Wyeth
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Madison, New Jersey

RCRA CORRECTIVE ACTION PROGRAM
SOLID WASTE MANAGEMENT UNITS
2012 ANNUAL REPORT
FOR LONG-TERM
GROUNDWATER MONITORING PROGRAM
WYETH PEARL RIVER FACILITY
Pearl River, New York

May 2013
PFIZ - 188048

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SECTION 1

INTRODUCTION

The Wyeth Pearl River facility is a pharmaceutical manufacturing and research and development facility located in Rockland County, New York. The facility, formerly known as Lederle Laboratories, conducts activities on a 580-acre site. Figure 1-1 presents a location map for the Pearl River facility.

The facility was granted a 6NYCRRPart 373 permit for the Treatment, Storage and Disposal, TSD, of hazardous wastes on September 29, 1993, the facility currently has no permitted units and operates as a large quantity generator with less that ninety day storage. The permit was finalized and became effective on September 29, 1993. Module III of the original TSD permit specifies the corrective action requirements for 62 solid waste management units (SWMUs) and 2 areas of concern (AOC) that were identified. On the basis of the RCRA Facility Assessment Preliminary Review, Module III identified 38 SWMUs and 1 AOC that required no further action, or no further action was specified. The remaining SWMUs and AOC were required to undergo further assessment. Wyeth submitted to the New York State Department of Environmental Conservation (NYSDEC) work plans for all proposed activities, which were carried out following approval by the NYSDEC. Field, analytical and closure activities were performed as per the approved work plans, and all submittal dates were met.

At the conclusion of a significant portion of the corrective action activities, a three-year Corrective Measures Study (CMS) was performed at the direction of NYSDEC. The objective of the CMS was to monitor volatile organic compounds (VOCs) in groundwater downgradient of (a) Landfills 1 and 2, (b) the SWMUs on the active side of the facility including the Industrial Sewer, and (c) the former wastewater treatment plant. The locations of monitoring wells were selected by NYSDEC to meet the objectives of the CMS. Groundwater sampling was conducted in selected monitoring wells on a quarterly basis in 2002, 2003 and 2004.

At the conclusion of the three-year CMS, only two wells, well MW-96-13 downgradient of the former wastewater treatment plant and well MW-99B downgradient of the landfills, had concentrations for one or more VOCs that exceeded NYS Class GA Ground Water Quality Standards (GWQS).

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Figure 1-1
Location Map of Wyeth's Pearl River Facility

Following completion of the CMS, Wyeth requested, in a letter to NYSDEC dated August 10, 2005, that a "No Further Remedial Action" (NFA) determination be issued for the SWMUs and AOC that required additional investigation and assessment. The NFA request included a proposal for a groundwater monitoring plan for wells MW-99B and MW-96-13. In a letter dated October 14, 2005, NYSDEC agreed that a NFA was warranted for the SWMUs. The proposal for a reduced monitoring schedule was also approved with the condition that Department approval would be required before cessation of monitoring at the end of the five year period or after four consecutive events which comply with groundwater quality standards.

The "RCRA Corrective Action Program, Solid Waste Management Units, Work-Plan for Long-Term Monitoring Program, Wyeth Pearl River Facility, Pearl River, New York" dated December 2005, presenting the scope of work for implementing the long term monitoring program for wells MW-99B and MW-96-13, was submitted to NYSDEC in December 2005 and subsequently approved. As presented in the Work Plan, at the conclusion of each year's semi-annual sampling, an annual summary report will be prepared that will include a summary of all sampling results since the inception of the long term monitoring program. The annual report will include the full laboratory deliverables for that year, as well as graphs indicating groundwater quality trends for contaminants of concern, and any exceedances to GWQS.

The report presented herein is the seventh annual summary report since the inception of the long term monitoring program.

SECTION 2

SAMPLING RESULTS

2.1 OBJECTIVES

This report presents the sampling results of the seventh year of sampling monitoring wells MW-99B and MW-96-13 under the long term monitoring program. The locations of these two monitoring wells are shown in Figure 2-1.

