Prepared for:

Village of Wellsville

Department of Public Works

200 Bolivar Road

Wellsville, NY 14895

2010 ANNUAL REPORT

Wellsville/Andover Landfill Site
Operations and Maintenance
Site Number 9-02-004
Allegany County, New York

Prepared by:

On-Site Technical Services, Inc.

72 Railroad Avenue

Wellsville, NY 14895

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1.0 OVERVIEW

1.1 Introduction

This report presents the 2010 operations and maintenance activities associated with the Wellsville/Andover Landfill Site located in Wellsville and Andover townships, Allegany County, New York (Figure 1) and has been prepared by On-Site Technical Services, Inc., (On-Site) of Wellsville, New York. This report summarizes operation and maintenance activities performed from January 1 to December 31, 2010. Operation and maintenance requirements for this project are detailed in the *Operation and Maintenance Manual For The Wellsville/Andover Landfill Site Number 9-02-004 Allegany County, New York,* dated November 1997 (O&M Plan), prepared by Ecology and Environment Engineering, P.C. (E&E) with subsequent revisions. Revisions to the O&M Plan have been approved by the New York State Department of Environmental Conservation (NYSDEC) and the current O&M requirements are outlined in Section 2 (here after referred to as Approved O&M Plan). Other reports pertaining to 2010 operation and maintenance of this site include:

- *Spring 2010 Monitoring Event Summary Wellsville/Andover Landfill Site,* dated April 26, 2010.
- *Fall 2010 Monitoring Event Summary Wellsville/Andover Landfill Site,* dated October 21, 2010.

As part of ongoing O&M activities, starting in 2009 the NYSDEC is requiring a Periodic Review Report (PRR) be completed annually. The 2010 PRR, documenting that all Site Management requirements are being met, is included as Appendix A of this report.

1.2 Project Background

The Wellsville/Andover Landfill was operated by the Village of Wellsville from 1964 to 1983, accepting both municipal and industrial waste. The site was added to the New York State Superfund and the NYSDEC selected capping with waste consolidation as the remedial action in the Record of Decision (ROD) for the site (NYSDEC 1994). To accomplish the remedy, a contract to remove waste from the northwest and northeast fill areas, and consolidate and cap on the south/south-central fill area, (please see Figure 2) was awarded to IT Corporation and construction activities commenced in April 1996. Following consolidation, the fill was compacted and capped with a 19-acre cover system, which incorporates a passive landfill gas (LFG) venting system, a leachate collection and storage system and a groundwater cut-off trench. Construction activities concluded in September 1997. The leachate collection system gravity drains to the Leachate Sump

(LS-1), from which it is pumped into two 15,000-gal underground storage tanks. The Village of Wellsville transports water from the storage tanks to the Village of Wellsville publicly owned wastewater treatment plant (POTW) for treatment. The groundwater cutoff trench is intended to capture up-gradient groundwater from the north and east landfill perimeters prior to contacting waste within the landfill. The north side collection trench drains to Manhole 32 (MH-32) located at the northwest corner of the landfill, while the east side collection trench drains to Manhole 33 (MH-33) at the southeast corner of the landfill. Both MH-32 and MH-33 are piped to drain either to the leachate collection system or to the landfill perimeter surface water drainage channels. To date, water in MH-32 and MH-33 has been drained to the leachate collection system sump. The pipes from the manholes to the drainage channel are closed with removable plugs.

1.3 Summary of 2010 Monitoring, Inspection and Maintenance Activities

This section provides an overview of the monitoring, inspection and maintenance activities completed in 2010.

On-Site has completed the following monitoring events in accordance with procedures set forth in the Approved O&M Plan (Appendix B). Semiannual groundwater and residential monitoring events were conducted in April and September 2010. Details of these monitoring activities are provided in Section 3 through 7.

Quarterly inspections are conducted and documented on the Quarterly Inspection and Maintenance Checklist by Village of Wellsville personnel. Maintenance activities generally include annual mowing of the cap vegetation, leachate disposal, leachate collection system maintenance and maintenance of the water treatment unit at the LaDue residence (WAL-19). Quarterly inspection and maintenance checklists are included as Appendix C.

There were no additional maintenance activities conducted during 2010.

2.0 MONITORING, INSPECTION AND MAINTENANCE REQUIREMENTS

This section outlines monitoring, inspection and maintenance requirements specified by the Approved O&M Plan.

2.1 Monitoring Requirements

The analytical program for the site is based on the requirements of Title 6 NYCRR

Subdivision 360-2.11(c) and 360-2.17(f), which applies to groundwater, residential water supplies, surface water, sediment, leachate, and landfill gas. The most recent revisions were approved in May 2009 and began with the fall 2009 sampling event.

Table 2-1 presents the revised monitoring program, with the current analytical list presented as Table 2-2. Sampling locations are presented in Figure 2. Details of the revised monitoring requirements are provided below.

- A total of five monitoring wells and one residential water supply will be sampled for Volatile Organic Compounds (VOCs) during the spring sampling event. During the fall sampling events 16 monitoring wells will be sampled for field parameters, VOCs and metals. Surface water location SWS-1, Groundwater cut-off system locations MH-32 and MW-33, and the leachate sampling location LS-1 will be sampled annually in the fall event for the parameters listed on Table 2-1.
- The Village of Wellsville continues to maintain a water filtration system at residential location WAL-19 which is currently owned and occupied by Mr. and Mrs. LaDue at 3914 Snyder Road in Wellsville, NY 14895. This residence will continue to be sampled on a semi-annual basis for VOCs before the filter, inter-filter and after the filter. Residential locations WAL-2 and WAL-5 are sampled on an annual basis during the fall event.
- Static water level elevations are required to be measured in the monitoring wells and six piezometers located on and around the landfill cap during the fall sampling event. Water elevations are used to construct potentiometric maps. Table 2-3 provides a history of the 2010 static water elevations along with well construction information.
- Landfill gas monitoring and perimeter air monitoring are completed during the fall monitoring event for PID, LEL and O_2 levels.

2.2 Inspection and Maintenance Requirements

The inspection and maintenance requirements for the site are specified in the O&M Plan and include the following.

- Quarterly inspections and maintenance (if required) of cover system, leachate collection and storage system, gas venting system, storm water system, groundwater monitoring system, and facility access system (i.e. access roads and gates). Quarterly Inspection and Maintenance Checklists are provided within the O&M Plan and are completed by Village of Wellsville Department of Public Works personnel.
- Annual mowing of the vegetative cover is performed by Village of Wellsville personnel.

- The Village of Wellsville is responsible for maintenance of a water treatment unit at the LaDue residence, located at 3914 Synder Hill Road.

3.0 GROUNDWATER MONITORING RESULTS

Two groundwater monitoring events were completed during 2010. Prior to purging and collecting groundwater samples, static water levels were measured from the site monitoring wells and piezometers. The fall 2010 data were utilized to develop separate potentiometric maps for wells screened in overburden and wells screened in bedrock. The potentiometric maps for fall 2010 are included as Figures 3 and 4. Each contour represents a line of equivalent water table elevation. The direction of groundwater flow is from higher to lower elevation approximately perpendicular to the contours.

