field Parameter							
Dissolved Oxygen	MG/L	-	0.00	NA	0.00	0.00	0.00
Ferrous Iron	MG/L	-	50.6	29.8	29.8	14.3	7.4
Ferric Iron (calculated)	MG/L	-	9.8	5.5	5.9	NA	2.23
Oxidation-Reduction Potential	mV	-	-115	NA	-124	-126	-123
pH	S.U.	-	6.80	NA	6.85	6.83	7.08
Specific Conductance	MS/CM	-	3.24	NA	1.99	2.29	0.801
Temperature	DEG C	-	22.1	NA	20.7	22.5	22.4
Turbidity	NTU	-	0.1	NA	21.8	0.2	5.3

*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 - Analyte is reported below the PQL at an estimated concentration.

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

Detection Limits shown are PQL

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
SEPTEMBER 2011 SAMPLING EVENT
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-07R
Sample ID			20110913MW07RV15N
Matrix			Groundwater
Depth Interval (ft)			-
Date Sampled			09/13/11
Parameter	**Units**	**Criteria***	
Volatiles			
Chlorotrifluoroethene (Freon-1113)	UG/L	5	26
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1.6
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	0.94 J
Dissolved Gases			
Methane	UG/L	-	2,000
Total Metals			
Iron	UG/L	300	23,600
Miscellaneous Parameters			
Alkalinity, Total (as CaCO3)	MG/L	-	406
Dehalococcoides ethenogenes	CEQ/mL	-	248
Hardness (as CaCO3)	MG/L	-	637
Nitrogen, Nitrate	MG/L	10	0.1 U
Sulfate	MG/L	250	12.2
Total Organic Carbon	MG/L	-	11.3
Field Parameter			
Dissolved Oxygen	MG/L	-	0.00
Ferrous Iron	MG/L	-	20.1
Ferric Iron (calculated)	MG/L	-	3.5
Oxidation-Reduction Potential	mV	-	-109
pH	S.U.	-	6.86
Specific Conductance	MS/CM	-	3.28
Temperature	DEG C	-	22.4
Turbidity	NTU	-	0.1

*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 - Analyte is reported below the PQL at an estimated concentration.

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

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**	**Criteria***					
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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*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 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			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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	559	474	477 J	218
Dehalococcoides ethenogenes	CEQ/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
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

*Criteria- 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			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**	**Criteria***					
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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	1,610	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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
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

*Criteria- 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			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**	**Criteria***	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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			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**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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
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

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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**	**Criteria***					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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	338	338
Dehalococcoides ethenogenes	CEQ/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
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

*Criteria- 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**	**Criteria***	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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	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			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**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
Chloride	MG/L	250	307	283	839	769	238
Dehalococcoides ethenogenes	CEQ/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
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

*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.

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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-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**	**Criteria***					
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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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
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

*Criteria- 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**	**Criteria***					
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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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
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**	**Criteria***					
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
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	361

*Criteria- 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			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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	1.79
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
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

*Criteria- 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_52103	MW03	DUP-91703	MW03-091703	DUP1_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/03	07/23/03	09/17/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		Field Duplicate (1-1)
Volatiles							
Acetone	UG/L	50	250 U	78	110	110	130 J
Benzene	UG/L	1	250 U	2.3	2.2	1.8	10 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	130 J	69 J	65 J	39 J
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	7.0 NJ	6.2 NJ	0 U	0 U
1,1-Dichloroethene	UG/L	5	33 J	2.0 U	2.0 U	2.0 U	4.0 U
cis-1,2-Dichloroethene	UG/L	5	250 U	5.0 U	5.0 U	5.0 U	10 U
trans-1,2-Dichloroethene	UG/L	5	250 U	5.0 U	5.0 U	5.0 U	10 U
Ethylbenzene	UG/L	5	200 U	0.3 J	4.0 U	4.0 U	8.0 U
2-Hexanone	UG/L	50	250 U	5.0 U	19	16	10 U
4-Methyl-2-Pentanone	UG/L	-	250 U	5.0 U	11	11	10 U
Tetrachloroethene	UG/L	5	50 U	1.0 U	1.0 U	1.0 U	4.9
Trichloroethene	UG/L	5	50 U	1.0 U	1.0 U	1.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5,800	68	26	16	150
Vinyl Chloride	UG/L	2	250 U	5.0 U	5.0 U	5.0 U	10 U
Xylene (total)	UG/L	5	250 U	1.1 J	5.0 U	5.0 U	10 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	78 J	43	180	110	170
Dissolved Gases							
Methane	UG/L	-	86	56	2,400	2,500	7,200
Total Metals							
Iron	UG/L	300	1,170	150,000	174,000 J	178,000 J	156,000
Dissolved Metals							
Iron	UG/L	300	267	152,000	187,000 J	186,000 J	167,000
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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_52103	MW03	DUP-91703	MW03-091703	DUP1_121703
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/03	07/23/03	09/17/03	09/17/03	12/17/03
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		Field Duplicate (1-1)
Miscellaneous Parameters							
Chloride	MG/L	250	113	143	99.2 J	91.5 J	224
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.36	2.7	0.86	0.95	1.4
Nitrogen, Kjeldahl, Total	MG/L	-	1.3	10.8	4.5	4.4	4.0
Nitrogen, Nitrate	MG/L	10	2	NA	0.1 U	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	0.1 UJ	NA	NA	NA
Sulfate	MG/L	250	32.7	26.9	5.0 U	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	0.5	3.7	25.5	27.9	23.5
Ferric Iron (lab)	MG/L	-	0.67	146	67.0	93.0	132
Fluoride	MG/L	1.5	0.28	0.44	0.27	0.2	0.22
Oil & Grease	MG/L	-	NA	NA	R	R	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.58	0 U	NA	0.01	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	40	-103	NA	-90	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.638	4.35	NA	1.64	NA
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- 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			MW-03_121703	MW-03	MW-03	MW-03VION	MW-03V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	07/23/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	120 J	NA	NA	NA	NA
Benzene	UG/L	1	10 U	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	38 J	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	68 J	83	2.0 J	51
1,1-Dichloroethene	UG/L	5	4 U	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	10 U	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	10 U	NA	NA	NA	NA
Ethylbenzene	UG/L	5	8 U	NA	NA	NA	NA
2-Hexanone	UG/L	50	10 U	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	10 U	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	4.6	NA	NA	NA	NA
Trichloroethene	UG/L	5	2 U	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	150	4,900 J	2.0 J	10 U	10 U
Vinyl Chloride	UG/L	2	10 U	NA	NA	NA	NA
Xylene (total)	UG/L	5	10 U	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	160	3,900	14	1.0 J	0.8 J
Dissolved Gases							
Methane	UG/L	-	4,900	2,700	6,300	10,000	7,400
Total Metals							
Iron	UG/L	300	164,000	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	176,000	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			MW-03	MW-03	MW-03	MW-03	MW-03
Sample ID			MW-03_121703	MW-03	MW-03	MW-03VION	MW-03V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	07/23/04	05/31/05	12/20/05	08/14/06
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	192	71.7	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	1.2	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	4.0	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	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	-	30.0	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	134	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.25	0.397	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.35	1.05	1.24	0 U	5.36
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-59	-143	-133	-151	-123
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.99	2.40	3.19	1.20	0.946
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*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

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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			20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	07/31/07	02/28/08	08/12/08	08/12/08
Parameter	**Units**	**Criteria***				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	39	54	13 J	10	10
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	2.0 J	0.5 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	48	7.0 J	4.0 J	1.0 J	1.0 J
Dissolved Gases							
Methane	UG/L	-	15,000	4,500	18,000	10,000	8,400
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			20070207MW-03V10N	20070731MW-03V10N	20080228MW03V10N	20080812MW03V10FD	20080812MW03V10N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	07/31/07	02/28/08	08/12/08	08/12/08
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	7.80	38.4	14.1	30.0	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	-	2.44	0.22	2.94	NA	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	-	-116	-79.7	-123.0	NA	-149
pH	S.U.	-	NA	6.15	6.15	NA	6.36
Specific Conductance	MS/CM	-	0.91	1.309	1.36	NA	1.69
Temperature	DEG C	-	NA	NA	11.6	NA	17.8
Turbidity	NTU	-	NA	NA	41	NA	2

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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			20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	10/13/09	02/26/10	06/24/10
Parameter	**Units**	**Criteria***		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	38	20	19	17 J	26
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	5.0 J	0.92 J	0.82 J	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	40	2.1	1.9	1 U	0.5 J
Dissolved Gases							
Methane	UG/L	-	13,000	5,300	4,800	13,000	6,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			20090218MW-03V10N	20091013MW-03V10FD	20091013MW-03V10N	20100226MW-03V09N	20100624MW-03V09N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	10/13/09	10/13/09	02/26/10	06/24/10
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	50.7 J	4.6 J	8.7	11.6	15.8
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 U	NA	0.00	0.00	0.85
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-185	NA	-103	-138	-170
pH	S.U.	-	6.06	NA	5.87	6.32	9.28
Specific Conductance	MS/CM	-	2.08	NA	1.85	3.39	1.50
Temperature	DEG C	-	12.87	NA	18.68	8.95	16.51
Turbidity	NTU	-	5	NA	8.7	94	5.1

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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-04
Sample ID			20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD	20110913MW03V09N	MW04-5-20-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	09/13/11	09/13/11	05/20/03
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	5.0 U
Benzene	UG/L	1	NA	NA	NA	NA	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	4.6	110 J	69	82	0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	2.0 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	5.0 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	5.0 U
Ethylbenzene	UG/L	5	NA	NA	NA	NA	4.0 U
2-Hexanone	UG/L	50	NA	NA	NA	NA	5.0 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	5.0 U
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	1.0 U
Trichloroethene	UG/L	5	NA	NA	NA	NA	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	32	4.2	5.4	5.0 U
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	5.0 U
Xylene (total)	UG/L	5	NA	NA	NA	NA	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	99 J	8.3	9.4	5.0 U
Dissolved Gases							
Methane	UG/L	-	7,400	18,000	12,000	15,000	380
Total Metals							
Iron	UG/L	300	NA	NA	35,300	35,700	18,400
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	18,500
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	596	596	NA

*Criteria- 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-04
Sample ID			20101006MW-03V09N	20110406MW-03V09N	20110913MW03V09FD	20110913MW03V09N	MW04-5-20-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	04/06/11	09/13/11	09/13/11	05/20/03
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	238
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	1,820	3,780	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	520	510	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	1.6
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	6.2
Nitrogen, Nitrate	MG/L	10	NA	NA	0.1 U	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	5.1 J	34.0	19	18.2	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	27.1	26.7	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	17.6
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	0.76
Fluoride	MG/L	1.5	NA	NA	NA	NA	0.27
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0	0.00	NA	0.00	0.54
Ferrous Iron	MG/L	-	NA	NA	NA	29.8	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	5.9	NA
Oxidation-Reduction Potential	mV	-	-116	-115	NA	-124	-115
pH	S.U.	-	6.73	6.38	NA	6.85	NA
Specific Conductance	MS/CM	-	1.68	1.55	NA	1.99	1.61
Temperature	DEG C	-	20.19	11.90	NA	20.7	NA
Turbidity	NTU	-	6.3	3.6	NA	21.8	NA

*Criteria- 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			MW-04_121703	Dup1	MW-04	MW-04	MW-04VION
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	07/22/04	07/22/04	05/31/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Volatiles							
Acetone	UG/L	50	5.0 U	NA	NA	NA	NA
Benzene	UG/L	1	5.0 U	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	10 U	10 U	1.0 J	10 U
1,1-Dichloroethene	UG/L	5	2.0 U	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	5.0 U	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	5.0 U	NA	NA	NA	NA
Ethylbenzene	UG/L	5	4.0 U	NA	NA	NA	NA
2-Hexanone	UG/L	50	5.0 U	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	5.0 U	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	1.0 U	NA	NA	NA	NA
Trichloroethene	UG/L	5	1.0 U	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5.0 U	10 UJ	0.7 J	10 U	10 U
Vinyl Chloride	UG/L	2	5.0 U	NA	NA	NA	NA
Xylene (total)	UG/L	5	5.0 U	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	5.0 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	35	69	99	190	400
Total Metals							
Iron	UG/L	300	3,640	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	3,760	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			MW-04_121703	Dup1	MW-04	MW-04	MW-04VION
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/17/03	07/22/04	07/22/04	05/31/05	12/20/05
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)			
Miscellaneous Parameters							
Chloride	MG/L	250	294	158	161	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	1.2	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	1.9	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	NA	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	9.40	10.8	10.8	14.2	6.66
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	2.2	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	1.3	NA	NA	NA	NA
Fluoride	MG/L	1.5	0.19	0.304	0.302	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	NA	0.82	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	-	0 U	NA	-136	-126	-161
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.99	NA	1.05	1.85	1.47
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- 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			MW-04V15N	20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	08/01/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***					
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	0.7 J	0.6 J	10 U	1.0 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	10 U	10 U	10 U	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	10 U	10 U	10 U	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	420	400	43	5,700	290
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			MW-04V15N	20070207MW-04V10N	20070801MW-04V10N	20080228MW04V10N	20080812MW04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/14/06	02/07/07	08/01/07	02/28/08	08/12/08
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	7.0	5 U	5 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	-	4.97	4.73	0.41	2.91	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	-	-154	-81	-79.2	-136.0	-126
pH	S.U.	-	NA	NA	6.59	6.45	6.65
Specific Conductance	MS/CM	-	1.14	0.804	1.241	1.16	0.531
Temperature	DEG C	-	NA	NA	NA	9.19	21.3
Turbidity	NTU	-	NA	NA	NA	9	2

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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-04V08FD	20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/18/09	10/13/09	02/25/10	02/25/10
Parameter	**Units**	**Criteria***	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	1.0 J	1.0 J	15	6.6 J	7.7 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 U	10 U	1 U	1 UJ	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	10 U	10 U	1 U	1 U	1 U
Dissolved Gases							
Methane	UG/L	-	1,600	1,600	3,100	5,200	5,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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-04V08FD	20090218MW-04V08N	20091013MW-04V08N	20100225MW04V08FD	20100225MW-04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/18/09	02/18/09	10/13/09	02/25/10	02/25/10
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)			Field Duplicate (1-1)	
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	5 UJ	20.8	13	11.3
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	0.00	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	-158	-122	NA	-124
pH	S.U.	-	NA	6.33	6.43	NA	6.50
Specific Conductance	MS/CM	-	NA	1.75	1.83	NA	2.14
Temperature	DEG C	-	NA	9.36	19.37	NA	8.34
Turbidity	NTU	-	NA	4	4.6	NA	1.5