The objective of the long term monitoring program is to continue to evaluate the attenuation of volatile organic compounds (VOCs) in the groundwater at these locations. The monitoring program was originally to be performed for a period of five years, or until concentrations in these wells are reported below their respective GWQS for four consecutive events. As stated in their letter of October 14, 2005, NYSDEC approval will be required before cessation of the monitoring program.

2.2 GROUNDWATER SAMPLING AND ANALYSIS

Long-term monitoring of wells MW99-B and MW-96-13 under this program was initiated in December 2005. This report presents the results of the June and November 2013 sampling events.

Boring logs for the wells are attached in Appendix A. Well screen intervals are presented in Table 2-1:

Table 2-1. Well Screen Intervals

Well Number	Screen Interval (ft below ground)
MW-99B	3.5 - 13.5
MW-96-13	27.2 - 32.2

Both wells were inspected just prior to performing groundwater sampling. A visual inspection was performed to insure the integrity of each well, to observe that the well casing was not cracked or broken, and that there was no evidence of tampering. Well depth measurements were taken to verify the total depth of the well and to estimate the amount of siltation within the well.

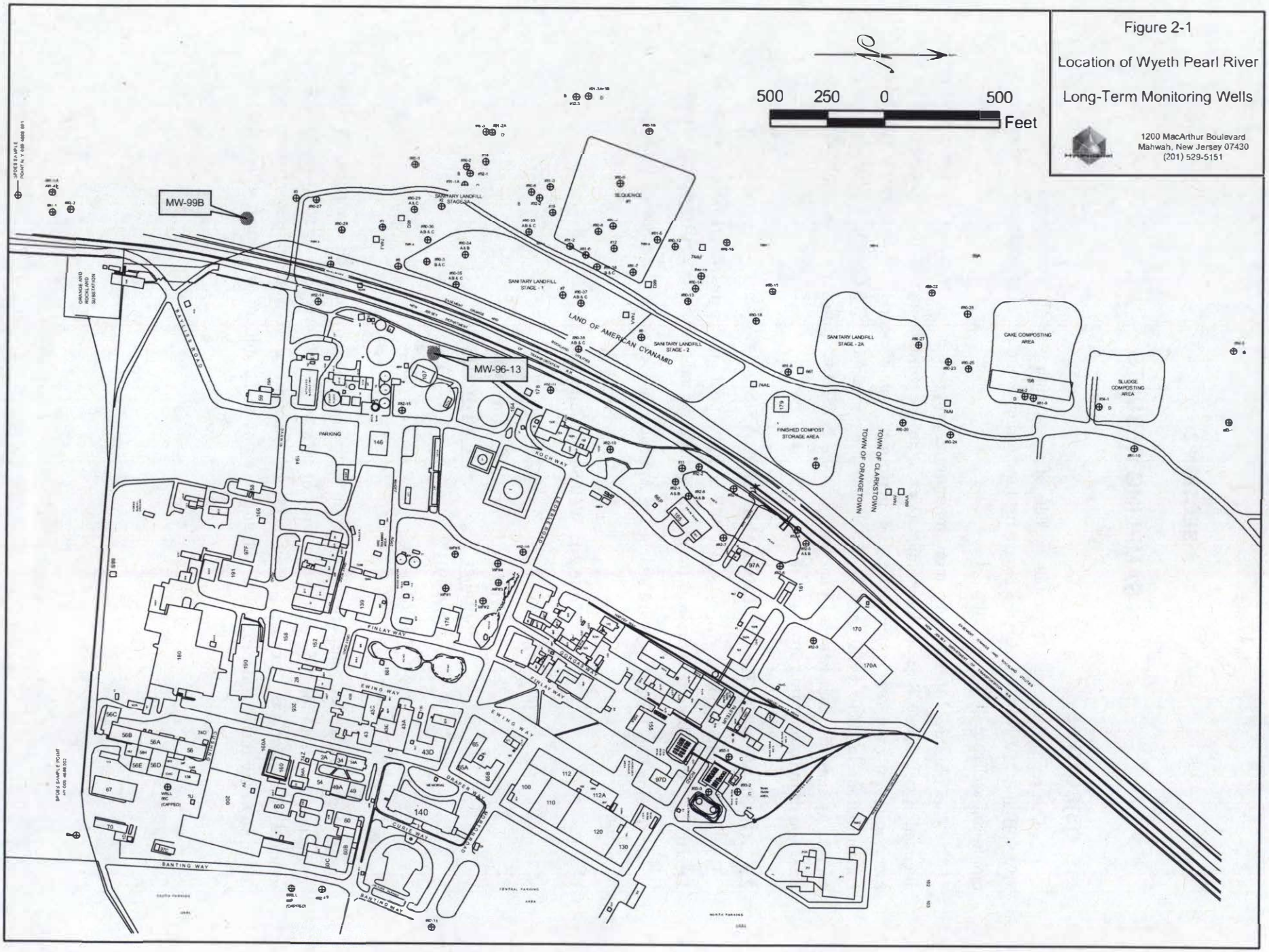

Figure 2-1

Location of Wyeth Pearl River

Long-Term Monitoring Wells

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Water level measurements were recorded for each well. Approximately three volumes of water in the well casing were purged from each well prior to sampling. Field measurements for pH, temperature, conductivity and turbidity were recorded for each sample.

Wells were sampled using dedicated HDPE or Teflon bailers and dedicated polyethylene rope. A field duplicate and a matrix spike/matrix spike duplicate (MS/MSD) sample were collected to evaluate the reproducibility of the sampling and laboratory analysis methods. A trip blank prepared by the laboratory was submitted with the samples. All samples were analyzed for TCL VOAs.