Groundwater samples were collected from the five required wells in March 2010, and 15 of 16 wells scheduled were sampled in September 2010 (MW-15S was not sampled due to insufficient water volume). Table 3-1 exhibits the detection frequency, minimum and maximum detection, NYSDEC Class GA Groundwater Standard (Class GA Standard) and the number of Class GA Standard exceedances for groundwater samples collected in 2009 and 2010. Table 3-2 lists the 2010 Class GA and NYSDOH Maximum Contaminant Level (MCL) exceedances by individual wells. Table 3-3 is a tabular listing of groundwater analytical results from the two sampling events completed in 2010. Monitoring well locations are presented in Figure 2. A discussion of the analytical results is provided below.

Inorganic Compounds (metals)

Groundwater samples were analyzed for fifteen inorganic compounds during the September 2010 sampling event (Table 2-2). As shown in Table 3-1, eight metals (Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium and Zinc) were detected in 2009. The same metals were detected in 2010. Iron, Manganese and Sodium exceeded Class GA standards in 2009 and 2010 and are the metals that exceed Class GA Standards on a frequent basis. Based upon NYSDEC request, concentration time trend plots for these three metals have been created. Plots, which include data from 1998 through 2010, are presented in Appendix D for monitoring wells that have shown NYSDEC Class GA Standard exceedances for these metals. Monitoring wells CW-3A, CW-3B, CW-4A, CW-4B, MW-3S, MW-4D, MW-5D, MW-5S, MW-15S, MW-17S, MW-17D, MW-18S and MW-18D are included. In general, no obvious increasing or decreasing time trends are apparent. The three metals have been detected at various

concentrations above standards at both upgradient and downgradient wells. These metals are common constituents of soil and often occur naturally at the concentrations detected in site groundwater.

VOCs

Groundwater from each well sampled during both the March and September 2010 sampling events were analyzed for VOCs, which include 36 compounds (Table 2-2). In 2009, 34 groundwater samples were analyzed for VOCs. Twenty groundwater samples were analyzed for VOCs in 2010. In 2009 and 2010 cDCE, TCE and Vinyl chloride were detected and exceeded Class GA Standards. These three VOCs most commonly exceed the Class GA Standard. Based upon NYSDEC request, concentration time trend plots for these three VOCs have been created. The plots include data from 1998 through 2010 and are included in Appendix D for monitoring wells that have shown NYSDEC Class GA Standard exceedances for these compounds. These monitoring wells include CW-3A, CW-3B, CW-4A, CW-4B, MW-3D, MW-4D, MW-5S, MW-5D, MW-11S, MW-15S, MW-16S and MW-18S. The VOC graphs show some trends as discussed below.

- Well CW-3A exhibited TCE at anomalous high results in June 2005, but has returned to lower levels the last ten samplings. cDCE has been fairly consistent the last five samplings, while Vinyl chloride has been non-detect except for in June 2005.
- CW-3B shows an increasing trend in the concentration of TCE. cDCE shows a slight increasing trend.
- CW-4A shows results as non-detect for TCE and Vinyl chloride the last ten years, while cDCE has shown a slight decreasing trend.
- CW-4B shows TCE and Vinyl chloride results as non-detect the last eight years and cDCE has been non-detect the last four years.
- MW-3D has shown non-detect or low level concentrations of cDCE, TCE and Vinyl chloride since 2004.
- MW-4D exhibits an apparent seasonal fluctuation in VOCs with an inverse proportional relationship to groundwater elevation. Elevated concentrations of primarily cDCE occur when groundwater elevations are low (generally fall) and then decrease when groundwater elevations are high (generally spring). However, this seasonal fluctuation is not represented in the graph for the period of 2003 to 2007 and 2009 to 2010 when substantial seasonal groundwater fluctuations were not observed. TCE has been non-detect the last eight samplings; while Vinyl chloride has been on a decreasing trend the last five

samplings.

- Well MW-5S exhibits a slight decreasing trend in cDCE, TCE and Vinyl chloride.
- MW-5D exhibits no obvious increasing or decreasing trend.
- MW-11S was sampled in June 1998 and then semi-annual starting in December 2004. Vinyl chloride has remained near or below detection limits. cDCE and TCE have shown a slight overall decreasing trend with intermediate variations of significant decreases during 2009.
- Well MW-15S has no discernable trends other than the detection of cDCE at concentrations between 0.011 mg/L and 0.057 mg/L, and TCE and Vinyl chloride have been mostly non-detect or at low level concentrations.
- MW-16S has been sampled on the same frequency as MW-11S. MW-16S cDCE, TCE and Vinyl chloride results are near or below detection limits.
- MW-17S does not seem to follow a time trend but does show a correlation between TCE and Vinyl chloride, while cDCE has shown results of non-detect to 0.13 mg/L.
- At MW-18S, no time trend is obvious, but there is a good correlation between cDCE and TCE, while Vinyl chloride has not been detected.

4.0 SURFACE WATER AND SEDIMENT MONITORING RESULTS

Surface water and sediment samples were not required during the March 2010 sampling event. Surface water and sediment sampling is required on an annual basis during the fall however, sampling was not conducted during the September 2010 event due to no flow (dry) conditions. Historic surface water and sediment results are presented in tables 4-1 and 4-2. SWS-1 is located at the downstream side of the culvert within the drainage ditch that leads to an unnamed tributary to Duffy Hollow Creek. Both the unnamed tributary and Duffy Hollow Creek are classified as NYSDEC Class C streams. Surface water seeps along the perimeter of the landfill were not observed active during 2010; therefore no seep samples were collected.

5.0 LEACHATE SUMP AND MANHOLE MONITORING RESULTS

Water samples are required to be collected at the leachate sump (LS-1) and two manholes (MH-32 and MH-33) annually. Sampling locations are presented in Figure 2. Table 5-1 exhibits the detection frequency, minimum and maximum detection for leachate sump and manhole samples collected in 2009 and 2010. Table 5-2 is a tabular listing of

2010 leachate sump and manhole analytical results. Wet Chemistry parameters are no longer required to be analyzed at Leachate sump sampling locations. Nitrate Nitrogen and Total Dissolved Solids (TDS) are required for groundwater cut-off system samples. A discussion of leachate sump and manhole analytical results is provided below.

Metals

Metals were analyzed in six leachate sump and manhole samples during 2009 and three samples during 2010. Metals detected in 2009 include Arsenic, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Selenium and Sodium. Metals detected in 2010 include Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium and Zinc.

VOCs

VOCs were analyzed in six leachate sump and manhole samples during 2009 and three samples during 2010 with cDCE and Vinyl chloride detected.

Wet Chemistry

Nitrate Nitrogen was detected in one of two samples during 2010. TDS was detected in three of three samples during 2009 and two of two samples during 2010.

6.0 AIR MONITORING RESULTS

Air monitoring at the landfill perimeter, gas vents and LCS locations was conducted during the September 2010 event utilizing a Photo Ionization Detector (PID) and an Oxygen (O_2)/Lower Explosive Limit (LEL) meter (please see Figure 5 for monitoring locations).