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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			20100624MW-04V08N	20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	04/06/11	09/13/11
Parameter	**Units**	**Criteria***			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	12	2.8	5 J	4.3 J	1.2
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 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	1 U	1 U	1 UJ	1 UJ	1 U
Dissolved Gases							
Methane	UG/L	-	4,000	2,400	4,200	4,300	1,700
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			20100624MW-04V08N	20101006MW-04V08N	20110406MW-04V08FD	20110406MW-04V08N	20110913MW04V08N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	04/06/11	09/13/11
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	18.4	5.5 J	26.6	22.3	16.7
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	-	0.80	0	NA	0.00	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	NA	14.3
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-146	-96	NA	-78	-126
pH	S.U.	-	8.99	6.86	NA	6.40	6.83
Specific Conductance	MS/CM	-	1.84	1.48	NA	2.19	2.29
Temperature	DEG C	-	18.45	21.38	NA	12.86	22.5
Turbidity	NTU	-	1.9	3.7	NA	0.0	0.2

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

Location ID			MW-05	MW-05	MW-05	MW-06	MW-06
Sample ID			MW05_52103	MW-05-121803	MW-05	MW06-6-10-03	MW06-7_22_03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/03	12/18/03	07/23/04	06/10/03	07/22/03
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	5.0 U	5.0 U	NA	10 U	5.0 U
Benzene	UG/L	1	5.0 U	5.0 U	NA	10 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	10 U	0 U	5.7 NJ
1,1-Dichloroethene	UG/L	5	2.0 U	2.0 U	NA	4 U	1.2 J
cis-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	NA	10 U	1.7 J
trans-1,2-Dichloroethene	UG/L	5	5.0 U	5.0 U	NA	10 U	5.0 U
Ethylbenzene	UG/L	5	4.0 U	4.0 U	NA	8 U	4.0 U
2-Hexanone	UG/L	50	5.0 U	5.0 U	NA	10 U	5.0 U
4-Methyl-2-Pentanone	UG/L	-	5.0 U	5.0 U	NA	10 U	5.0 U
Tetrachloroethene	UG/L	5	0.4 J	1.0 U	NA	2 U	1.0 U
Trichloroethene	UG/L	5	1.0 U	1.0 U	NA	2 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	5.0 U	5.0 U	0.5 J	220	180
Vinyl Chloride	UG/L	2	5.0 U	5.0 U	NA	10 U	1.2 J
Xylene (total)	UG/L	5	5.0 U	5.0 U	NA	10 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	5.0 U	5.0 U	10 U	8.8 J	9.5
Dissolved Gases							
Methane	UG/L	-	27	6.7	47	49	81
Total Metals							
Iron	UG/L	300	2,110	15,500	NA	14,400	10,500
Dissolved Metals							
Iron	UG/L	300	1,670	39.7 U	NA	14,300	10,300
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

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

Location ID			MW-05	MW-05	MW-05	MW-06	MW-06
Sample ID			MW05_52103	MW-05-121803	MW-05	MW06-6-10-03	MW06-7_22_03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/03	12/18/03	07/23/04	06/10/03	07/22/03
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	49.8	27.5	63.9	184	82.3
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.25	0.1 U	NA	0.19	0.33
Nitrogen, Kjeldahl, Total	MG/L	-	3.6	0.61	NA	0.72	1.1
Nitrogen, Nitrate	MG/L	10	0.22	0.18	NA	0.33	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	50.1	61.4	42.3	32.0	30.5
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	1.7	0.07	NA	14.3	8.6
Ferric Iron (lab)	MG/L	-	0.43	15.4	NA	0.12	1.9
Fluoride	MG/L	1.5	0 U	0.12	0.103	0.46	0.56
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.37	0 U	0.97	0.93	1.07
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	26	121	46	-145	-155
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.426	0.629	0.463	0.741	0.866
Temperature	DEG C	-	NA	NA	NA	NA	NA
Turbidity	NTU	-	NA	NA	NA	NA	NA

*Criteria- 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			MW06-091803	MW-06_121703	MW-06	Field-Dup	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/18/03	12/17/03	07/23/04	05/31/05	05/31/05
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Volatiles							
Acetone	UG/L	50	5.0 U	10 U	NA	NA	NA
Benzene	UG/L	1	5.0 U	10 U	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	5 J	6.0 J	5.0 J
1,1-Dichloroethene	UG/L	5	2.0 U	4 U	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	1.4 J	1.3 J	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	5.0 U	10 U	NA	NA	NA
Ethylbenzene	UG/L	5	4.0 U	8 U	NA	NA	NA
2-Hexanone	UG/L	50	5.0 U	10 U	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	5.0 U	10 U	NA	NA	NA
Tetrachloroethene	UG/L	5	1.0 U	2 U	NA	NA	NA
Trichloroethene	UG/L	5	1.0 U	2 U	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	97	250	140 J	1.0 J	1.0 J
Vinyl Chloride	UG/L	2	5.0 U	10 U	NA	NA	NA
Xylene (total)	UG/L	5	5.0 U	10 U	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	8.6	14	23	16	14
Dissolved Gases							
Methane	UG/L	-	99	78	40	3,600	3,300
Total Metals							
Iron	UG/L	300	8,370 J	7,690	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	8,470 J	7,670	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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			MW06-091803	MW-06_121703	MW-06	Field-Dup	MW-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/18/03	12/17/03	07/23/04	05/31/05	05/31/05
Parameter	**Units**	**Criteria***				Field Duplicate (1-1)	
Miscellaneous Parameters							
Chloride	MG/L	250	74.6	84.0	60.5	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.31	0.36	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	0.88	0.79	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	0.1 U	0.1 UJ	NA	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	39.2	39.1	33.5	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	6.0	8.7	NA	NA	NA
Ferric Iron (lab)	MG/L	-	8.4	1.0 U	NA	NA	NA
Fluoride	MG/L	1.5	0.37	0.42	0.467	NA	NA
Oil & Grease	MG/L	-	5 U	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0 U	0 U	1.04	NA	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	-	-143	-110	-64	NA	-140
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	0.581	0.602	0.513	NA	1.13
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-06V15FD	MW-06V15N	MW-06V15FD	MW-06V15N	20070207MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	12/20/05	08/15/06	08/15/06	02/07/07
Parameter	**Units**	**Criteria***	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	6.0 J	10 U	10 U	100
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 U	10 U	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	10 UJ	10 UJ	10 U	10 U	8.0 J
Dissolved Gases							
Methane	UG/L	-	6,700	5,600	1,600	1,700	12,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	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-06V15FD	MW-06V15N	MW-06V15FD	MW-06V15N	20070207MW-06V15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			12/20/05	12/20/05	08/15/06	08/15/06	02/07/07
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)		Field Duplicate (1-1)		Field Duplicate (1-1)
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	7.40
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	6.83	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	87	NA
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	NA	1.29	NA	0.033	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			20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	07/31/07	07/31/07	02/28/08	02/28/08
Parameter	**Units**	**Criteria***		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	100	18	21	8.0 J	8.0 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	3.0 J	10 U	10 U	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	8.0 J	0.5 J	0.6 J	10 U	10 U
Dissolved Gases							
Methane	UG/L	-	13,000	3,800	2,500	12,000	14,000
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	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			20070207MW-06V15N	20070731MW-06V15FD	20070731MW-06V15N	20080228MW06V15FD	20080228MW06V15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/07	07/31/07	07/31/07	02/28/08	02/28/08
Parameter	**Units**	**Criteria***		Field Duplicate (1-1)		Field Duplicate (1-1)	
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	7.00	41.8	44.2	5 U	5 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	-	1.05	NA	0.31	NA	2.61
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-136	NA	-99.7	NA	-122.0
pH	S.U.	-	NA	NA	6.38	NA	6.24
Specific Conductance	MS/CM	-	0.79	NA	1.050	NA	1.21
Temperature	DEG C	-	NA	NA	NA	NA	12.2
Turbidity	NTU	-	NA	NA	NA	NA	9

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

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/19/09	10/13/09	02/26/10	06/24/10
Parameter	**Units**	**Criteria***					
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	4.0 J	34	6.4	35 J	68 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	2.0 J	1 U	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	35	1 U	3.6	0.57 J
Dissolved Gases							
Methane	UG/L	-	12,000	9,000	7,300	13,000	9,400
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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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HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FORMER EMCA SITE, MAMARONECK, NEW YORK

Location ID			MW-06	MW-06	MW-06	MW-06	MW-06
Sample ID			20080812MW06V13N	20090219MW-06V13N	20091013MW-06V13N	20100226MW-06V13N	20100624MW-06V13N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/19/09	10/13/09	02/26/10	06/24/10
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	17.8	57.0 J	2.8 J	31.2	52.3
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	0.00	0.00	0.73
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-117	-132	-139	-140	-124
pH	S.U.	-	6.37	6.30	6.57	6.46	8.81
Specific Conductance	MS/CM	-	1.47	0.84	1.79	2.48	0.958
Temperature	DEG C	-	17.0	13.23	17.80	11.80	17.79
Turbidity	NTU	-	5	8	2.2	39	0.45

*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

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D - Diluted analysis.

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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-07
Sample ID			20101006MW-06V13FD	20101006MW-06V13N	20110406MW-06V13N	20110913MW06V13N	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	10/06/10	04/06/11	09/13/11	06/10/03
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatiles							
Acetone	UG/L	50	NA	NA	NA	NA	250 U
Benzene	UG/L	1	NA	NA	NA	NA	250 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5	61	57	96 J	30	0 U
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA	100 U
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	250 U
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA	250 U
Ethylbenzene	UG/L	5	NA	NA	NA	NA	200 U
2-Hexanone	UG/L	50	NA	NA	NA	NA	250 U
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA	250 U
Tetrachloroethene	UG/L	5	NA	NA	NA	NA	50 U
Trichloroethene	UG/L	5	NA	NA	NA	NA	50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1 U	1 U	33	1 U	5,400
Vinyl Chloride	UG/L	2	NA	NA	NA	NA	250 U
Xylene (total)	UG/L	5	NA	NA	NA	NA	250 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1 U	1 U	38 J	4.4	68 J
Dissolved Gases							
Methane	UG/L	-	8,300	8,800	7,900	1,800	740
Total Metals							
Iron	UG/L	300	NA	NA	NA	9,630	21,300
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	20,800
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	388	NA

*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

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D - Diluted analysis.

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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-07
Sample ID			20101006MW-06V13FD	20101006MW-06V13N	20110406MW-06V13N	20110913MW06V13N	MW07-6-10-03
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			10/06/10	10/06/10	04/06/11	09/13/11	06/10/03
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	140
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	353,000 J	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	235	NA
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA	0.39
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA	1.2
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA	NA
Sulfate	MG/L	250	36.8 J	34.5 J	60.8	16.5	32.8
Total Organic Carbon	MG/L	-	NA	NA	NA	10.9	NA
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA	20.2
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA	1
Fluoride	MG/L	1.5	NA	NA	NA	NA	0.33
Oil & Grease	MG/L	-	NA	NA	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	NA	0	0.00	0.00	0.9
Ferrous Iron	MG/L	-	NA	NA	NA	7.4	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	2.23	NA
Oxidation-Reduction Potential	mV	-	NA	-129	-68	-123	-130
pH	S.U.	-	NA	6.97	7.08	7.08	NA
Specific Conductance	MS/CM	-	NA	0.879	1.61	0.801	0.93
Temperature	DEG C	-	NA	18.25	12.46	22.4	NA
Turbidity	NTU	-	NA	0	0.0	5.3	NA

*Criteria- 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 Criteria

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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-07	MW-07	MW-07	MW-07	MW-07
Sample ID			MW07	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	**Units**	**Criteria***					
Volatiles							
Acetone	UG/L	50	500 U	250 U	50 U	NA	NA
Benzene	UG/L	1	500 U	250 U	14	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	0 U	0 U	0 U	210	140
1,1-Dichloroethene	UG/L	5	68 J	100 U	20 U	NA	NA
cis-1,2-Dichloroethene	UG/L	5	500 U	250 U	50 U	NA	NA
trans-1,2-Dichloroethene	UG/L	5	500 U	250 U	50 U	NA	NA
Ethylbenzene	UG/L	5	400 U	200 U	49	NA	NA
2-Hexanone	UG/L	50	500 U	250 U	50 U	NA	NA
4-Methyl-2-Pentanone	UG/L	-	500 U	250 U	50 U	NA	NA
Tetrachloroethene	UG/L	5	100 U	50 U	10 U	NA	NA
Trichloroethene	UG/L	5	100 U	50 U	10 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	8,500	6,100	370	110 J	10 U
Vinyl Chloride	UG/L	2	500 U	250 U	50 U	NA	NA
Xylene (total)	UG/L	5	500 U	250 U	50 U	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	130 J	130 J	940	50	2.0 J
Dissolved Gases							
Methane	UG/L	-	420	1,200	1,700	2,500	5,900
Total Metals							
Iron	UG/L	300	21,200	32,700 J	38,900	NA	NA
Dissolved Metals							
Iron	UG/L	300	20,800	32,500 J	38,900	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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	MW07-91703	MW-07_121703	MW-07	MW-07
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			07/23/03	09/17/03	12/17/03	07/22/04	05/31/05
Parameter	**Units**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	168	300 J	328	303	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	NA	NA
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA
Nitrogen, Ammonia (As N)	MG/L	2	0.6	0.66	0.99	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	1.8	2.1	2.8	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	0.1 U	0.1 U	NA	NA
Nitrogen, Nitrate-Nitrite	MG/L	10	0.1 UJ	NA	NA	NA	NA
Sulfate	MG/L	250	31.0	23.6	5.0 U	5.0 U	5.0 U
Total Organic Carbon	MG/L	-	NA	NA	NA	NA	NA
Ferrous Iron (field)	MG/L	-	19.8	33.8	19.5	NA	NA
Ferric Iron (lab)	MG/L	-	1.4	14.1	19.4	NA	NA
Fluoride	MG/L	1.5	0.25	0.24	0.19	0.190	NA
Oil & Grease	MG/L	-	NA	5.44 U	NA	NA	NA
Field Parameter							
Dissolved Oxygen	MG/L	-	0.1	0 U	3.33	0.88	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	-	-108	-118	-115	-153	-152
pH	S.U.	-	NA	NA	NA	NA	NA
Specific Conductance	MS/CM	-	1.11	1.44	1.94	1.69	1.75
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	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N
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**	**Criteria***					
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	47	97	89	82	92
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 U	6.0 J	10 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	10 U	1.0 J	3.0 J	10	0.9 J
Dissolved Gases							
Methane	UG/L	-	9,700	6,900	6,200	4,100	7,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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	MW-07V15N	20070207MW-07V15N	20070731MW-07V15N	20080228MW07V15N
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**	**Criteria***					
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	19.3	5.0 U	6.1	5 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	-	0 U	3.47	2.89	0.48	2.64
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-169	-163	-121	-113.5	-137.0
pH	S.U.	-	NA	NA	NA	6.78	6.32
Specific Conductance	MS/CM	-	1.65	1.44	2.02	2.182	1.62
Temperature	DEG C	-	NA	NA	NA	NA	9.03
Turbidity	NTU	-	NA	NA	NA	NA	54