Samples were submitted for analysis to TestAmerica of Edison, New Jersey. TestAmerica is New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) approved laboratory for all categories of solid and hazardous waste. All analyses were conducted using NYSDEC Analytical Services Protocol (ASP).

Field activities and field and laboratory QA/QC procedures followed the approved site's RCRA Corrective Action Program Health and Safety Plan (HASP), dated December 1992 and Quality Assurance Project Plan (QAPjP), dated January 1993/revised September 1994.

2.2.1 Analytical Results

Table 2-2 presents the results of the groundwater sampling conducted in June and November 2012 for monitoring wells MW-96-13 and MW-99B. Analytical results for field duplicates and trip blanks are presented in Appendix B Data Validation Reports. Concentrations which exceed NYSDEC Class GA Groundwater Standards (GWQS) are shown in bold. Three volatile organic compounds (VOCs) were detected above GWQS during the two sampling periods. Trichloroethene was detected above GWQS in MW-96-13, and vinyl chloride and 1,2-Dichloroethane were detected above GWQS in MW-99B. Figure 2-2 presents a temporal plot of the compounds that presently exceed GWQS and includes the results for the three-year CMS Groundwater Sampling Program (April 2002 – October 2004) for these 2 wells.

The results show that for Trichloroethene and 1,1-Dichloroethane in MW-96-13, and vinyl chloride and 1,2-Dichloroethane in MW-99B, the concentrations continue to fluctuate near GWQS. The concentrations are also consistent with those detected during the three-year CMS sampling program.

Figure 2-2 also presents sampling results for compounds 1,2-Dichloroethane, 1,1,1-Trichloroethane for MW-96-13. These two compounds were previously detected above GWQS in MW-96-13, but have remained below GWQS since at least the last fifteen sampling events, and have been presented to show their overall downward trend. After 3 consecutive sampling events at or near GWQS, 1,1 Dichloroethane has remained below the GWQS over the last four sampling events covering 2011 and 2012.

TABLE 2-2. WYETH - PEARL RIVER
LONG-TERM SEMI-ANNUAL GROUNDWATER MONITORING PROGRAM
SAMPLING CONDUCTED JUNE AND NOVEMBER 2012