Prior to commencing air monitoring, the air monitoring instruments were properly calibrated according to manufacturer specifications. PID and LEL readings at the gas vents, LCS manholes and clean-out vents were generally high, and O_2 levels generally low, indicating the presence of methane gas. Stressed vegetation around the majority of gas vents and manholes further indicated the presence of methane gas. Vapor concentrations were often high enough to reach the maximum detection limit at many gas vents and manholes. Upwind and downwind PID and LEL readings at the landfill perimeter were not above background readings indicating no measurable organic vapors at the landfill perimeter. O_2 readings at the landfill perimeter were within normal range. All readings were recorded in tabular form and are presented in Table 6-1.

7.0 RESIDENTIAL WATER SUPPLY MONITORING RESULTS

Two residential water supply sampling events were completed during 2010. The sampling events were conducted in March and September 2010. Prior to the approved revisions to the O&M plan made in May 2009, there were 20 residential water supply locations in the monitoring program. The current monitoring schedule requires that one water supply (WAL-19) be sampled semi-annually (spring and fall) and the remaining two locations (WAL-2 and WAL-5) be sampled annually.

Table 7-1 presents an overview of residential sampling locations and sampling frequencies during 2010. Figure 2 shows the approximate sampling locations.

A total of eight residential water samples were collected in 2010. Table 7-2 exhibits the detection frequency, minimum and maximum detection, NYSDOH MCL, number of NYSDOH MCL exceedances, NYSDEC Class GA Standard and the number of Class GA Standard exceedances for both 2009 and 2010. Table 7-3 is a tabular listing of 2010 residential water analytical results. A discussion of the analytical results is provided below.

Metals

Metals detected during 2009 include Barium, Calcium, Copper, Iron, Magnesium, Manganese, Potassium, Sodium and Zinc. Metals detected in 2010 include Barium, Calcium, Copper, Iron, Magnesium, Manganese and Sodium. In 2009 and 2010, metals with either or both exceedances of the NYSDEC Class GA Standards and the NYSDOH MCLs include Iron, Manganese and Sodium.

VOCs

During 2009 and 2010, residential water samples were analyzed for VOCs with two parameters detected (cDCE and TCE). These detections were at WAL-19 prior to filtration and were below the NYSDOH MCLs and NYSDEC Class GA Standards in 2009 and 2010.

8.0 INSPECTIONS AND MAINTENANCE ACTIVITES

Quarterly Inspections and routine maintenance were performed by Village of Wellsville personnel and recorded on the Quarterly Inspection and Maintenance Checklist provided in the O&M Plan. Quarterly inspections were completed on March 31, June 23,

September 14 and December 30, 2010. No unresolved problems were noted on inspection forms. The 2010 completed inspection forms are included as Appendix C.

A description of maintenance activities performed during 2010 is provided below.

- Village of Wellsville personnel mowed the landfill cap in October 2010.
- A total of approximately 1,581,614 gallons of leachate was hauled from the Landfill to the Village of Wellsville POTW during 2010. The table below lists the total leachate gallons by year for the previous six years.

Year/Gallons	2004	2005	2006	2007	2008	2009	2010
	1,986,614	1,643,291	2,100,198	1,797,704	1,482,179	1,623,591	1,581,614

- The Village of Wellsville continues to maintain a water treatment unit at the Ladue (WAL-19) residence.

9.0 CONCLUSIONS

Monitoring and maintenance activities are being performed adequately at the Wellsville/Andover Landfill. Routine maintenance and inspections are being conducted to maintain the site. The site has been monitored for over 12 years following completion of the remedial action. This 2010 annual report is submitted as part of the Site Management Periodic Review required by the NYSDEC. An electronic copy of this report is included as Appendix E.

Table 2-1

Monitoring Requirements
Wellsville/Andover Landfill
Wellsville, New York

Location	Revised Sampling Frequency	Spring Analyte List[1]	Fall Analyte List[1]
Groundwater			
CW-3A	Annual - Fall	WL	Field, VOCs, Metals
CW-3B	Annual - Fall	WL	Field, VOCs, Metals
CW-4A	Annual - Fall	WL	Field, VOCs, Metals
CW-4B	Annual - Fall	WL	Field, VOCs, Metals
MW-15DA	NR	WL	NR
MW-15S	Annual - Fall	WL	Field, VOCs, Metals
MW-17D	Annual - Fall	WL	Field, VOCs, Metals
MW-17S	Annual - Fall	WL	Field, VOCs, Metals
MW-18D	Annual - Fall	WL	Field, VOCs, Metals
MW-18S	Annual - Fall	WL	Field, VOCs, Metals
MW-1D	NR	WL	NR
MW-3D	Annual - Fall	WL	Field, VOCs, Metals
MW-3S	Annual - Fall	WL	Field, VOCs, Metals
MW-4D	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-5D	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-5S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-11S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-16S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
Leachate			
LS-1	Annual - Fall	NR	Field, VOCs, Metals

Location	Revised Sampling Frequency	Spring Analyte List[1]	Fall Analyte List[1]
Residential Water Supply			
WAL-2	Annual - Fall	NR	Metals
WAL-5	Annual - Fall	NR	VOCs[6], Metals
WAL-19	Semiannual - Spring/Fall	VOCs[2,6]	VOCs[2,6]
Landfill Gas Monitoring			
Vents	Annual - Fall	NR	PID, LEL, O_2
Leachate Clean-outs	Annual - Fall	NR	PID, LEL, O_2
Manholes	Annual - Fall	NR	PID, LEL, O_2
Perimeter	Annual - Fall	NR	PID, LEL, O_2
Surface Water			
SWS-1	Annual - Fall	NR	Field, VOCs, Metals, Wet Chem[3]
Sediment			
SWS-1	Annual - Fall	NR	Field, VOCs, Metals, Wet Chem[3]
Groundwater Cut-Off System			
MH-32	Annual - Fall	NR	Field, VOCs, Metals, NO_3, TDS
MH-33	Annual - Fall	NR	Field, VOCs, Metals, NO_3, TDS

Reporting	
Spring Event	Summary Letter[4]
Fall Event	Summary Letter[4]
Annual	Detailed Annual Report[5]

Notes

(Revised monitoring prorgram is based on: April 3, 2009 On-Site letter *Site Monitoring Evaluation and Proposed Revised Monitoring Program*; NYSDEC May 12, 2009 response; and follow up e-mail.)

NR - Not required unless site conditions warrant (I.e., significant leachate breakout, leachate spill, etc.)

WL - Water level

[1] - Field = Field Parameters (pH, Conductivity, Dissolved Oxygen, Turbidity, Oxidation Reduction Potential)
- VOCs = Volatile Organic Compounds method 8260
- Metals = As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Na, Z
- NO_3 = Nitrate Nitrogen and TDS = Total Dissolved Solids

[2] WAL-19 tested for VOCs prior to filters, between filters and after filters

[3] Wet Chemistry - Color, TOC, Total Phenolics, Alkalinity, BOD, Cl, Br, SO_4, TDS, NO_3, NH_3, COD, TKN

[4] Letter reports will include a summary of the sampling event and provide the event's analytical report

[5] Annual reports will include details of the previous years monitoring and O&M activities along with potentiometric maps and comparison of results to standards and historic results

[6] Residential VOCs are tested using method 524.2

Table 2-2

Approved Analyte List
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Field Parameters
Specific Conductance
Temperature
Field pH
Oxygen Reduction Potential
Dissolved Oxygen
Turbidity

Inorganic Compounds
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Manganese
Magnesium
Nickel
Potassium
Selenium
Sodium
Zinc

Wet Chemistry
Nitrate Nitrogen
Total Dissolved Solids

Note:
Analyte list shown above pertains to groundwater, leachate, surface water and sediment samples.