*Criteria- 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-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N	20100225MW-07RV15N	20100624MW-07RV15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	02/25/10	06/24/10
Parameter	**Units**	**Criteria***					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	170	150	370 D	150 J	350 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	3.0 J	46	580 D	18 J	1.1 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	16	20	76	8.1	1.7 J
Dissolved Gases							
Methane	UG/L	-	5,600	11,000	5,900	6,500	8,100
Total Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Dissolved Metals							
Iron	UG/L	300	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	NA	NA

*Criteria- 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-07R	MW-07R	MW-07R
Sample ID			20080812MW07V09N	20090218MW-07V09N	20091013MW-07RV15N	20100225MW-07RV15N	20100624MW-07RV15FD
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/08	02/18/09	10/13/09	02/25/10	06/24/10
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Miscellaneous Parameters							
Chloride	MG/L	250	NA	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/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	5.6	5 UJ	6.3	7.9	17
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	0.00	0.00	NA
Ferrous Iron	MG/L	-	NA	NA	NA	NA	NA
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	NA	NA
Oxidation-Reduction Potential	mV	-	-167	-154	-139	-146	NA
pH	S.U.	-	6.48	6.18	6.45	6.52	NA
Specific Conductance	MS/CM	-	1.99	2.01	2.74	2.79	NA
Temperature	DEG C	-	17.3	12.11	18.36	10.69	NA
Turbidity	NTU	-	25	21	1.1	1.1	NA

*Criteria- 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
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***				
Volatiles						
Acetone	UG/L	50	NA	NA	NA	NA
Benzene	UG/L	1	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	UG/L	50	NA	NA	NA	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	5	390	350	370 J	26
1,1-Dichloroethene	UG/L	5	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	5	NA	NA	NA	NA
Ethylbenzene	UG/L	5	NA	NA	NA	NA
2-Hexanone	UG/L	50	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	-	NA	NA	NA	NA
Tetrachloroethene	UG/L	5	NA	NA	NA	NA
Trichloroethene	UG/L	5	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5	1	53 J	18	1.6
Vinyl Chloride	UG/L	2	NA	NA	NA	NA
Xylene (total)	UG/L	5	NA	NA	NA	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5	1.8	9.5	6.3 J	0.94 J
Dissolved Gases						
Methane	UG/L	-	8,400	6,200	8,300	2,000
Total Metals						
Iron	UG/L	300	NA	NA	NA	23,600
Dissolved Metals						
Iron	UG/L	300	NA	NA	NA	NA
Miscellaneous Parameters						
Alkalinity, Total (as CaCO3)	MG/L	-	NA	NA	NA	406

*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 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-07R	MW-07R	MW-07R	MW-07R
Sample ID			20100624MW-07RV15N	20101006MW-07RV15N	20110406MW-07RV15N	20110913MW07RV15N
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			06/24/10	10/06/10	04/06/11	09/13/11
Parameter	**Units**	**Criteria***				
Miscellaneous Parameters						
Chloride	MG/L	250	NA	NA	NA	NA
Dehalococcoides ethenogenes	CEQ/mL	-	NA	NA	NA	248
Hardness (as CaCO3)	MG/L	-	NA	NA	NA	637
Nitrogen, Ammonia (As N)	MG/L	2	NA	NA	NA	NA
Nitrogen, Kjeldahl, Total	MG/L	-	NA	NA	NA	NA
Nitrogen, Nitrate	MG/L	10	NA	NA	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	10	NA	NA	NA	NA
Sulfate	MG/L	250	11.2	13 J	25.8	12.2
Total Organic Carbon	MG/L	-	NA	NA	NA	11.3
Ferrous Iron (field)	MG/L	-	NA	NA	NA	NA
Ferric Iron (lab)	MG/L	-	NA	NA	NA	NA
Fluoride	MG/L	1.5	NA	NA	NA	NA
Oil & Grease	MG/L	-	NA	NA	NA	NA
Field Parameter						
Dissolved Oxygen	MG/L	-	0.69	4.05	0.00	0.00
Ferrous Iron	MG/L	-	NA	NA	NA	20.1
Ferric Iron (calculated)	MG/L	-	NA	NA	NA	3.5
Oxidation-Reduction Potential	mV	-	-129	-113	-83	-109
pH	S.U.	-	8.83	6.82	6.39	6.86
Specific Conductance	MS/CM	-	2.09	2.03	3.40	3.28
Temperature	DEG C	-	16.45	21.42	12.08	22.4
Turbidity	NTU	-	0.35	14.3	0.0	0.1

*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 UJ - Not detected above the estiamted quantitation limit

D - Diluted analysis.

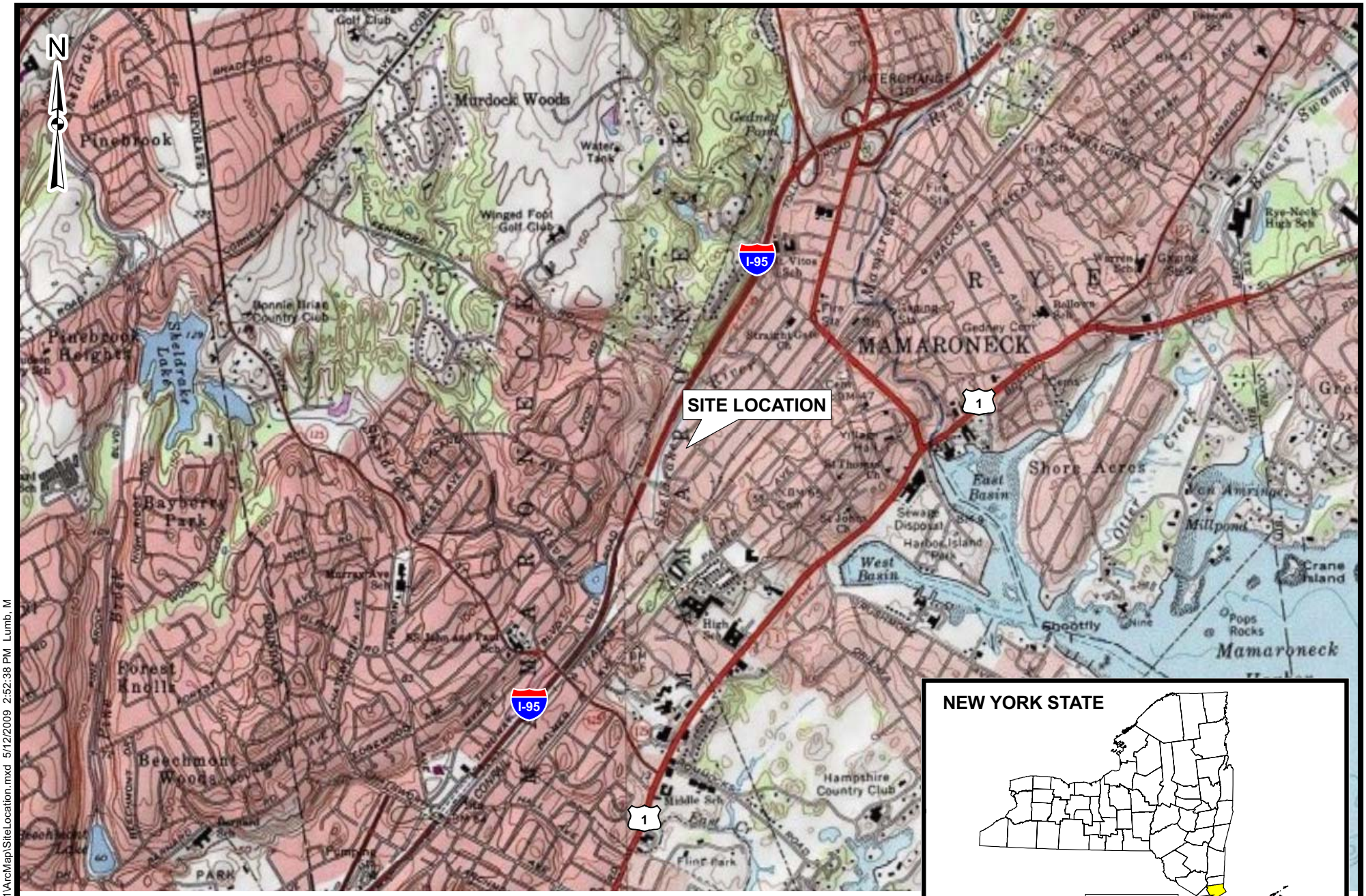
J (or B for Inorganics) - Analyte is reported below the PQL at an estimated concentration. NJ - Presumptive evidence that compound is present.

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

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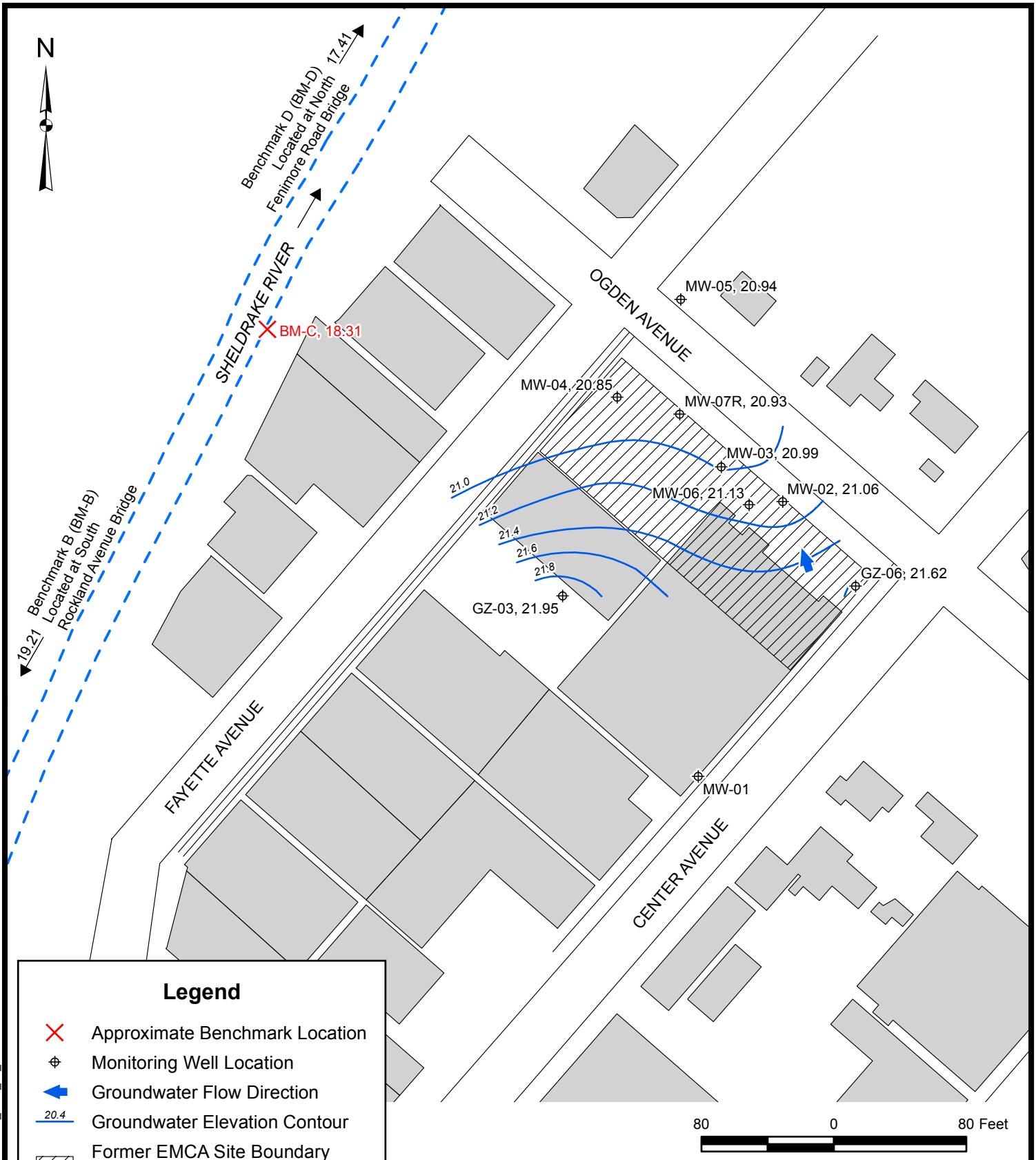

NOTES:
(1) Well MW-07 was replaced by well MW-07R on September 3, 2009.
(2) Benchmark C was originally established as a temporary benchmark off a tree branch overhanging the Sheldrake River between the north and south bridges. The approximate water surface elevation for this benchmark is now calculated by taking the average water surface elevation of Benchmark B and Benchmark D.
(3) Well MW-01 could not be located.