Sample ID	NYSDEC	MW-96-13		MW-96-13		MW-99B		MW-99B		METHOD
Lab Sample No.	Class GA	460-41599-1		460-47134-1		460-41599-1		460-47134-1		DETECTION
Sampling Date	Groundwater	6/19/2012		11/14/2014		6/19/2012		11/14/2014		LIMIT
Matrix	Standards	WATER		WATER		WATER		WATER		
Dilution Factor		1		1		1		1		
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L
VOLATILE COMPOUNDS (GC/MS)										
Chloromethane	5	0.10	U	0.10	U	0.10	U	0.10	U	0.10
Bromomethane	5	0.18	U	0.18	UJ	0.18	U	0.18	UJ	0.18
Vinyl Chloride	2	0.14	U	0.14	U	**3.0**		**3.0**		0.14
Chloroethane	5	0.17	U	0.17	U	0.17	U	0.17	U	0.17
Methylene Chloride	5	0.18	U	0.18	U	0.18	U	0.18	U	0.18
Acetone	50	2.7	U	2.7	U	2.7	U	2.7	U	2.7
Carbon Disulfide	5	0.13	U	0.13	U	0.13	U	0.13	U	0.13
1,1-Dichloroethene	5	1.5		0.090	U	0.090	U	0.090	U	0.090
1,1-Dichloroethane	5	4.7		4.8		0.70	J	0.76	J	0.13
trans-1,2-Dichloroethene	5	0.13	U	0.13	U	0.13	U	0.13	U	0.13
cis-1,2-Dichloroethene	5	1.9		2.1		0.55	J	0.53	J	0.18
Chloroform	7	0.45	J	0.64	J	0.080	U	0.080	U	0.080
1,2-Dichloroethane	0.6	0.19	U	0.19	U	**0.89**	J	**1.2**		0.19
2-Butanone	5	2.3	U	2.3	U	2.3	U	2.3	U	2.3
1,1,1-Trichloroethane	5	2.3		2.2		0.060	U	0.060	U	0.060
Carbon Tetrachloride	5	0.060	U	0.060	U	0.060	U	0.060	U	0.060
Bromodichloromethane	5	0.12	U	0.12	U	0.12	U	0.12	U	0.12
1,2-Dichloropropane	1	0.090	U	0.090	U	0.090	U	0.090	U	0.090
cis-1,3-Dichloropropene	0.4 [1]	0.18	U	0.18	U	0.18	U	0.18	U	0.18
Trichloroethene	5	**5.1**		**5.6**		0.16	J	0.48	J	0.090
Dibromochloromethane	5	0.20	U	0.20	U	0.20	U	0.20	U	0.20
1,1,2-Trichloroethane	1	0.19	U	0.19	U	0.19	U	0.19	U	0.19
Benzene	5	0.080	U	0.080	U	0.080	U	0.080	U	0.080
trans-1,3-Dichloropropene	0.4 [1]	0.24	U*	0.24	U	0.24	U*	0.24	U	0.24
Bromoform	5	0.19	U	0.19	U	0.19	U	0.19	U	0.19
4-Methyl-2-Pentanone	5	0.99	U	0.99	U	0.99	U	0.99	U	0.99
2-Hexanone	5	0.50	U	0.50	U	0.50	U	0.50	U	0.50
Tetrachloroethene	5	0.10	U	0.10	U	0.10	U	0.10	U	0.10
1,1,2,2-Tetrachloroethane	5	0.16	U	0.16	U	0.16	U	0.16	U	0.16
Toluene	5	0.15	U	0.15	U	0.15	U	0.15	U	0.15
Chlorobenzene	5	0.11	U	0.11	U	0.11	U	0.11	U	0.11
Ethylbenzene	5	0.10	U	0.10	U	0.10	U	0.10	U	0.10
Styrene	5	0.12	U	0.12	U	0.12	U	0.12	U	0.12
Xylene (Total)	5	0.36	U	0.36	U	0.36	U	0.36	U	0.36
Total Confident Conc.										

Bold - Exceeds GWQS

[1] Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

* - The laboratory control sample was recovered outside of control limits.

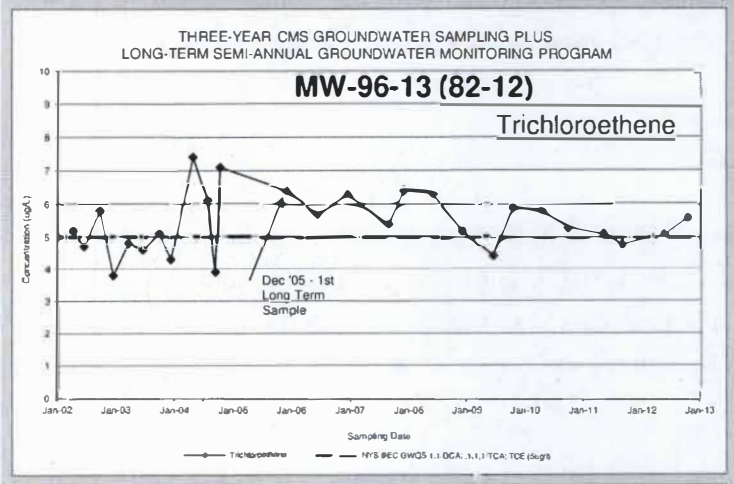
U - The compound was not detected at the indicated concentration.