Volatile Organic Compounds
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
m&p-Xylene
o-Xylene
Styrene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl chloride

Table 2-3

Well Construction and 2010 Static Water Level Information
Wellsville/Andover Landfill
Wellsville, New York

Well Number	Well Diameter (in)	TOC Elevation (ft amsl)	Protective Casing Elevation (ft amsl)	Ground Elevation (ft amsl)	Well Depth from TOC (ft) [1]	Screened Interval from Ground (ft)	Screened Bedrock or Overburden	3/24/2010 DTW From TOC (ft)	3/24/2010 Static Water Elevation (ft amsl)	9/10/2010 DTW From TOC (ft)	9/10/2010 Static Water Elevation (ft amsl)
MW-1D	2	2193.32	2193.75	2190.6	77.39	64 - 74	Bedrock	NM	NA	69.37	2123.95
MW-3D	2	2095.80	2096.07	2092.4	46.75	30 - 40	Bedrock	NM	NA	19.46	2076.34
MW-3S	2	2095.70	2095.96	2093.1	25.92	9 - 19	Overburden	NM	NA	11.48	2084.22
MW-4D	2	2092.22	2092.39	2090.3	24.63	12 - 22	Bedrock	12.78	2079.44	15.53	2076.69
MW-5D	2	2066.87	2067.26	2065.4	37.74	26.5 - 36.5	Bedrock	2.16	2064.71	3.32	2063.55
MW-5S	2	2067.30	2067.59	2065.5	21.20	10 - 20	Overburden	1.98	2065.32	3.30	2064.00
MW-7D	2	2012.13	2012.69	2009.6	47.97	35 - 45	Bedrock	NA	NA	NA	NA
MW-11S	2	2003.52	2003.86	2001.6	20.40	18-Aug	Overburden	4.54	1998.98	6.32	1997.20
MW-15S	2	2022.88	2023.05	2020.2	22.10	9 - 19	Overburden	NM	NA	21.83	2001.05
MW-15DA	2	2022.67	2023.08	2020.4	56.28	43 - 53	Bedrock	NM	NA	56.13	1966.54
MW-16D	2	1924.73	1925.25	1922.0	53.00	40 - 50	Bedrock	NM	NA	29.36	1895.37
MW-16S	2	1924.98	1925.15	1922.2	18.67	6 - 16	Overburden	7.71	1917.27	12.14	1912.84
MW-17D	4	2037.36	NA	2034.9	65.1	48 - 63 (open hole)	Bedrock	NM	NA	32.42	2004.94
MW-17S	2	2037.92	2038.12	2035.5	26.94	9 - 24	Overburden	NM	NA	10.22	2027.70
MW-18D	4	2066.19	NA	2062.6	28.50	24.5 - 39.5 (open hole)	Bedrock	NM	NA	13.92	2052.27
MW-18S	2	2064.60	2065.72	2063.0	20.49	4 - 19	Overburden	NM	NA	9.57	2055.03
CW-3A	2	2013.75	2013.90	2012.9	27.47	21 - 26	Overburden	NM	NA	8.82	2004.93
CW-3B	2	2013.90	2014.10	2012.9	37.70	33.5 - 38.5	Overburden	NM	NA	21.43	1992.47
CW-4A	2	2006.11	2006.35	2004.7	19.12	13 - 18	Overburden	NM	NA	5.69	2000.42
CW-4B	2	2005.84	2005.93	2004.7	30.16	25.5 - 30.5	Overburden	NM	NA	5.16	2000.68
PZ-1	2	2095.11	2095.27	2092.2	NM	6 - 13	Overburden/ Refuse	NM	NA	13.60	2081.51
PZ-2	2	2095.83	2096.13	2092.9	NM	14 - 24	Overburden/ Refuse	NM	NA	21.02	2074.81
PZ-3R	2	2085.50	2085.79	2084.0	NM	22.5 - 32.5	Overburden/ Refuse	NM	NA	30.90	2054.60
PZ-4	2	2067.13	2067.38	2064.4	NM	12 - 22	Overburden/ Refuse	NM	NA	26.19	2040.94
PZ-5	2	2059.71	2059.71	2056.7	NM	8 - 18	Overburden/ Refuse	NM	NA	10.74	2048.97
PZ-6	2	2042.18	2042.31	2039.2	NM	8 - 18	Overburden Refuse	NM	NA	21.04	2021.14

Notes:

ND - No Non-Aqueous Phase Liquid (NAPL) Detected
Dry - Insuffienct water volume
NM - Not Measured
NA - Not Applicable
NS - Not Sampled
[1] Well depth from TOC measured on March 26, 2007

Table 3-1

Summary of 2009 and 2010 Groundwater Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2009 Detection Frequency	2009 Minimum	2009 Maximum	2010 Detection Frequency	2010 Minimum	2010 Maximum	Class GA Standard	2009 Class GA Exceedances	2010 Class GA Exceedances
Inorganic Compounds									
Arsenic	0/32			0/15			0.025	0	0
Barium	26/32	0.021	0.259	11/15	0.031	0.09	1	0	0
Cadmium	0/32			0/15			0.005	0	0
Calcium	32/32	2.8	101	15/15	15.5	87.5			
Chromium	0/32			0/15			0.05	0	0
Copper	0/32			0/15			0.2	0	0
Iron	29/32	0.13	13	11/15	0.12	13.4	0.3	20	7
Lead	0/32			0/15			0.025	0	0
Magnesium	31/32	2.4	57.3	15/15	4	55			
Manganese	27/32	0.01	1.44	15/15	0.01	1.26	0.3	16	7
Nickel	0/32			0/15			0.1	0	0
Potassium	18/32	2	24	8/15	2.2	20.4			
Selenium	0/32			0/15			0.01	0	0
Sodium	32/32	1.7	56.5	15/15	6.6	51.8	20	12	6
Zinc	3/32	0.029	0.058	3/15	0.022	0.04			
Volatile Organic Compounds									
1,1,1-Trichloroethane	0/34			0/20			0.005	0	0
1,1,2,2-Tetrachloroethane	0/34			0/20			0.005	0	0
1,1,2-Trichloroethane	0/34			0/20			0.001	0	0
1,1-Dichloroethane	0/34			0/20			0.005	0	0
1,1-Dichloroethene	0/34			0/20			0.005	0	0
1,2-Dibromoethane	0/34			0/20					
1,2-Dichloroethane	0/34			0/20			0.0006	0	0
1,2-Dichloropropane	0/34			0/20			0.001	0	0
2-Butanone (MEK)	0/34			0/20					
2-Hexanone	0/34			0/20					
4-Methyl-2-pentanone	0/34			0/20					
Acetone	0/34			0/20					
Benzene	0/34			0/20			0.001	0	0
Bromodichloromethane	0/34			0/20					
Bromoform	0/34			0/20					
Bromomethane	0/34			0/20			0.005	0	0
Carbon disulfide	0/34			0/20					
Carbon tetrachloride	0/34			0/20			0.005	0	0
Chlorobenzene	0/34			0/20			0.005	0	0
Chloroethane	0/34			0/20			0.005	0	0
Chloroform	0/34			0/20			0.007	0	0
Chloromethane	0/34			0/20			0.005	0	0
cis-1,2-Dichloroethene	20/34	0.0052	1.6	14/20	0.0051	1.6	0.005	20	14
cis-1,3-Dichloropropene	0/34			0/20					
Dibromochloromethane	0/34			0/20					
Dichloromethane (Methylene chloride)	0/34			0/20			0.005	0	0
Ethyl benzene	0/34			0/20			0.005	0	0
m&p-Xylene	0/34			0/20					
o-Xylene	0/34			0/20					
Styrene	0/34			0/20			0.005	0	0
Tetrachloroethene	0/34			0/20			0.005	0	0
Toluene	0/34			0/20			0.005	0	0
trans-1,2-Dichloroethene	0/34			0/20			0.005	0	0
trans-1,3-Dichloropropene	0/34			0/20					
Trichloroethene	17/34	0.0051	2.3	10/20	0.0057	3	0.005	17	10
Vinyl chloride	7/34	0.022	0.35	8/20	0.012	0.26	0.002	7	8