URS

GROUNDWATER ELEVATION MAP
(SEPTEMBER 13, 2011)

FIGURE 2

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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
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
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
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

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
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
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
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

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
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
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
Chlorotrifluoroethene (Freon-1113)	ND	ND	ND	ND	210	140	47	97	89	82	92	170	150	370	150 J	390	350	370J	26

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
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
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
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

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
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
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
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

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

URS

FIGURE 3

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

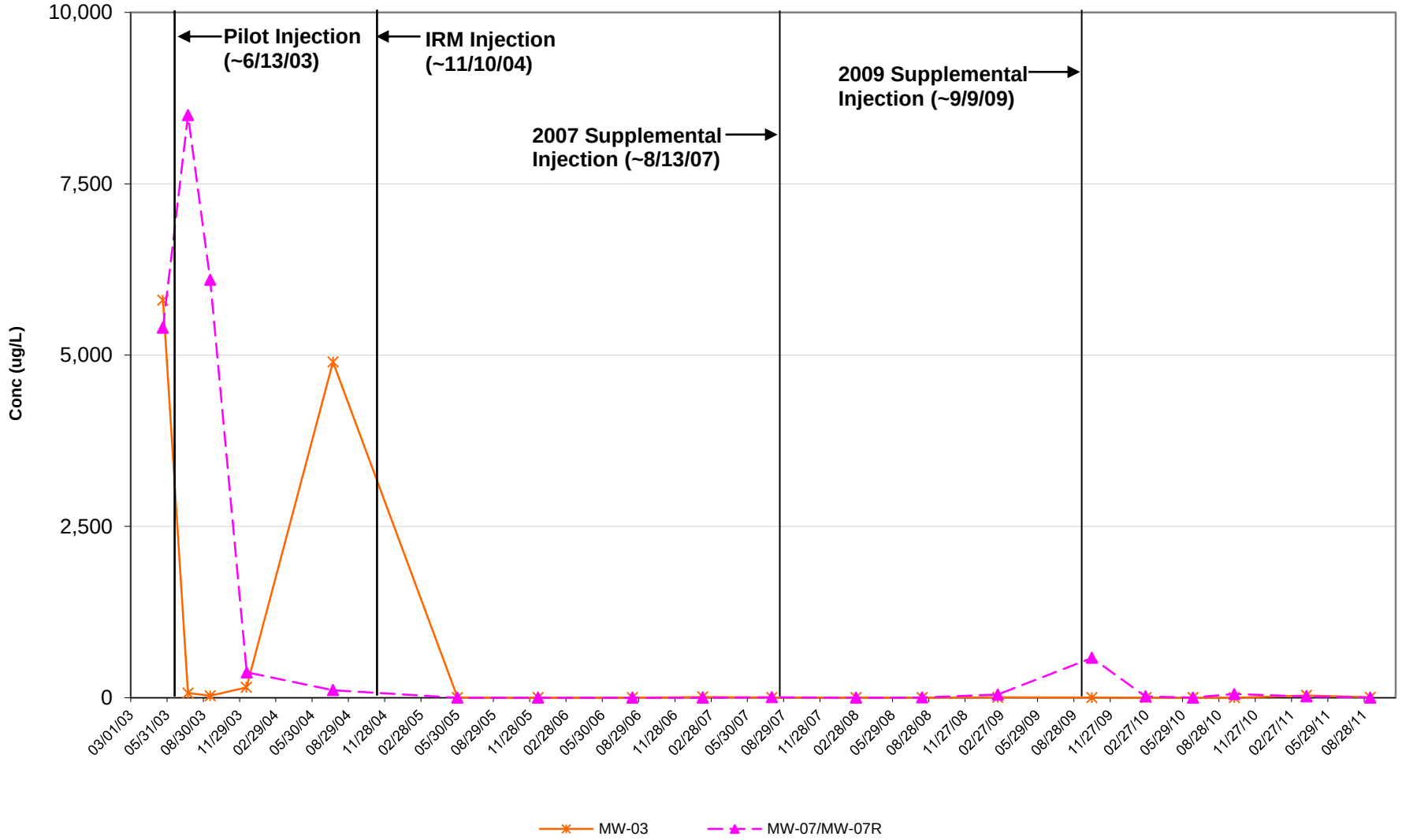

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FIGURE 5
FORMER EMCA SITE
Freon 113 Concentrations, GZ-06, MW-02, and MW-06

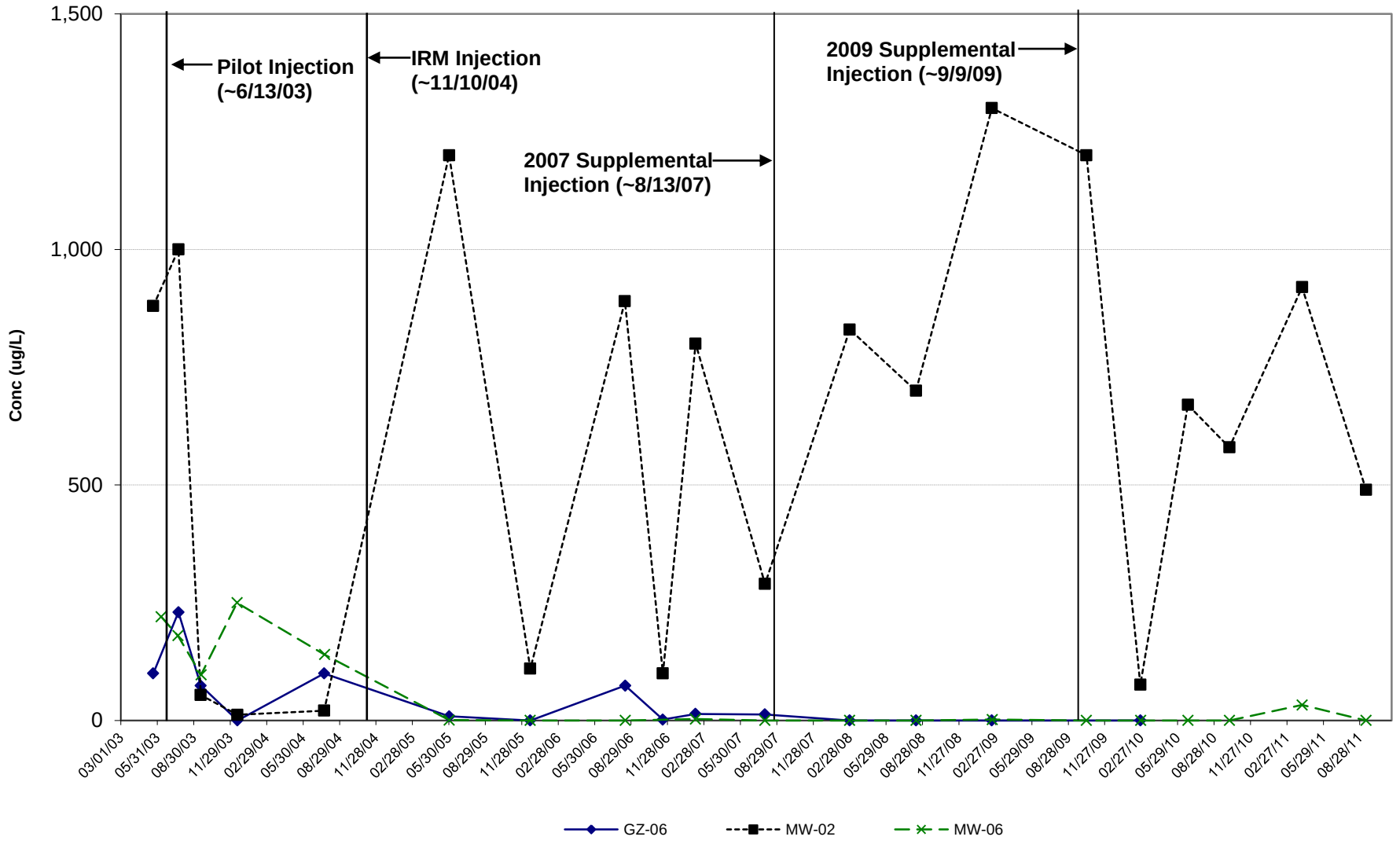

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FIGURE 6
FORMER EMCA SITE
Freon 123a Concentrations

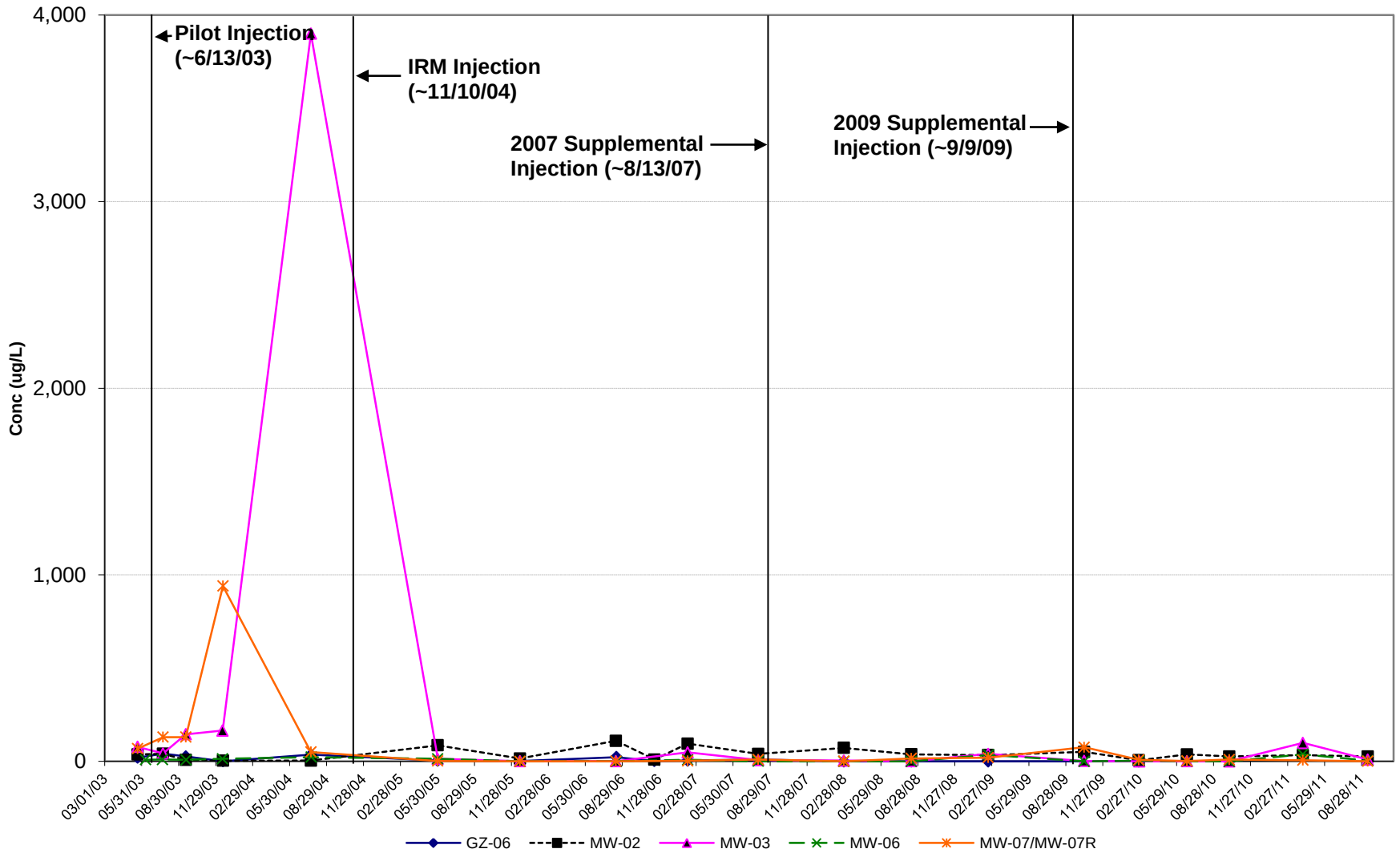

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FIGURE 7
FORMER EMCA SITE
Freon 1113 Concentrations

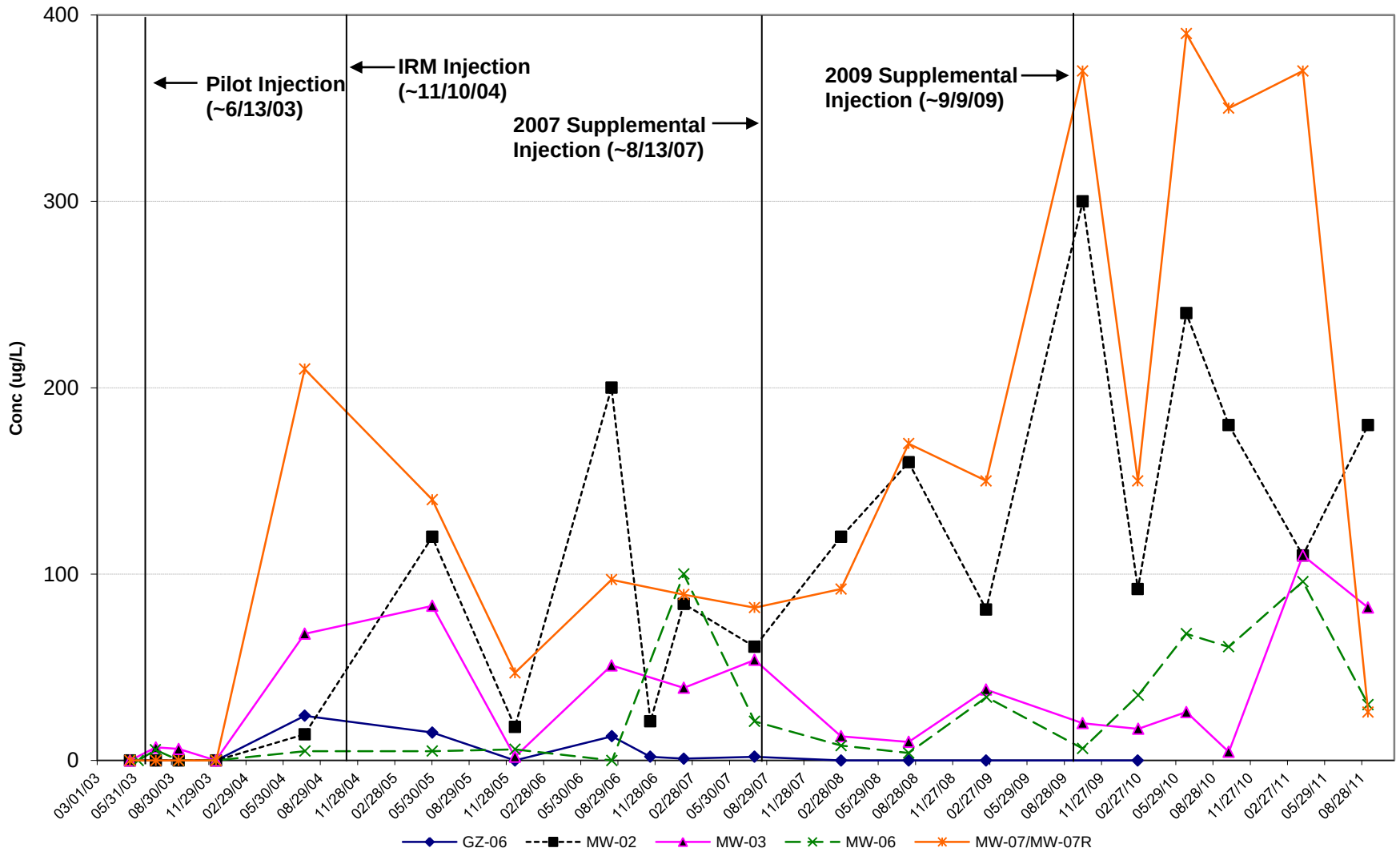

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FIGURE 8
FORMER EMCA SITE
Sulfate Concentrations