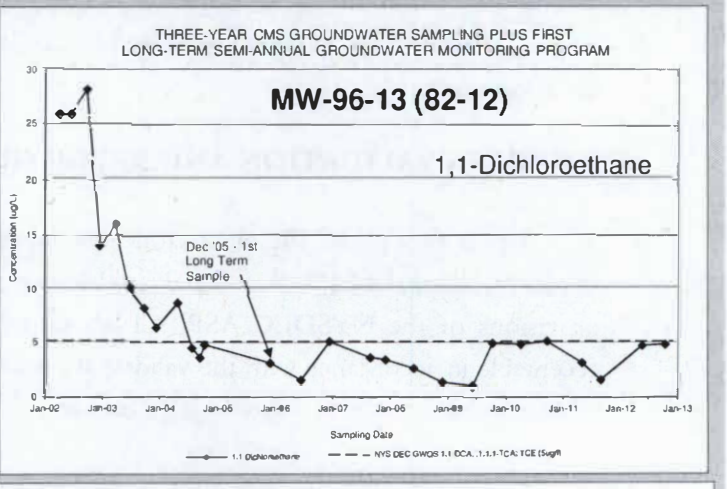
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

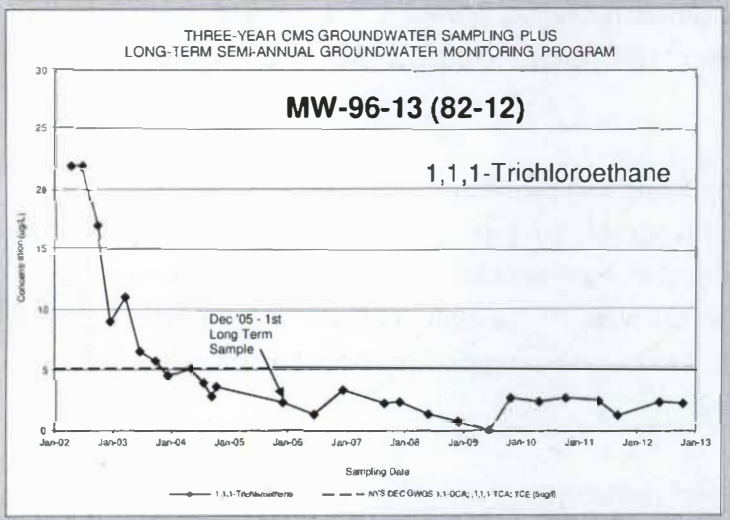
UJ - Qualified due to the difference between the initial calibration and continuing calibration relative response factors being outside of acceptable limits (see Section 2.3)

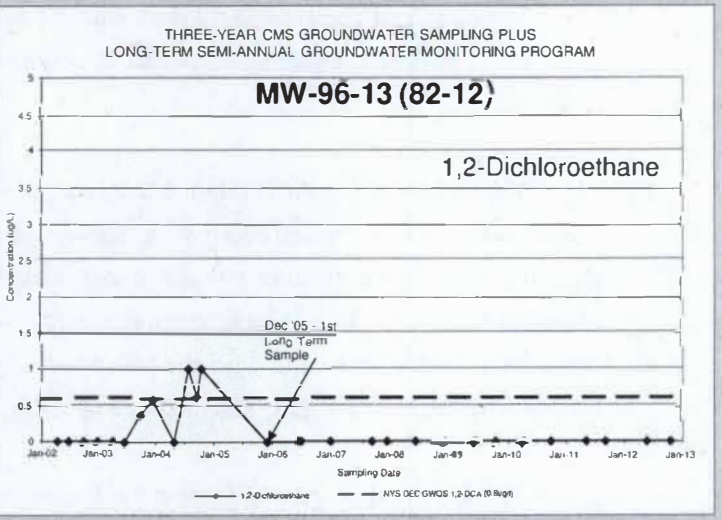
Figure 2. Selected VOCs in MW-96-13 and MW-99B