Note:
Class GA Standard - NYSDEC Class GA Groundwater Standards

Please see page 1 for notes.

Table 3-2

2010 Groundwater Exceedances
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	March 2010 Result	September 2010 Result	Class GA Standard	NYSDOH MCL
CW-3A	Sodium		51.2	20	
CW-3A	cis-1,2-Dichloroethene		0.029	0.005	0.005
CW-3A	Trichloroethene		0.17	0.005	0.005
CW-3B	Sodium		20.2	20	
CW-3B	cis-1,2-Dichloroethene		0.09	0.005	0.005
CW-3B	Trichloroethene		0.29 D	0.005	0.005
CW-4A	Iron		0.53	0.3	0.3
CW-4A	Manganese		0.731	0.3	0.3
CW-4A	cis-1,2-Dichloroethene		0.0051	0.005	0.005
CW-4B	Manganese		0.573	0.3	0.3
MW-3D	cis-1,2-Dichloroethene		0.017	0.005	0.005
MW-3S	Sodium		31.5	20	
MW-4D	Iron		0.84	0.3	0.3
MW-4D	Manganese		0.54	0.3	0.3
MW-4D	cis-1,2-Dichloroethene	0.56	0.61	0.005	0.005
MW-4D	Vinyl chloride	0.24	0.26	0.002	0.002
MW-5D	Iron		0.39	0.3	0.3
MW-5D	Manganese		1.19	0.3	0.3
MW-5D	cis-1,2-Dichloroethene	1.6	1.1	0.005	0.005
MW-5D	Trichloroethene	0.099	0.071	0.005	0.005
MW-5D	Vinyl chloride	0.18	0.13	0.002	0.002
MW-5S	Iron		0.55	0.3	0.3
MW-5S	cis-1,2-Dichloroethene	0.077	0.35	0.005	0.005
MW-5S	Trichloroethene	0.013	0.041	0.005	0.005
MW-5S	Vinyl chloride	0.012	0.06	0.002	0.002
MW-11S	Manganese		1.26	0.3	0.3
MW-11S	cis-1,2-Dichloroethene	0.35 D	0.4 D	0.005	0.005
MW-11S	Trichloroethene	3 D	2.8 D	0.005	0.005
MW-11S	Vinyl chloride	0.027	0.029	0.002	0.002
MW-17D	Iron		3.82	0.3	0.3
MW-17D	Manganese		0.305	0.3	0.3
MW-17D	Sodium		32.2	20	
MW-17S	Sodium		51.8	20	
MW-17S	cis-1,2-Dichloroethene		0.058	0.005	0.005
MW-17S	Trichloroethene		0.012	0.005	0.005
MW-18D	Iron		13.4	0.3	0.3
MW-18D	Manganese		0.326	0.3	0.3
MW-18D	Sodium		20.9	20	
MW-18S	Iron		0.77	0.3	0.3
MW-18S	cis-1,2-Dichloroethene		0.0059	0.005	0.005
MW-18S	Trichloroethene		0.0057	0.005	0.005

Notes:
Class GA Standard - NYSDEC Class GA Groundwater Standard
NYSDOH MCL - New York State Department of Health Maximum Contaminant Level

Please see page 1 for notes.

Table3-3

2010 Groundwater Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	CW-3A 9/14/2010	CW-3B 9/14/2010	CW-4A 9/13/2010	CW-4B 9/13/2010	MW-3D 9/14/2010	MW-3S 9/14/2010	MW-4D 3/24/2010	MW-4D 9/14/2010	MW-5D 3/24/2010	MW-5D 9/13/2010
Inorganic Compounds										
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Barium	0.072	0.036	0.054	0.042	0.09	0.037	NR	0.02 U	NR	0.05
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NR	0.005 U	NR	0.005 U
Calcium	87.5	66.2	25.3	38.8	59.5	40.2	NR	22.3	NR	21.2
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Copper	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NR	0.02 U	NR	0.02 U
Iron	0.1 U	0.1 U	0.53	0.1 U	0.1 U	0.12	NR	0.84	NR	0.39
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NR	0.005 U	NR	0.005 U
Magnesium	4	33.6	15.1	16	31.5	29	NR	21.3	NR	15.6
Manganese	0.088	0.035	0.731	0.573	0.016	0.01	NR	0.54	NR	1.19
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NR	0.04 U	NR	0.04 U
Potassium	20.4	2.3	2 U	2 U	2 U	2.8	NR	2.7	NR	2 U
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Sodium	51.2	20.2	16.3	15.8	13.8	31.5	NR	8.2	NR	7
Zinc	0.02 U	0.02 U	0.022	0.02 U	0.02 U	0.022	NR	0.04	NR	0.02 U
Volatile Organic Compounds										
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,2-Dibromoethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.05 U	0.1 U	0.1 U
2-Hexanone	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.05 U	0.1 U	0.1 U
4-Methyl-2-pentanone	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.05 U	0.1 U	0.1 U
Acetone	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	0.2 U	0.2 U
Benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Bromoform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Bromomethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Carbon disulfide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.05 U	0.1 U	0.1 U
Carbon tetrachloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Chlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Chloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Chloroform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Chloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
cis-1,2-Dichloroethene	0.029	0.09	0.0051	0.005 U	0.017	0.005 U	0.56	0.61	1.6	1.1
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Ethyl benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
m&p-Xylene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
o-Xylene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Toluene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.05 U	0.05 U
Trichloroethene	0.17	0.29 D	0.005 U	0.005 U	0.005 U	0.005 U	0.025 U	0.025 U	0.099	0.071
Vinyl chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.24	0.26	0.18	0.13

Please see page 2 for notes.