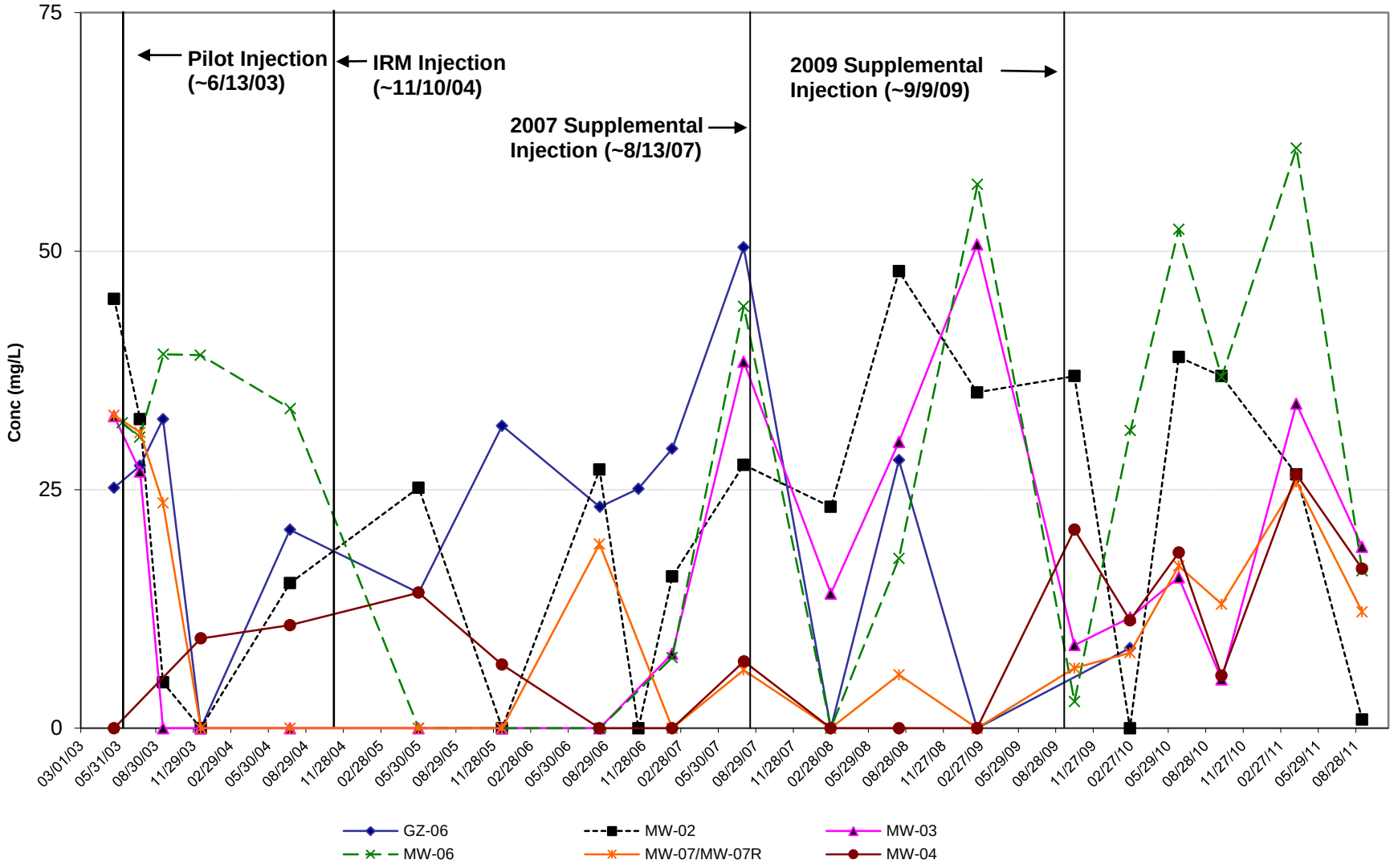

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FIGURE 9
FORMER EMCA SITE
Methane Concentrations

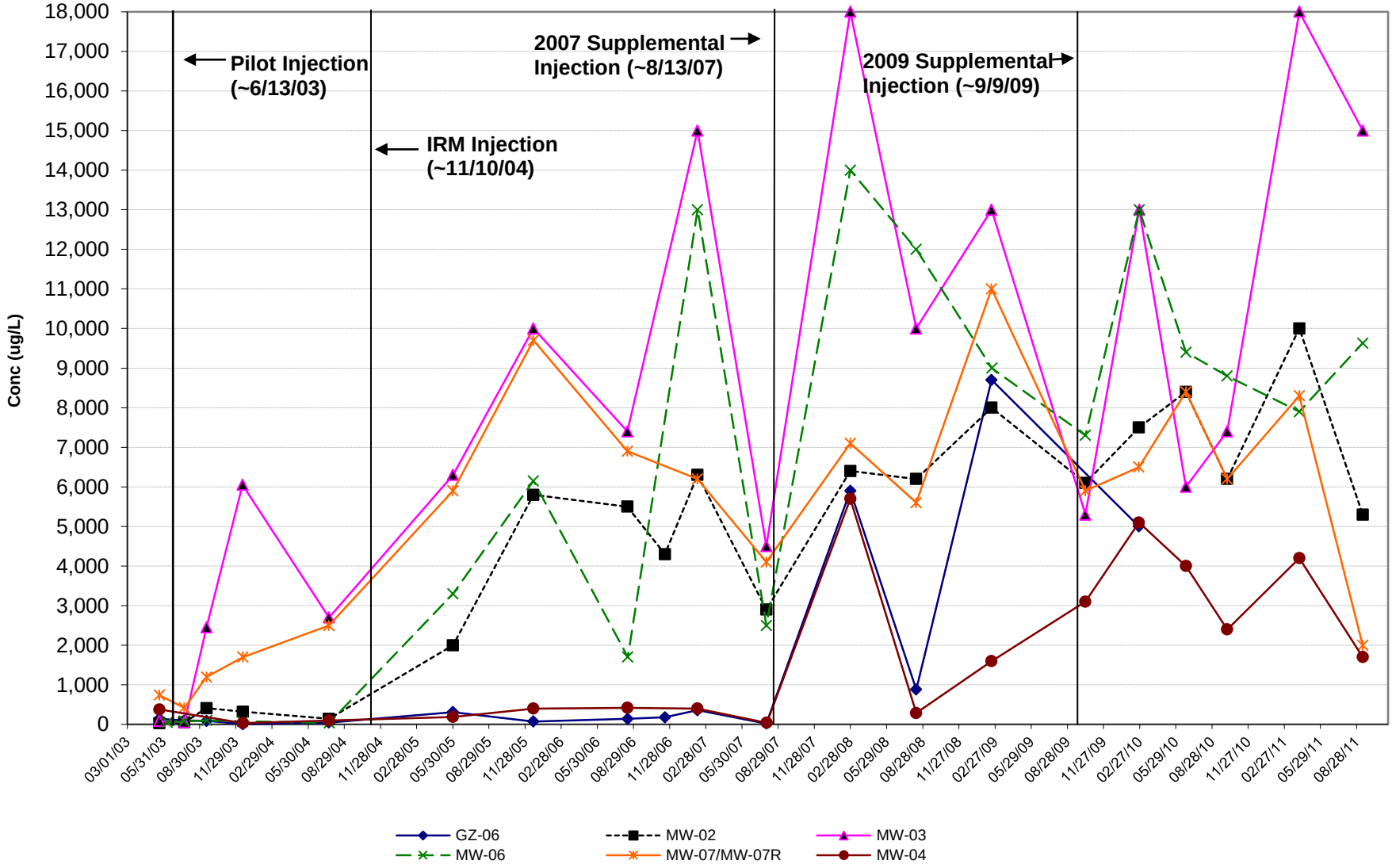

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FIGURE 10
FORMER EMCA SITE
Dissolved Oxygen Concentrations

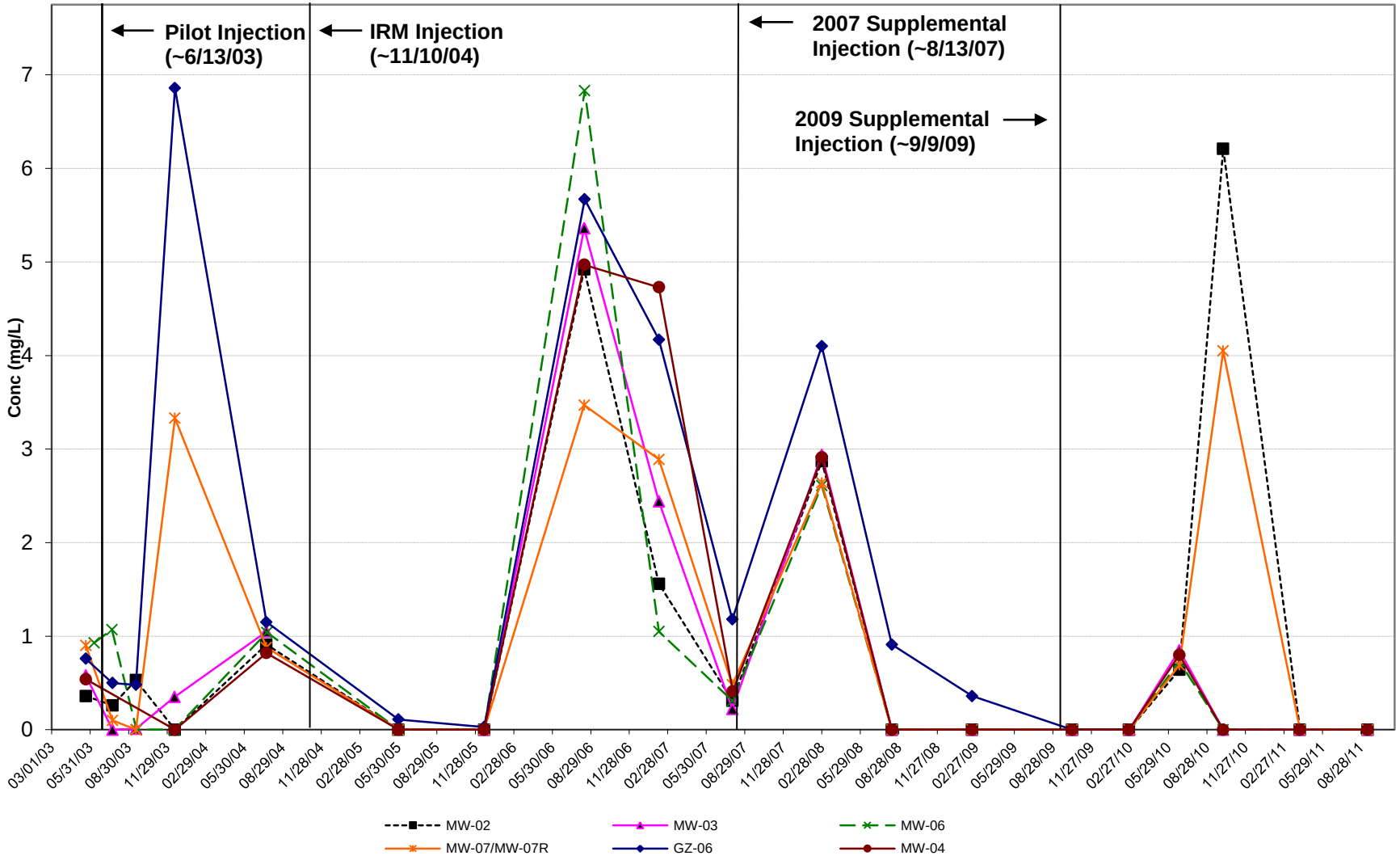

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FIGURE 11
FORMER EMCA SITE
Oxidation-Reduction Potential