MW-96-13

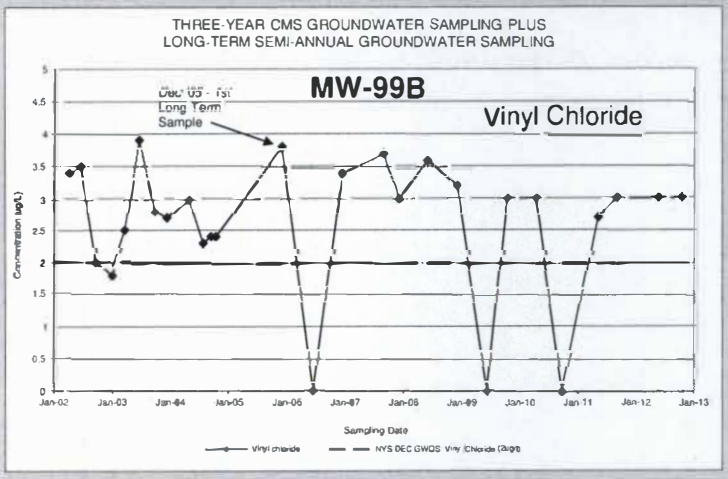


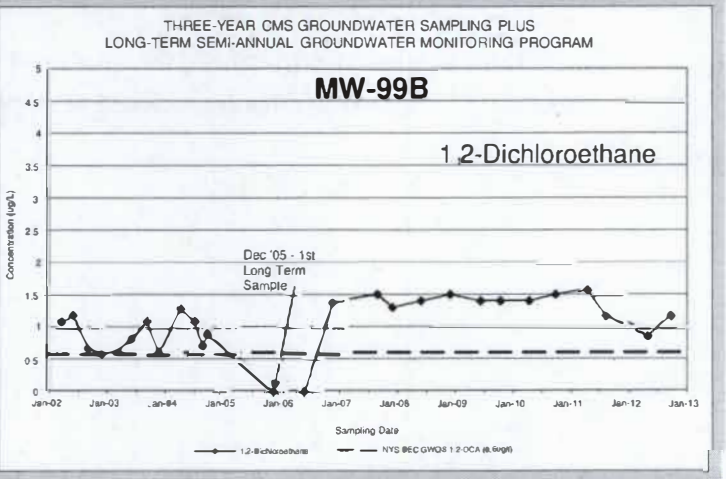






MW-99B





NOTE: Results for data plotted on the x-axis were reported as "ND" (not detected).

Concentrations of all target VOCs will continue to be monitored over the course of the long-term monitoring program in order to evaluate the attenuation of VOCs in the groundwater at these locations.

2.3 DATA VALIDATION AND REPORTING

Upon receipt of the data from the laboratory, all analytical results underwent full data validation using USEPA functional guidelines and other USEPA guidance documents, and the provisions of the NYSDEC ASP. All laboratory analytical data was found to be compliant and acceptable in accordance with the validation protocols, with the exception of one qualifier related to bromomethane in the November 2012 data set.

Validation of the June 2012 data with all data considered usable and valid. No qualifiers were required. The volatile organic analytical results were 100 percent complete for three samples collected.

Validation of the November 2012 data package found that the relative response factors in the initial and continuing calibration were outside of the acceptable limit for bromomethane. Based on this, the undetected bromomethane concentration in the three samples and the trip blank were qualified with UJ. The volatile organic analytical results were 100 percent complete with all data considered usable and valid with the exception of the bromomethane concentration. The validation qualifier for bromomethane was included in Table 2-2.

The qualified bromomethane data does not affect the analysis of the chlorinated hydrocarbon data as bromomethane is not a site contaminant of concern (COC), and has been non-detect in the two long term monitoring wells since the inception of the long term monitoring program.

Data validation reports for the two sampling events are presented in Appendix B. Full Laboratory Data Deliverables are included in Appendix C (electronic version only).