Table3-3

2010 Groundwater Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	MW-5S 3/24/2010	MW-5S 9/13/2010	MW-11S 3/25/2010	MW-11S 9/14/2010	MW-16S 3/25/2010	MW-16S 9/14/2010	MW-17D 9/13/2010	MW-17S 9/13/2010	MW-18D 9/13/2010	MW-18S 9/13/2010
Inorganic Compounds										
Arsenic	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	NR	0.02 U	NR	0.031	NR	0.02 U	0.02 U	0.033	0.031	0.044
Cadmium	NR	0.005 U	NR	0.005 U	NR	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	NR	15.5	NR	56.4	NR	15.7	20.2	81.4	17.9	33.6
Chromium	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	NR	0.02 U	NR	0.02 U	NR	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Iron	NR	0.55	NR	0.18	NR	0.21	3.82	0.26	13.4	0.77
Lead	NR	0.005 U	NR	0.005 U	NR	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	NR	11.3	NR	33.6	NR	9.5	20.6	55	16.3	16.1
Manganese	NR	0.125	NR	1.26	NR	0.03	0.305	0.233	0.326	0.026
Nickel	NR	0.04 U	NR	0.04 U	NR	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Potassium	NR	2 U	NR	2 U	NR	2 U	4.6	3.7	2.7	2.2
Selenium	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sodium	NR	6.6	NR	18.6	NR	7.6	32.2	51.8	20.9	11.3
Zinc	NR	0.02 U	NR	0.02 U	NR	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Volatile Organic Compounds										
1,1,1-Trichloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dibromoethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichloropropane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2-Butanone (MEK)	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	0.02 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromodichloromethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromoform	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromomethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon disulfide	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Carbon tetrachloride	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chlorobenzene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloroethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloroform	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloromethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
cis-1,2-Dichloroethene	0.077	0.35	0.35 D	0.4 D	0.005 U	0.005 U	0.005 U	0.058	0.005 U	0.0059
cis-1,3-Dichloropropene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Dibromochloromethane	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Dichloromethane (Methylene chloride)	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Ethyl benzene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
m&p-Xylene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Styrene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Toluene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.013 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Trichloroethene	0.013	0.041	3 D	2.8 D	0.005 U	0.005 U	0.005 U	0.012	0.005 U	0.0057
Vinyl chloride	0.012	0.06	0.027	0.029	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Notes:
U - Concentration not detected at specified detection limit
D - Concentration diluted **NR** - Not required

Please see page 2 for notes.

Table 4-1

2008 and 2009 Surface Water Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L except where noted)

Parameter	SWS-1 3/24/2008	SWS-1 4/28/2009	Class C Standard
Inorganic Compounds			
Arsenic	0.01 U	0.01 U	
Barium	0.0213	0.045	
Cadmium	0.005 U	0.005 U	
Calcium	23.2	61.8	
Chromium	0.01 U	0.01 U	
Copper	0.02 U	0.02 U	
Iron	0.452	0.31	
Lead	0.005 U	0.005 U	0.008
Magnesium	9.88	23.3	
Manganese	0.01 U	0.515	
Nickel	0.04 U	0.04 U	0.0082
Potassium	2.69	3.8	
Selenium	0.01 U	0.01 U	
Sodium	13.4	35.8	
Zinc	0.0326	0.106	
Volatile Organic Compounds			
1,1,1-Trichloroethane	0.005 U	0.005 U	
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	
1,1,2-Trichloroethane	0.005 U	0.005 U	
1,1-Dichloroethane	0.005 U	0.005 U	
1,1-Dichloroethene	0.005 U	0.005 U	
1,2-Dibromoethane	0.005 U	0.005 U	
1,2-Dichloroethane	0.005 U	0.005 U	
1,2-Dichloropropane	0.005 U	0.005 U	
2-Butanone (MEK)	0.01 U	0.01 U	
2-Hexanone	0.01 U	0.01 U	
4-Methyl-2-pentanone	0.01 U	0.01 U	
Acetone	0.02 U	0.02 U	
Benzene	0.005 U	0.005 U	
Bromodichloromethane	0.005 U	0.005 U	
Bromoform	0.005 U	0.005 U	
Bromomethane	0.005 U	0.005 U	
Carbon disulfide	0.01 U	0.01 U	
Carbon tetrachloride	0.005 U	0.005 U	
Chlorobenzene	0.005 U	0.005 U	0.005
Chloroethane	0.005 U	0.005 U	
Chloroform	0.005 U	0.005 U	
Chloromethane	0.005 U	0.005 U	
cis-1,2-Dichloroethene	0.005 U	0.005 U	
cis-1,3-Dichloropropene	0.005 U	0.005 U	
Dibromochloromethane	0.005 U	0.005 U	
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.2

Parameter	SWS-1 3/24/2008	SWS-1 4/28/2009	Class C Standard
VOC's Continued			
Ethyl benzene	0.005 U	0.005 U	
m&p-Xylene	0.005 U	0.005 U	
o-Xylene	0.005 U	0.005 U	
Styrene	0.005 U	0.005 U	
Tetrachloroethene	0.005 U	0.005 U	
Toluene	0.005 U	0.005 U	6
trans-1,2-Dichloroethene	0.005 U	0.005 U	
trans-1,3-Dichloropropene	0.005 U	0.005 U	
Trichloroethene	0.005 U	0.005 U	0.04
Vinyl chloride	0.005 U	0.005 U	
Wet Chemistry			
Alkalinity	94.5	242	
Ammonia Nitrogen	0.05 U	0.058	
Biochemical Oxygen Demand	2 U	2 U	
Bromide	1 U	1 U	
Chemical Oxygen Demand	11.3	30.2	
Chloride	22.4	70.7	
Color (True) (C.U.)	20	35	
Hardness	96	270	
Sulfate	5.2	3.1	
Total Dissolved Solids	152	373	500
Total Kjeldahl Nitrogen	0.354	0.76	
Total Organic Carbon (TOC)	4.73	12.7	
Total Phenolics	0.005 U	0.005 U	
Turbidity (NTU)	8.1	3.79	

Class C Standard - NYSDEC Class C Surface Water Standard
Concentrations in bold exceed Class C Standards
U - Concentration not detected at specified detection limit

Table 4-2

2008 and 2009 Sediment Analytical Results
Wellsville/Andover Landfill
(mg/Kg except where noted)