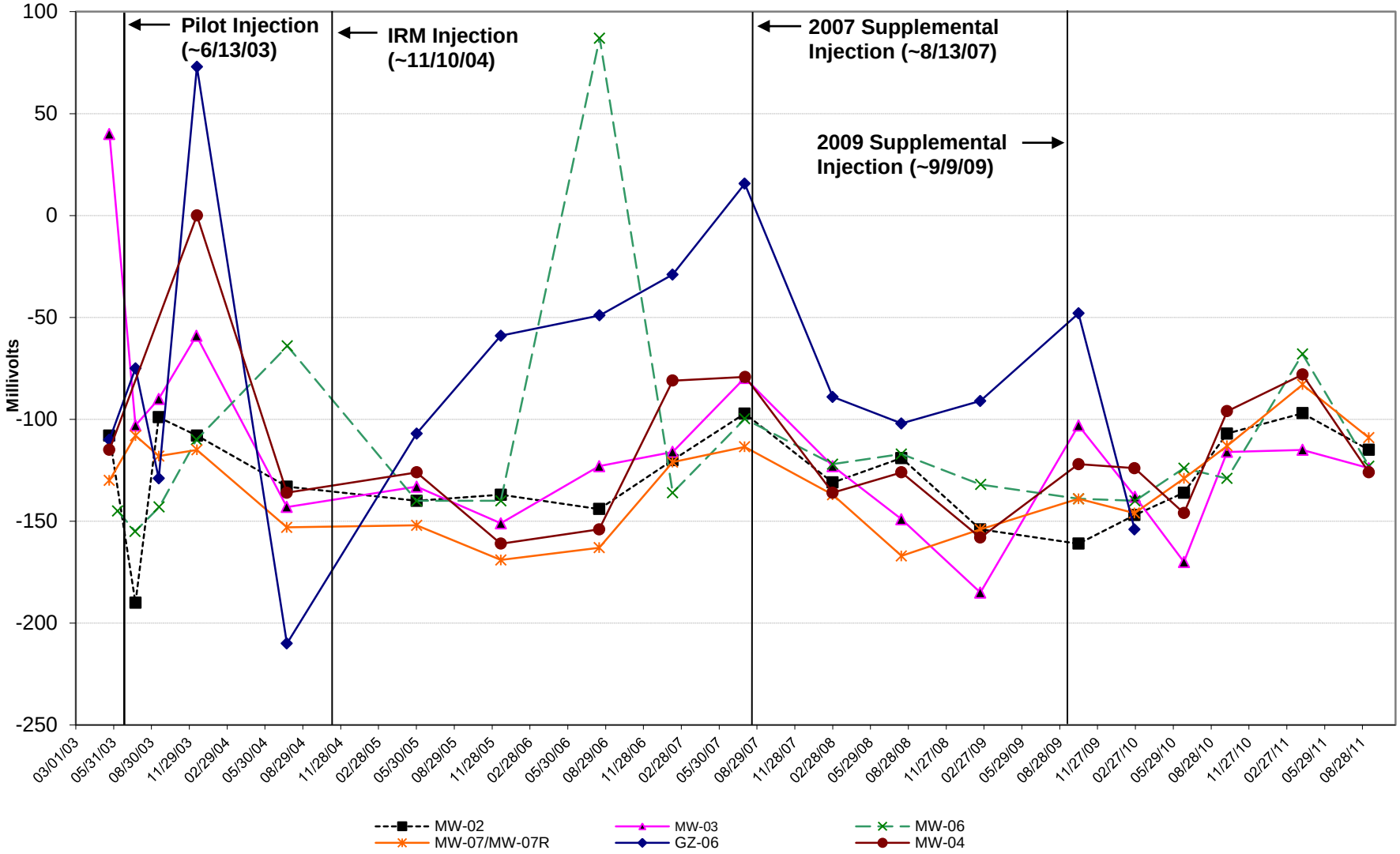

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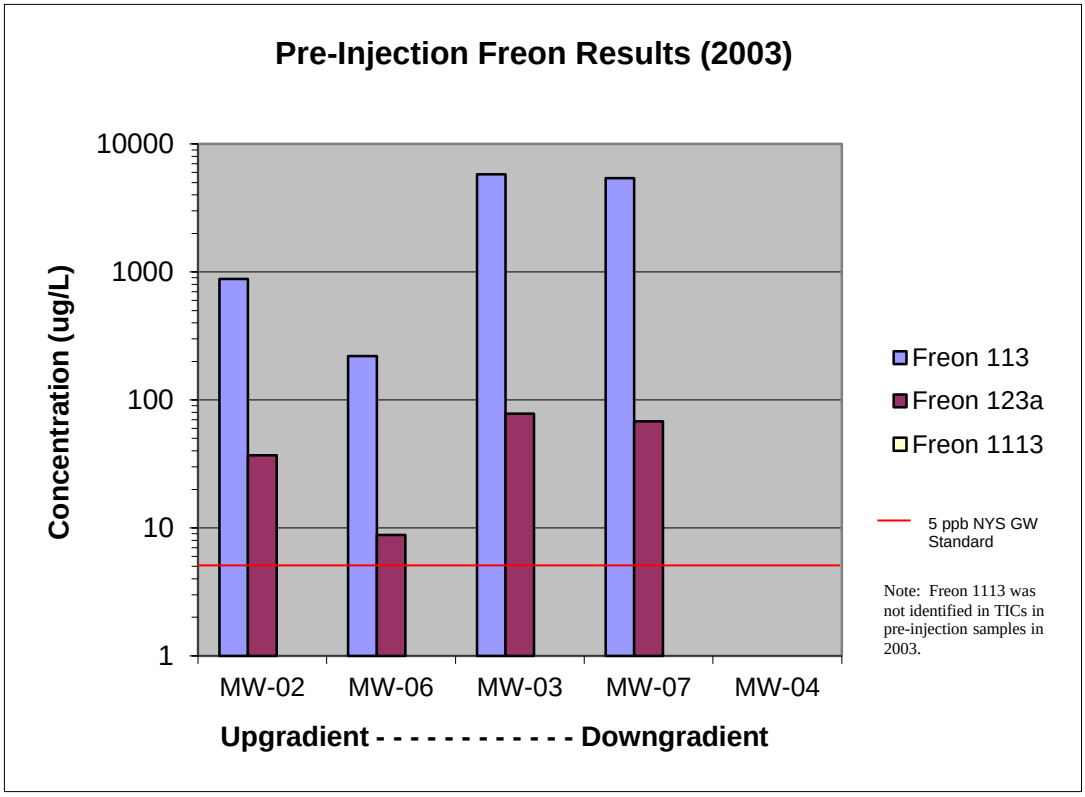
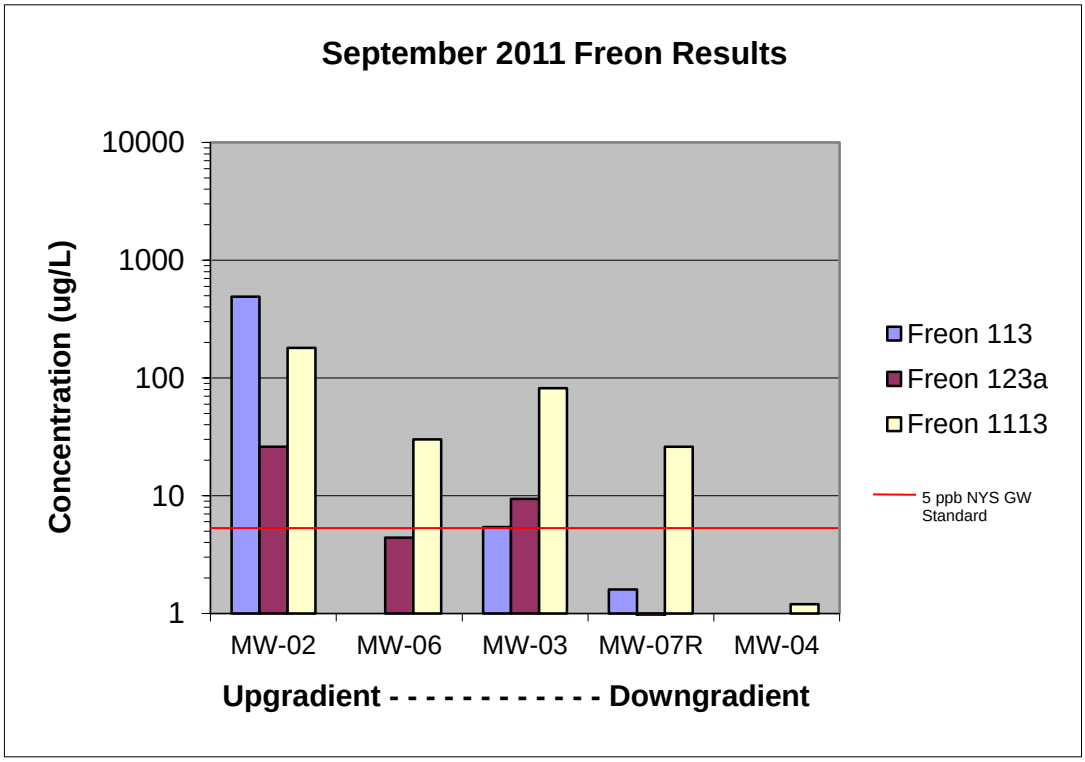
FIGURE 12
FORMER EMCA SITE - FREON CONCENTRATIONS
PRE-INJECTION AND CURRENT RESULTS





APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-02

Date: 9/13/2011 Sampling Personnel: Steven Moeller 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: 4.57' Depth to Well Bottom: 11.69' Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 1.10 Estimated Purge Volume (liters): 28

Sample ID: 20110913MW02V08N Sample Time: 1310 QA/QC: none

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Iron; Hardness; TOC; Alkalinity; Nitrate; Dehalococcoides

Field Ferrous Iron (Hach DR/890 Colorimeter & Ferrous Iron AccuVac Ampules) = 50.6 mg/L

Notes: Clear, very slight sulfury odor

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)
1210	6.93	27.7	3.47	0.85	15.2	-126	500	4.70
1215	6.92	23.2	3.74	0.00	16.2	-130	530	4.67
1220	6.91	23.5	3.67	0.00	4.4	-131	455	4.67
1225	6.89	23.8	3.61	0.00	1.2	-130	450	4.68
1230	6.87	23.6	3.57	0.00	0.4	-129	450	4.69
1235	6.85	23.5	3.52	0.00	10.1	-127	450	4.69
1240	6.84	23.2	3.46	0.00	1.0	-125	480	4.70
1245	6.85	23.1	3.39	0.00	0.1	-123	450	4.69
1250	6.83	23.1	3.33	0.00	0.1	-122	450	4.69
1255	6.82	22.3	3.32	0.00	0.1	-120	460	4.69
1300	6.81	22.5	3.24	0.00	0.1	-118	450	4.70
1305	6.81	22.3	3.23	0.00	0.1	-117	450	4.69
1310	6.80	22.1	3.24	0.00	0.1	-115	460	4.70
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: Rohm and Haas - Former EMCA Site | Site: Former EMCA Site | Well I.D.: MW-03

Date: 9/13/2011 | Sampling Personnel: Steven Moeller | 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:	4.60'	Depth to Well Bottom:	14.25'	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	1.49		Estimated Purge Volume (liters):	16	

Sample ID: 20110913MW03V09N and 20110913MW03V09FD | Sample Time: 1750 | QA/QC: Field Duplicate

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Iron; Hardness; TOC; Alkalinity; Nitrate; Dehalococcoides

Field Ferrous Iron (Hach DR/890 Colorimeter & Ferrous Iron AccuVac Ampules) = 29.8 mg/L

Notes: Clear

Truck parked over well during sampling, unable to get vehicle moved

PURGE PARAMETERS

TIME	pH	TEMP (^{o}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1710	6.93	27.7	2.14	1.21	9.5	-100	425	4.82
1715	6.86	23.7	1.98	0.00	31.1	-112	420	4.85
1720	6.84	21.9	2.08	0.00	30.5	-117	415	4.85
1725	6.83	20.7	2.06	0.00	22.0	-119	405	4.86
1730	6.86	20.3	2.06	0.00	22.9	-122	400	4.86
1735	6.85	20.7	2.05	0.00	25.2	-121	410	4.87
1740	6.87	20.7	2.03	0.00	23.6	-122	410	4.87
1745	6.85	20.7	1.98	0.00	22.1	-123	410	4.88
1750	6.85	20.7	1.99	0.00	21.8	-124	410	4.87
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: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-04

Date: 9/13/2011 Sampling Personnel: Steven Moeller 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: 4.46' Depth to Well Bottom: 11.64' Well Diameter: 1" Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 1.11 Estimated Purge Volume (liters): 15

Sample ID: 20110913MW04V08N and 20110913MW04V08MS and 20110913MW04V08SD Sample Time: 0930 QA/QC: MS/MSD

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

Field Ferrous Iron (Hach DR/890 Colorimeter & Ferrous Iron AccuVac Ampules) = 14.3 mg/L

Notes: Clear, strong sulfury odor

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)
0855	6.67	22.6	2.23	0.00	1.8	-105	460	4.65
0900	6.80	22.4	2.36	0.00	1.5	-122	425	4.67
0905	6.82	22.4	2.34	0.00	0.4	-124	430	4.66
0910	6.88	22.4	2.33	0.00	0.4	-124	425	4.66
0915	6.83	22.4	2.32	0.00	0.2	-125	420	4.66
0920	6.83	22.4	2.31	0.00	0.2	-125	425	4.66
0925	6.83	22.5	2.30	0.00	0.1	-126	425	4.66
0930	6.83	22.5	2.29	0.00	0.2	-126	420	4.66
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: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-06

Date: 9/13/2011 Sampling Personnel: Steven Moeller 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:	4.64'	Depth to Well Bottom:	18.55'	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	2.14		Estimated Purge Volume (liters):	33	

Sample ID: 20110913MW06V13N Sample Time: 1505 QA/QC: --

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Iron; Hardness; TOC; Alkalinity; Nitrate; Dehalococcoides

Field Ferrous Iron (Hach DR/890 Colorimeter & Ferrous Iron AccuVac Ampules) = 7.4 mg/L

Notes: During the well purging, a vendor loaded the adjacent rolloff dumpster and a significant volume of water came out of the back of the dumpster. A small portion of the water (less than 1 liter) flowed into well MW-06.

PURGE PARAMETERS

TIME	pH	TEMP (^{o}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1350	7.18	25.2	0.786	1.17	5.1	-83	450	4.86
1355	7.08	23.1	0.792	0.00	7.1	-105	500	4.89
1400	7.08	23.0	0.795	0.00	4.8	-111	450	4.88
1405	7.10	23.1	0.801	0.00	4.1	-115	450	4.88
1410	7.08	22.9	0.796	0.00	4.6	-115	455	4.88
A small volume of water discharged during rolloff dumpster changeout flowed into well								
1425	7.07	22.9	0.826	0.00	19.8	-108	480	4.87
1430	7.07	22.6	0.832	0.00	15.1	-113	500	4.90
1435	7.07	22.1	0.836	0.00	12.8	-114	470	4.88
1440	7.07	22.1	0.827	0.00	9.8	-115	480	4.89
1445	7.07	22.1	0.814	0.00	7.4	-117	470	4.89
1450	7.06	22.6	0.806	0.00	6.3	-118	480	4.89
1455	7.07	22.4	0.805	0.00	5.0	-119	480	4.89
1500	7.08	22.4	0.806	0.00	5.3	-121	480	4.89
1505	7.08	22.4	0.801	0.00	5.3	-123	475	4.89
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: Rohm and Haas - Former EMCA Site Site: Former EMCA Site Well I.D.: MW-07R

Date: 9/13/2011 Sampling Personnel: Steven Moeller 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:	4.70'	Depth to Well Bottom:	19.85'	Well Diameter:	1"	Screen Length:	10'
Casing Type:	PVC			Volume in 1 Well Casing (liters):	2.33		Estimated Purge Volume (liters):	13	

Sample ID: 20110913MW07RV15N Sample Time: 1115 QA/QC: none

Sample Parameters: Freon 113, 1113, 123a; Methane; Sulfate; Iron; Hardness; TOC; Alkalinity; Nitrate; Dehalococcoides

Field Ferrous Iron (Hach DR/890 Colorimeter & Ferrous Iron AccuVac Ampules) = 20.1 mg/L

Notes: Clear, slight sulfury odor

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)
1045	6.94	23.5	3.05	1.36	0.3	-95	450	4.86
1050	6.88	23.3	3.23	0.00	0.1	-101	460	4.86
1055	6.87	22.4	3.30	0.00	0.1	-104	440	4.85
1100	6.87	22.5	3.28	0.00	0.1	-107	420	4.85
1105	6.86	22.5	3.27	0.00	0.1	-107	425	4.85
1110	6.85	22.4	3.27	0.00	0.1	-108	425	4.84
1115	6.86	22.4	3.28	0.00	0.1	-109	430	4.85
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 $_{cyl} = \pi r^2 h$)

APPENDIX B

DATA USABILITY SUMMARY REPORT

APPENDIX B

DATA USABILITY SUMMARY REPORT

SEPTEMBER 2011 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

NOVEMBER 2011

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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 13, 2011, as summarized on Table B-1. Note, sample 20110913MW-04V08N was not analyzed for all parameters. The samples were collected as part of the semi-annual groundwater monitoring event at the Former EMCA Site located in Mamaroneck, New York.

II. ANALYTICAL METHODOLOGIES

The groundwater samples were analyzed by TestAmerica Laboratories, Inc., located in Edison, New Jersey and Microbac Laboratories, Inc. located in Knoxville, Tennessee, for the following parameters:

Parameter	**Method No.**	**References**
Volatile Organic Compounds (VOCs)*	SW8260B	1
Methane	RSK-175/SW3810	2
Sulfate	ASTM D516-90	3
Alkalinity	SM 2320 B	4
Hardness	SM 2340 C	4
Total Iron	200.7	5
Ferrous Iron (Fe^{+2})	Field colorimeter	6
Ferric Iron (Fe^{+3})	Calculated	---
Nitrate	SM 4500-NO3 F	4
Total Organic Carbon	SM 5310 B	4
Bacteria (*Dehalococcoides ethenogenes*)	QPCR**	Lab SOP #60105

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

Blank Contamination

The methane method/trip blanks exhibited contamination. Since the methane concentrations for the associate samples were several orders of magnitude greater than the blank concentrations, no qualification of the data was necessary. The laboratory applied qualifier "B" was removed from all affected methane results.

The sulfate initial/continuing calibration and method blanks exhibited contamination. The sulfate result for sample 20110913MW-02V08N was qualified 'U' (non-detect) at the reporting limit, as shown on Table B-2, because its concentration was less than 5 times the blank concentrations. For sulfate results greater than 5 times the blank concentrations, the laboratory applied 'B' qualifiers were crossed out on the Form 1s. Documentation supporting the qualification of data (i.e., Form 2 and 13) is presented in Attachment B.

Bacteria Identification / Quantitation

During the purging of monitoring well MW-06, an adjacent roll-off dumpster was being removed and discharged residual water (i.e., strong putrid odor) in/around the well-head, with a small volume (less than 1 liter) entering and contaminating the well. The field technician increased the purge rate in order to clean out the well before collecting a sample. Regardless, the *Dehalococcoides ethenogenes* result for sample 20110913MW-06V13N (i.e., 353,000 CEQ/mL) should be considered potentially biased high, and therefore was qualified 'J' (estimated). It should be noted that the *Dehalococcoides ethenogenes* results for the other groundwater samples were two or more orders of magnitude below the level detected at monitoring well location MW-06, further suggesting the biased high result at MW-06 may not be truly representative of site conditions.

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) or 'U' (non-detect) during the data validation are considered conditionally usable.

TABLE B-1
SAMPLE AND ANALYSIS SUMMARY - SEPTEMBER 2011
FORMER EMCA SITE, MAMARONECK, NEW YORK

SDG No.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Sulfate	Alkalinity	Hardness	Total Iron	Ferrous Iron (Fe+2)	Ferric Iron (Fe+3)	Nitrate	TOC	Bacteria**	Comments
460-31030-1	20110913MW02V08N	GW	09/13/11	X	X	X	X	X	X	X	X	X	X	X	---
	20110913MW03V09N	GW		X	X	X	X	X	X	X	X	X	X	X	---
	20110913MW03V09FD	GW		X	X	X	X	X	X	X	X	X	X	X	Field Duplicate of MW-03
	20110913MW06V13N	GW		X	X	X	X	X	X	X	X	X	X	X	---
	20110913MW07RV15N	GW		X	X	X	X	X	X	X	X	X	X	X	---
	20110913MW04V08N	GW		X	X	X	---	---	---	X	---	---	---	---	MS/MSD
	20110913TB1	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).
** - Bacteria includes *Dehalococcoides ethenogenes*.

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
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-03	MW-03	MW-04	MW-06
Sample ID		20110913MW02V08N	20110913MW03V09FD	20110913MW03V09N	20110913MW04V08N	20110913MW06V13N
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Parameter	Units		Field Duplicate (1-1)			
Volatiles						
Chlorotrifluoroethene (Freon-1113)	UG/L	180	69	82	1.2	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	490	4.2	5.4	1 U	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	26	8.3	9.4	1 U	4.4
Dissolved Gases						
Methane	UG/L	5,300	12,000	15,000	1,700	1,800
Total Metals						
Iron	UG/L	60,400	35,300	35,700	NA	9,630
Miscellaneous Parameters						
Alkalinity, Total (as CaCO3)	MG/L	361	596	596	NA	388
Dehalococcoides ethenogenes	CEQ/mL	1.79	1,820	3,780	NA	353,000 J
Hardness (as CaCO3)	MG/L	726	520	510	NA	235
Nitrogen, Nitrate	MG/L	0.1 U	0.1 U	0.1 U	NA	0.1 U
Sulfate	MG/L	5 U	19	18.2	16.7	16.5
Total Organic Carbon	MG/L	19.1	27.1	26.7	NA	10.9
Field Parameter						
Dissolved Oxygen	MG/L	0.00	NA	0.00	0.00	0.00
Ferrous Iron	MG/L	50.6	NA	29.8	14.3	7.4
Ferric Iron (calculated)	MG/L	9.8	NA	5.9	NA	2.23
Oxidation-Reduction Potential	mV	-115	NA	-124	-126	-123
pH	S.U.	6.80	NA	6.85	6.83	7.08
Specific Conductance	MS/CM	3.24	NA	1.99	2.29	0.801
Temperature	DEG C	22.1	NA	20.7	22.5	22.4
Turbidity	NTU	0.1	NA	21.8	0.2	5.3

Flags assigned during chemistry validation are shown.

U - Non-Detect
J - Analyte is reported below the PQL at an estimated concentration.
NA - Not Analyzed
MADE BY: __PRF_10/31/11___ CHKD BY: __GEK_11/02/11___

Detection Limits shown are PQL

N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/2/2011 3:18:14 PM
[LOGDATE] = #9/13/2011# AND [MATRIX] = 'WG'

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

Location ID		MW-07R
Sample ID		20110913MW07RV15N
Matrix		Groundwater
Depth Interval (ft)		-
Date Sampled		09/13/11
Parameter	**Units**	
Volatiles		
Chlorotrifluoroethene (Freon-1113)	UG/L	26
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1.6
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	0.94 J
Dissolved Gases		
Methane	UG/L	2,000
Total Metals		
Iron	UG/L	23,600
Miscellaneous Parameters		
Alkalinity, Total (as CaCO3)	MG/L	406
Dehalococcoides ethenogenes	CEQ/mL	248
Hardness (as CaCO3)	MG/L	637
Nitrogen, Nitrate	MG/L	0.1 U
Sulfate	MG/L	12.2
Total Organic Carbon	MG/L	11.3
Field Parameter		
Dissolved Oxygen	MG/L	0.00
Ferrous Iron	MG/L	20.1
Ferric Iron (calculated)	MG/L	3.5
Oxidation-Reduction Potential	mV	-109
pH	S.U.	6.86
Specific Conductance	MS/CM	3.28
Temperature	DEG C	22.4
Turbidity	NTU	0.1

Flags assigned during chemistry validation are shown.

U - Non-Detect
J - Analyte is reported below the PQL at an estimated concentration.
NA - Not Analyzed
MADE BY: __PRF_10/31/11___ CHKD BY: __GEK_11/02/11___

Detection Limits shown are PQL

N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/2/2011 3:18:14 PM
[LOGDATE] = #9/13/2011# AND [MATRIX] = 'WG'

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

Location ID		FIELDQC
Sample ID		20110913TB1
Matrix		Water
Depth Interval (ft)		-
Date Sampled		09/13/11
Parameter	Units	Trip Blank (1-1)
Volatiles		
Chlorotrifluoroethene (Freon-1113)	UG/L	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	1 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	1 U
Dissolved Gases		
Methane	UG/L	1.8 JB

Flags assigned during chemistry validation are shown.

U - Non-Detect J - Estimated Result
B - Analyte detected in the associated method blank.
NA - Not Analyzed
MADE BY: __PRF_10/31/11___ CHKD BY: __GEK_11/02/11___

Detection Limits shown are PQL

N:\11172730.00000\DB\PROGRAM\EDMS.mde
Printed: 11/2/2011 3:19:48 PM
[LOGDATE] = #9/13/2011# AND [MATRIX] = 'WQ'

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: 460-31030-1

Client Sample ID: **20110913MW02V08N**

Lab Sample ID: 460-31030-1
Client Matrix: Water

Date Sampled: 09/13/2011 1310
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1924.d
Dilution:	20			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1337			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	5300		8.6	54

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09N**

Lab Sample ID: 460-31030-2
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1925.d
Dilution:	50			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1346			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	15000		22	130

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09FD**

Lab Sample ID: 460-31030-3
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1930.d
Dilution:	50			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1432			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	12000		22	130

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW06V13N**

Lab Sample ID: 460-31030-4
Client Matrix: Water

Date Sampled: 09/13/2011 1505
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1931.d
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1441			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1800		4.3	27

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW07RV15N**

Lab Sample ID: 460-31030-5
Client Matrix: Water

Date Sampled: 09/13/2011 1115
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1932.d
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1450			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	2000		4.3	27

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW04V08N**

Lab Sample ID: 460-31030-6
Client Matrix: Water

Date Sampled: 09/13/2011 0930
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-87316	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1969.d
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/23/2011 1918			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1700	~~B~~	4.3	27

10/25/11

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913TB1**

Lab Sample ID: 460-31030-7
Client Matrix: Water

Date Sampled: 09/13/2011 0000
Date Received: 09/14/2011 1030

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

Analysis Method:	3810M	Analysis Batch:	460-86412	Instrument ID:	VOAGC2
	N/A	Prep Batch:	N/A	Lab File ID:	scrf1919.d
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	09/16/2011 1252			Final Weight/Volume:	10 mL
Prep Date:	N/A				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	1.8	J B	0.43	2.7

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW02V08N**

Lab Sample ID: 460-31030-1
Client Matrix: Water

Date Sampled: 09/13/2011 1310
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50236.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1257			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1257				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	490		0.28	1.0
Chlorotrifluoroethene	180		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	26		0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 122
Toluene-d8 (Surr)	98		69 - 125
Bromofluorobenzene	95		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09N**

Lab Sample ID: 460-31030-2
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50237.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1323			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1323				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	5.4		0.28	1.0
Chlorotrifluoroethene	82		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	9.4		0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 122
Toluene-d8 (Surr)	113		69 - 125
Bromofluorobenzene	109		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09FD**

Lab Sample ID: 460-31030-3
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50238.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1348			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1348				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	4.2		0.28	1.0
Chlorotrifluoroethene	69		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	8.3		0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 122
Toluene-d8 (Surr)	100		69 - 125
Bromofluorobenzene	98		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW06V13N**

Lab Sample ID: 460-31030-4
Client Matrix: Water

Date Sampled: 09/13/2011 1505
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50235.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1232			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1232				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	1.0	U	0.28	1.0
Chlorotrifluoroethene	30		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	4.4		0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 122
Toluene-d8 (Surr)	97		69 - 125
Bromofluorobenzene	95		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW07RV15N**

Lab Sample ID: 460-31030-5
Client Matrix: Water

Date Sampled: 09/13/2011 1115
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50239.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1414			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1414				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	1.6		0.28	1.0
Chlorotrifluoroethene	26		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	0.94	J	0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 122
Toluene-d8 (Surr)	100		69 - 125
Bromofluorobenzene	95		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW04V08N**

Lab Sample ID: 460-31030-6
Client Matrix: Water

Date Sampled: 09/13/2011 0930
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50234.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1207			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1207				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	1.0	U	0.28	1.0
Chlorotrifluoroethene	1.2		0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	1.0	U	0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 122
Toluene-d8 (Surr)	97		69 - 125
Bromofluorobenzene	93		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913TB1**

Lab Sample ID: 460-31030-7
Client Matrix: Water

Date Sampled: 09/13/2011 0000
Date Received: 09/14/2011 1030

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-86947	Instrument ID:	VOAMS13
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	p50232.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/22/2011 1116			Final Weight/Volume:	5 mL
Prep Date:	09/22/2011 1116				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Freon TF	1.0	U	0.28	1.0
Chlorotrifluoroethene	1.0	U	0.55	1.0
1,2-Dichloro-1,1,2-trifluoroethane	1.0	U	0.32	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 122
Toluene-d8 (Surr)	98		69 - 125
Bromofluorobenzene	95		69 - 135

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW02V08N**

Lab Sample ID: 460-31030-1
Client Matrix: Water

Date Sampled: 09/13/2011 1310
Date Received: 09/14/2011 1030

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-86551	Instrument ID:	ICP4
Prep Method:	200.7	Prep Batch:	460-86312	Lab File ID:	09192011.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/19/2011 1330			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 1109				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	60400		47.1	150

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09N**

Lab Sample ID: 460-31030-2
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-86551	Instrument ID:	ICP4
Prep Method:	200.7	Prep Batch:	460-86312	Lab File ID:	09192011.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/19/2011 1334			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 1109				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	35700		47.1	150

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW03V09FD**

Lab Sample ID: 460-31030-3
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-86551	Instrument ID:	ICP4
Prep Method:	200.7	Prep Batch:	460-86312	Lab File ID:	09192011.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/19/2011 1338			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 1109				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	35300		47.1	150

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW06V13N**

Lab Sample ID: 460-31030-4
Client Matrix: Water

Date Sampled: 09/13/2011 1505
Date Received: 09/14/2011 1030

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-86551	Instrument ID:	ICP4
Prep Method:	200.7	Prep Batch:	460-86312	Lab File ID:	09192011.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/19/2011 1342			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 1109				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	9630		47.1	150

Client: URS Corporation

Job Number: 460-31030-1

Client Sample ID: **20110913MW07RV15N**

Lab Sample ID: 460-31030-5
Client Matrix: Water

Date Sampled: 09/13/2011 1115
Date Received: 09/14/2011 1030

200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method:	200.7 Rev 4.4	Analysis Batch:	460-86551	Instrument ID:	ICP4
Prep Method:	200.7	Prep Batch:	460-86312	Lab File ID:	09192011.asc
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/19/2011 1345			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 1109				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	23600		47.1	150

General Chemistry

Client Sample ID: **20110913MW02V08N**

Lab Sample ID: 460-31030-1
Client Matrix: Water

10/28/11

Date Sampled: 09/13/2011 1310
Date Received: 09/14/2011 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	5.0 ~~0.89~~	U ~~JB~~	mg/L	0.32	5.0	1.0	D516-90, 02
Analysis Batch: 460-87588	Analysis Date: 09/28/2011 1342						
Hardness as calcium carbonate	726		mg/L	40.0	50.0	1.0	SM 2340C
Analysis Batch: 460-87320	Analysis Date: 09/26/2011 1400						
Nitrate as N	0.10	U	mg/L	0.039	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-86639	Analysis Date: 09/15/2011 0910						
Total Organic Carbon	19.1		mg/L	0.39	1.0	1.0	SM 5310B
Analysis Batch: 460-86325	Analysis Date: 09/16/2011 0238						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	361		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-86316	Analysis Date: 09/16/2011 0958						