Parameter	SWS-1 3/24/2008	SWS-1 4/28/2009
Inorganic Compounds		
Arsenic	16	10.3
Barium	120	89.4
Cadmium	1.17 U	1.4 U
Calcium	20500	17200
Chromium	18.7	13.8
Copper	24.9	20.9
Iron	28900	19700
Lead	19.1	14
Magnesium	4910	3680
Manganese	1030	845
Nickel	27.5	19
Potassium	2630	2490
Selenium	2.35 U	2.8 U
Sodium	235 U	280 U
Zinc	2610	2670
Volatile Organic Compounds		
1,1,1-Trichloroethane	0.012 U	0.014 U
1,1,2,2-Tetrachloroethane	0.012 U	0.014 U
1,1,2-Trichloroethane	0.012 U	0.014 U
1,1-Dichloroethane	0.012 U	0.014 U
1,1-Dichloroethene	0.012 U	0.014 U
1,2-Dibromoethane	0.012 U	0.014 U
1,2-Dichloroethane	0.012 U	0.014 U
1,2-Dichloropropane	0.012 U	0.014 U
2-Butanone (MEK)	0.023 U	0.029 U
2-Hexanone	0.023 U	0.029 U
4-Methyl-2-pentanone	0.023 U	0.029 U
Acetone	0.047 U	0.1
Benzene	0.012 U	0.014 U
Bromodichloromethane	0.012 U	0.014 U
Bromoform	0.012 U	0.014 U
Bromomethane	0.012 U	0.014 U
Carbon disulfide	0.023 U	0.029 U
Carbon tetrachloride	0.012 U	0.014 U
Chlorobenzene	0.012 U	0.014 U
Chloroethane	0.012 U	0.014 U
Chloroform	0.012 U	0.014 U
Chloromethane	0.012 U	0.014 U
cis-1,2-Dichloroethene	0.012 U	0.014 U
cis-1,3-Dichloropropene	0.012 U	0.014 U
Dibromochloromethane	0.012 U	0.014 U
Dichloromethane (Methylene chloride)	0.012 U	0.014 U

Parameter	SWS-1 3/24/2008	SWS-1 4/28/2009
VOC's Continued		
Ethyl benzene	0.012 U	0.014 U
m&p-Xylene	0.012 U	0.014 U
o-Xylene	0.012 U	0.014 U
Styrene	0.012 U	0.014 U
Tetrachloroethene	0.012 U	0.014 U
Toluene	0.012 U	0.057
trans-1,2-Dichloroethene	0.012 U	0.014 U
trans-1,3-Dichloropropene	0.012 U	0.014 U
Trichloroethene	0.012 U	0.014 U
Vinyl chloride	0.012 U	0.014 U
Wet Chemistry		
Alkalinity	4620	5120
Ammonia Nitrogen	27.5	61
Biochemical Oxygen Demand	554	1510
Bromide	23.5 U	29 U
Chemical Oxygen Demand	114000	67100
Chloride	46.9 U	365
Hardness	5450	
Sulfate	46.9 U	58 U
Total Kjeldahl Nitrogen	1890	1940
Total Organic Carbon (TOC)	16300	27500
Total Phenolics	0.235 U	0.29 U
Total Solids (%)	42.6	34.6

Note:
U - Concentration not detected at specified detection limit

Table 5-1

2009 and 2010 Summary of Leachate Sump and Manhole Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2009 Detection Frequency	2009 Minimum	2009 Maximum	2010 Detection Frequency	2010 Minimum	2010 Maximum
Inorganic Compounds						
Arsenic	1/6	0.021	0.021	0/3		
Barium	6/6	0.054	0.161	3/3	0.034	0.177
Cadmium	0/6			0/3		
Calcium	6/6	74	137	3/3	105	141
Chromium	0/6			0/3		
Copper	0/6			0/3		
Iron	6/6	0.93	55.2	3/3	0.91	46.8
Lead	0/6			0/3		
Magnesium	6/6	23.9	33.7	3/3	22.1	37.1
Manganese	6/6	1.88	4.69	3/3	0.542	4.93
Nickel	0/6			0/3		
Potassium	5/6	2.3	5.4	3/3	2.1	6.7
Selenium	1/6	0.015	0.015	0/3		
Sodium	6/6	9.2	17.8	3/3	12.1	24.8
Zinc	0/6			1/3	0.022	0.022
Volatile Organic Compounds						
1,1,1-Trichloroethane	0/6			0/3		
1,1,2,2-Tetrachloroethane	0/6			0/3		
1,1,2-Trichloroethane	0/6			0/3		
1,1-Dichloroethane	0/6			0/3		
1,1-Dichloroethene	0/6			0/3		
1,2-Dibromoethane	0/6			0/3		
1,2-Dichloroethane	0/6			0/3		
1,2-Dichloropropane	0/6			0/3		
2-Butanone (MEK)	0/6			0/3		
2-Hexanone	0/6			0/3		
4-Methyl-2-pentanone	0/6			0/3		
Acetone	0/6			0/3		
Benzene	0/6			0/3		
Bromodichloromethane	0/6			0/3		
Bromoform	0/6			0/3		
Bromomethane	0/6			0/3		
Carbon disulfide	0/6			0/3		
Carbon tetrachloride	0/6			0/3		
Chlorobenzene	0/6			0/3		
Chloroethane	0/6			0/3		
Chloroform	0/6			0/3		
Chloromethane	0/6			0/3		
cis-1,2-Dichloroethene	6/6	0.025	1.2	2/3	0.0073	0.035
cis-1,3-Dichloropropene	0/6			0/3		
Dibromochloromethane	0/6			0/3		
Dichloromethane (Methylene chloride)	0/6			0/3		
Ethyl benzene	0/6			0/3		
m&p-Xylene	0/6			0/3		
o-Xylene	0/6			0/3		
Styrene	0/6			0/3		
Tetrachloroethene	0/6			0/3		
Toluene	0/6			0/3		
trans-1,2-Dichloroethene	0/6			0/3		
trans-1,3-Dichloropropene	0/6			0/3		
Trichloroethene	0/6			0/3		
Vinyl chloride	3/6	0.059	0.2	1/3	0.077	0.077
Wet Chemistry						
Nitrate Nitrogen				1/2	0.92	0.92
Total Dissolved Solids	3/3	320	454	2/2	410	684

Table 5-2

2010 Leachate Sump and Manhole Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	LS-1 9/14/2010	MH-32 9/15/2010	MH-33 9/15/2010
Inorganic Compounds			
Arsenic	0.01 U	0.01 U	0.01 U
Barium	0.12	0.177	0.034
Cadmium	0.005 U	0.005 U	0.005 U
Calcium	125	141	105
Chromium	0.01 U	0.01 U	0.01 U
Copper	0.02 U	0.02 U	0.02 U
Iron	1.92	46.8	0.91
Lead	0.005 U	0.005 U	0.005 U
Magnesium	31.2	37.1	22.1
Manganese	1.87	4.93	0.542
Nickel	0.04 U	0.04 U	0.04 U
Potassium	4.6	6.7	2.1
Selenium	0.01 U	0.01 U	0.01 U
Sodium	21.2	24.8	12.1
Zinc	0.02 U	0.022	0.02 U
Volatile Organic Compounds			
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U
1,2-Dibromoethane	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U
2-Hexanone	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone	0.01 U	0.01 U	0.01 U
Acetone	0.02 U	0.02 U	0.02 U
Benzene	0.005 U	0.005 U	0.005 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U
Bromoform	0.005 U	0.005 U	0.005 U
Bromomethane	0.005 U	0.005 U	0.005 U
Carbon disulfide	0.01 U	0.01 U	0.01 U
Carbon tetrachloride	0.005 U	0.005 U	0.005 U
Chlorobenzene	0.005 U	0.005 U	0.005 U
Chloroethane	0.005 U	0.005 U	0.005 U
Chloroform	0.005 U	0.005 U	0.005 U
Chloromethane	0.005 U	0.005 U	0.005 U
cis-1,2-Dichloroethene	0.0073	0.035	0.005 U
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.005 U