General Chemistry

Client Sample ID: **20110913MW03V09N**

Lab Sample ID: 460-31030-2
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

10/28/11

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	18.2	B	mg/L	0.32	5.0	1.0	D516-90, 02
Analysis Batch: 460-87588	Analysis Date: 09/28/2011 1342						
Hardness as calcium carbonate	510		mg/L	20.0	25.0	1.0	SM 2340C
Analysis Batch: 460-87320	Analysis Date: 09/26/2011 1400						
Nitrate as N	0.10	U	mg/L	0.039	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-86639	Analysis Date: 09/15/2011 0911						
Total Organic Carbon	26.7		mg/L	0.39	1.0	1.0	SM 5310B
Analysis Batch: 460-86325	Analysis Date: 09/16/2011 0345						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	596		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-86316	Analysis Date: 09/16/2011 1005						

General Chemistry

Client Sample ID: **20110913MW03V09FD**

Lab Sample ID: 460-31030-3
Client Matrix: Water

Date Sampled: 09/13/2011 1750
Date Received: 09/14/2011 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	19.0	B	mg/L	0.32	5.0	1.0	D516-90, 02
Analysis Batch: 460-87588	Analysis Date: 09/28/2011 1344						
Hardness as calcium carbonate	520		mg/L	20.0	25.0	1.0	SM 2340C
Analysis Batch: 460-87320	Analysis Date: 09/26/2011 1400						
Nitrate as N	0.10	U	mg/L	0.039	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-86639	Analysis Date: 09/15/2011 0913						
Total Organic Carbon	27.1		mg/L	0.39	1.0	1.0	SM 5310B
Analysis Batch: 460-86325	Analysis Date: 09/16/2011 0409						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	596		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-86316	Analysis Date: 09/16/2011 1012						

General Chemistry

Client Sample ID: **20110913MW06V13N**

Lab Sample ID: 460-31030-4
Client Matrix: Water

Date Sampled: 09/13/2011 1505
Date Received: 09/14/2011 1030

10/28/11
2

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	16.5	B	mg/L	0.32	5.0	1.0	D516-90, 02
Analysis Batch: 460-87588	Analysis Date: 09/28/2011 1344						
Hardness as calcium carbonate	235		mg/L	20.0	25.0	1.0	SM 2340C
Analysis Batch: 460-87320	Analysis Date: 09/26/2011 1400						
Nitrate as N	0.10	U	mg/L	0.039	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-86639	Analysis Date: 09/15/2011 0914						
Total Organic Carbon	10.9		mg/L	0.39	1.0	1.0	SM 5310B
Analysis Batch: 460-86325	Analysis Date: 09/16/2011 0433						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	388		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-86316	Analysis Date: 09/16/2011 1018						

General Chemistry

Client Sample ID: **20110913MW07RV15N**

Lab Sample ID: 460-31030-5
Client Matrix: Water

Date Sampled: 09/13/2011 1115
Date Received: 09/14/2011 1030

10/28/11

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	12.2	B	mg/L	0.32	5.0	1.0	D516-90, 02
Analysis Batch: 460-87588	Analysis Date: 09/28/2011 1344						
Hardness as calcium carbonate	637		mg/L	20.0	25.0	1.0	SM 2340C
Analysis Batch: 460-87320	Analysis Date: 09/26/2011 1400						
Nitrate as N	0.10	U	mg/L	0.039	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-86639	Analysis Date: 09/15/2011 0916						
Total Organic Carbon	11.3		mg/L	0.39	1.0	1.0	SM 5310B
Analysis Batch: 460-86325	Analysis Date: 09/16/2011 0456						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	406		mg/L	5.0	5.0	1.0	SM 2320B
Analysis Batch: 460-86316	Analysis Date: 09/16/2011 1024						

General Chemistry

Client Sample ID: **20110913MW04V08N**

Lab Sample ID: 460-31030-6
Client Matrix: Water

10/28/11

Date Sampled: 09/13/2011 0930
Date Received: 09/14/2011 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	16.7	B	mg/L	0.32	5.0	1.0	D516-90, 02

Analysis Batch: 460-87588 Analysis Date: 09/28/2011 1344

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CERTIFICATE OF ANALYSIS

Tom Tanico
Test America - NJ
777 New Durham Rd
Edison, NJ 08817

Date Reported: 9/30/2011
Date Received: 9/14/2011
Cust #: RT148
PO#:

Workorder: 1112858 **Project:** Dehalococcoides qPCR

Analyte	Result	Units	Qualifier	Reporting Limit	Analyst	Analyzed	Method
20110913MW02V08N Sampled: 09/13/2011 13:10							
1112858-01 (Water)							
Molecular - PCR							
Dehalococcoides ethenogenes	**1.79**	CEQ/ml			TJM	09/30/2011 09:22	QPCR
20110913MW03VO9N Sampled: 09/13/2011 17:50							
1112858-02 (Water)							
Molecular - PCR							
Dehalococcoides ethenogenes	**3780**	CEQ/ml			TJM	09/30/2011 09:22	QPCR
20110913MW03V09FD Sampled: 09/13/2011 17:50							
1112858-03 (Water)							
Molecular - PCR							
Dehalococcoides ethenogenes	**1820**	CEQ/ml			TJM	09/30/2011 09:22	QPCR
20110913MW06V13N Sampled: 09/13/2011 15:05							
1112858-04 (Water)							
Molecular - PCR							
Dehalococcoides ethenogenes	**353000**	CEQ/ml	J		TJM	09/30/2011 09:22	QPCR
20110913MW07RV15N Sampled: 09/13/2011 11:15							
1112858-05 (Water)							
Molecular - PCR							
Dehalococcoides ethenogenes	**248**	CEQ/ml			TJM	09/30/2011 09:22	QPCR

10/28/11

ATTACHMENT B

SUPPORT DOCUMENTATION

CASE NARRATIVE

Client: URS Corporation

Project: Rohm and Haas - Former EMCA Site

Report Number: 460-31030-1

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 09/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.1 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 460-31030-1 through 460-31030-5 were analyzed for total recoverable metals in accordance with EPA Method 200.7. The samples were prepared on 09/16/2011 and analyzed on 09/19/2011.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples 460-31030-1 through 460-31030-5 were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 09/16/2011.

Alkalinity exceeded the rpd limit for the duplicate of sample 460-30827-1. Refer to the QC report for details.

No other difficulties were encountered during the alkalinity analyses.

All other quality control parameters were within the acceptance limits.

HARDNESS
Samples 460-31030-1 through 460-31030-5 were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 09/26/2011.

No difficulties were encountered during the hardness analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED HYDROCARBON GASES
Samples 460-31030-1 through 460-31030-7 were analyzed for dissolved hydrocarbon gases in accordance with EPA Method 3810M (Methane, Ethane, Ethene, Propane). The samples were analyzed on 09/16/2011 and 09/23/2011.

Methane was detected in method blanks MB 460-86412/4 and MB 460-87316/3 at a level exceeding the reporting limit. If an associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Samples 460-31030-1(20X), 460-31030-2(50X), 460-31030-3(50X) and 460-31030-4 through 460-31030-6(10X) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the dissolved hydrocarbon gases analyses.

All other quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples 460-31030-1 through 460-31030-7 were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/22/2011.

No difficulties were encountered during the volatiles analyses.

All quality control parameters were within the acceptance limits.

SULFATE
Samples 460-31030-1 through 460-31030-6 were analyzed for sulfate in accordance with Method D516-90. The samples were analyzed on 09/28/2011.

Sulfate was detected in method blank MB 460-87588/5 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.

No other difficulties were encountered during the sulfate analyses.

All other quality control parameters were within the acceptance limits.

NITROGEN-NITRATE
Samples 460-31030-1 through 460-31030-5 were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 09/15/2011.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 86639 were outside control limits for nitrate and nitrite. 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.

No other difficulties were encountered during the Niitrate analyses.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples 460-31030-1 through 460-31030-5 were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 09/16/2011.

No difficulties were encountered during the TOC analyses.

All quality control parameters were within the acceptance limits.

Subcontract Work
Method Dehalococcoides: This method was subcontracted to Microbac Laboratories, Inc.. The subcontract certification is different from those listed on the TestAmerica cover page of this final report.

T.J.

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. 41568877.00001

SITE NAME Former EMCA site

SAMPLERS (PRINT/SIGNATURE) Steven Moeller [signature]

DELIVERY SERVICE: FED EX AIRBILL NO.: ____

LAB Test America - Edison, NJ

COOLER 1 of ____

PAGE 1 of 1

31030

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	8260B, Freon (MOD) — 40ml VOA-HCl pres.	3810M, Methane — 40ml VOA-HCl pres.	D516 Sulfate — 250ml plastic	200.7 Iron, 2340C Hardness — 500ml plastic HNO3 pres.	SM5310B TOC — 250ml Amber glass-H2SO4	2320B Alkalinity — 500ml plastic	SM4500 Nitrate — 500ml plastic	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)
MW-02	9-13-11	1310	G	20110913MW02V08N	WG	11	3	3	1	1	1	1	1	-1	N1			
MW-03	9-13-11	1750	G	20110913MW03V09N	WG	11	3	3	1	1	1	1	1	2	N1			
MW-03	9-13-11	1750	G	20110913MW03V09FD	WG	11	3	3	1	1	1	1	1	3	FD1			
MW-06	9-13-11	1505	G	20110913MW06V13N	WG	11	3	3	1	1	1	1	1	4	N1			
MW-07R	9-13-11	1115	G	20110913MW07RV15N	WG	11	3	3	1	1	1	1	1	5	N1			
MW-04	9-13-11	0930	G	20110913MW04V08N	WG	7	3	3	1					6	N1			
MW-04	9-13-11	0930	G	20110913MW04V08MS	WG	7	3	3	1					MS	MS1			
MW-04	9-13-11	0930	G	20110913MW04V08SD	WG	7	3	3	1					MSD	SD1			
TRIP BLANK	9-13-11	—	G	20110913TB1	WQ	6	3	3						TRIP BLANK	TB1	7		

SHORT HOLD NO3

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
RELINQUISHED BY (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LAB BY (SIGNATURE)**	**DATE**	**TIME**
[signature]	9-13-11	1930	FEDEX [signature]	9/14/11	1030

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

Distribution: Original accompanies shipment, copy to coordinator field files

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

Custody Seal # 405397 2.1°C Jeso

10/21/2011

Test America - NJ

CHAIN OF CUSTODY RECORD

1112858-01 A
Test America - NJ
20110913MW02V08N
Sampled: 09/13/2011 13:10
Water-X-Original Packaging (Client Supplied)

PROJECT NO.	SITE NAME
41568877.00001	former EMCA site

SAMPLERS (PRINT/SIGNATURE): Steven Moeller

LAB: Microbac
COOLER: 1 of 1
PAGE: 1 of 1

DELIVERY SERVICE: FED EX AIRBILL NO.:

Dehalococcoides

TEST

BOTTLE TYPE AND PRESERVATIVE

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	1 liter plastic (unpres.)	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)
MW-02	9-13-11	1310	G	20110913MW02V08N	WG	1	1		N1			
MW-03	9-13-11	1750	G	20110913MW03V09N	WG	1	1		N1			
MW-03	9-13-11	1750	G	20110913MW03V09FD	WG	1	1		FD1			
MW-06	9-13-11	1505	G	20110913MW06V13N	WG	1	1		N1			
MW-07R	9-13-11	1115	G	20110913MW07RV15N	WG	1	1		N1			

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
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
	9-13-11	1930	Kenna Campbell	9-14-11	13:00

5.9°

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

1112858

Distribution: Original accompanies shipment, copy to coordinator field files

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

10/21/2011

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-31030-1

SDG No.:

Analyst: MB Batch Start Date: 09/28/2011

Reporting Units: mg/L Analytical Batch No.: 87588

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	13:26	Sulfate	20.25	20.0	101	90-110		WTs-fateSS_00012
2	ICB	13:26	Sulfate	0.561				J	
3	CCV	13:41	Sulfate	20.13	20.0	101	90-110		WTs-fateSS_00012
4	CCB	13:41	Sulfate	0.501				J	
13	CCV	13:44	Sulfate	20.11	20.0	101	90-110		WTs-fateSS_00012
14	CCB	13:44	Sulfate	0.527				J	
25	CCV	13:52	Sulfate	19.77	20.0	99	90-110		WTs-fateSS_00012
26	CCB	13:52	Sulfate	0.543				J	
31	CCV	13:56	Sulfate	19.96	20.0	100	90-110		WTs-fateSS_00012
32	CCB	13:56	Sulfate	0.503				J	

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

FORM II-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-31030-1

SDG No.:

Instrument ID: Konelab1 Method: D516-90, 02

Start Date: 09/28/2011 13:26 End Date: 09/28/2011 14:11

Lab Sample ID	D/F	Type	Time	Analytes																				
				SO4																				
ICV 460-87588/1	1		13:26	X																				
ICB 460-87588/2	1		13:26	X																				
CCV 460-87588/3	1		13:41	X																				
CCB 460-87588/4	1		13:41	X																				
MB 460-87588/5	1	T	13:41	X																				
LCS 460-87588/6	1	T	13:42	X																				
460-31030-1	1	T	13:42	X																				
460-31030-2	1	T	13:42	X																				
460-31030-3	1	T	13:44	X																				
460-31030-4	1	T	13:44	X																				
460-31030-5	1	T	13:44	X																				
460-31030-6	1	T	13:44	X																				
CCV 460-87588/13	1		13:44	X																				
CCB 460-87588/14	1		13:44	X																				
ZZZZZZ			13:46																					
ZZZZZZ			13:46																					
ZZZZZZ			13:46																					
ZZZZZZ			13:46																					
ZZZZZZ			13:46																					
ZZZZZZ			13:46																					
ZZZZZZ			13:52																					
ZZZZZZ			13:52																					
ZZZZZZ			13:52																					
ZZZZZZ			13:52																					
CCV 460-87588/25	1		13:52	X																				
CCB 460-87588/26	1		13:52	X																				
ZZZZZZ			13:54																					
ZZZZZZ			13:54																					
460-31030-6 MS	10	T	13:54	X																				
460-31030-6 MSD	10	T	13:54	X																				
CCV 460-87588/31	1		13:56	X																				
CCB 460-87588/32	1		13:56	X																				
ZZZZZZ			14:00																					
ZZZZZZ			14:00																					
CCV 460-87588/35			14:02																					
CCB 460-87588/36			14:02																					
CCV 460-87588/37			14:08																					
CCB 460-87588/38			14:08																					
ZZZZZZ			14:10																					
ZZZZZZ			14:10																					
CCV 460-87588/41			14:11																					
CCB 460-87588/42			14:11																					