Parameter	LS-1 9/14/2010	MH-32 9/15/2010	MH-33 9/15/2010
VOC's Continued			
Ethyl benzene	0.005 U	0.005 U	0.005 U
m&p-Xylene	0.005 U	0.005 U	0.005 U
o-Xylene	0.005 U	0.005 U	0.005 U
Styrene	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U
Toluene	0.005 U	0.005 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U
Trichloroethene	0.005 U	0.005 U	0.005 U
Vinyl chloride	0.005 U	0.077	0.005 U
Wet Chemistry			
Nitrate Nitrogen	NR	0.5 U	0.92
Total Dissolved Solids	NR	684	410

Notes:
U - Concentration not detected at specified detection limit
NR - Not required

Table 6-1

Fall 2010 Air Monitoring Results
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Point	Date	PID (ppm)	O_2 (%)	LEL (%)
V-1	9/21/2010	0.0	20.9	0
V-2	9/21/2010	0.0	20.9	15
V-3	9/21/2010	0.1	20.4	93
V-4	9/21/2010	2.1	20.9	30
V-5	9/21/2010	0.4	20.9	16
V-6	9/21/2010	0.6	20.9	3
V-7	9/21/2010	0.0	20.9	0
V-8	9/21/2010	2.2	20.6	38
V-9	9/21/2010	8.1	20.1	44
V-10	9/21/2010	0.0	20.9	0
V-11	9/21/2010	1.4	20.5	33
V-12	9/21/2010	0.0	20.9	0
V-13	9/21/2010	0.2	20.9	32
V-14	9/21/2010	0.0	19.8	>100
V-15	9/21/2010	0.0	20.4	50
V-16	9/21/2010	0.0	20.9	12
V-17	9/21/2010	0.1	20.9	8
V-18	9/21/2010	0.3	19.9	61
V-19	9/21/2010	0.0	20.9	0
V-20	9/21/2010	0.0	20.9	1
V-21	9/21/2010	0.0	20.9	0
L-16[1]	9/21/2010	0.0	20.9	0
L-17	9/21/2010	0.0	20.9	0
L-19	9/21/2010	0.0	0.8	>100
L-21[1]	9/21/2010	0.0	14.8	>100
L-23[1]	9/21/2010	0.3	18.7	>100
L-25	9/21/2010	0.0	0.5	>100
L-27	9/21/2010	0.0	0.6	>100
L-29	9/21/2010	2.4	0.7	>100
L-31	9/21/2010	0.8	1.0	>100
MH-6	9/21/2010	0.0	4.1	>100
MH-7	9/21/2010	0.0	4.1	>100
MH-8	9/21/2010	0.0	6.9	>100
MH-9	9/21/2010	3.2	15.7	>100
MH-10	9/21/2010	2.8	18.6	>100
MH-11	9/21/2010	0.0	11.8	>100
MH-12	9/21/2010	0.0	20.6	14
MH-13	9/21/2010	0.3	2.9	>100
MH-32	9/21/2010	0.0	20.9	0
MH-33	9/21/2010	2.2	20.9	0
Upwind	9/21/2010	0.0	20.9	0
Downwind-1	9/21/2010	0.0	20.9	0
Downwind-2	9/21/2010	0.0	20.9	0
Downwind-3	9/21/2010	0.0	20.9	0

Notes:
Meters: Rae Systems Multi-Rae Plus gas meter
Background Readings:
PID = 0.0 O_2 = 20.9 LEL = 0
Weather: Sunny 78F, 5-15 mph winds with strong gusts from the south
Monitored By:K. Dye
[1] - Cap ajar/open to air

Table 7-1

Summary of 2010 Residential Water Supply Sampling
Wellsville/Andover Landfill
Wellsville, New York

Location	Name	Water Source	Sampled March 10	Sampled Sept 10
WAL-2	Mr. Phil Rosini & Ms. Rosalie Rosini 210 East Linden Ave E. Rochester, NY 14445	Well[1,2] 105 ft.	NR	9/18/2010
WAL -5	Mr. Eugene Ormsby 4011 Duffy Hollow Road Wellsville, NY 14895	Spring[1,2]	NR	9/15/2010
WAL-19	Mr. Daniel & Mrs. Barbara LaDue 3914 Snyder Road Wellsville, NY 14895	Spring[1]	3/24/2010	9/15/2010

Notes:

[1] Water source information from Remedial Investigation Report, Wellsville/Andover Landfill Site, November 1993, prepared by Ecology & Environment

[2] Water source information from Phase II State Superfund Investigation Report, Wellsville/Andover Landfill Site, December 1986, prepared by Malcolm Pirnie

Table 7-2

2009 and 2010 Summary of Residential Water Supply Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2009 Detection Frequency	2009 Minimum	2009 Maximum	2010 Detection Frequency	2010 Minimum	2010 Maximum	NYSDOH MCL	2009 MCL Exceedances	2010 MCL Exceedances	Class GA Standard	2009 Class GA Exceedances	2010 Class GA Exceedances
Inorganic Compounds												
Arsenic	0/4			0/2			0.05	0	0	0.025	0	0
Barium	3/4	0.0091	0.0327	2/2	0.023	0.026	1	0	0	1	0	0
Cadmium	0/4			0/2			0.01	0	0	0.005	0	0
Calcium	4/4	7.8	50.2	2/2	26.2	42.5						
Chromium	0/4			0/2			0.05	0	0	0.05	0	0
Copper	2/4	0.0412	0.042	1/2	0.044	0.044	1	0	0	0.2	0	0
Iron	2/4	0.824	0.88	1/2	0.64	0.64	0.3	2	1	0.3	2	1
Lead	0/4			0/2			0.05	0	0	0.025	0	0
Magnesium	4/4	3.42	17.8	2/2	10.8	15.8						
Manganese	2/4	0.773	1.01	1/2	0.725	0.725	0.3	2	1	0.3	2	1
Nickel	0/4			0/2						0.1	0	0
Potassium	2/4	0.764	1.89	0/2								
Selenium	0/4			0/2			0.01	0	0	0.01	0	0
Sodium	4/4	1.9	44.8	2/2	5.4	47.1				20	2	1
Zinc	3/4	0.0141	0.0522	0/2								
Semi-Volatile Organic Compounds												
1,2,3-Trichlorobenzene	0/4			0/7			0.005	0	0	0.005	0	0
1,2,4-Trichlorobenzene	0/4			0/7			0.005	0	0	0.005	0	0
Hexachlorobutadiene	0/4			0/7						0.0005	0	0
Naphthalene	0/4			0/7								
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	0/4			0/7			0.005	0	0	0.005	0	0
1,1,1-Trichloroethane	0/8			0/7			0.005	0	0	0.005	0	0
1,1,2,2-Tetrachloroethane	0/8			0/7			0.005	0	0	0.005	0	0
1,1,2-Trichloroethane	0/8			0/7			0.005	0	0	0.001	0	0
1,1-Dichloroethane	0/8			0/7			0.005	0	0	0.005	0	0
1,1-Dichloroethene	0/8			0/7			0.005	0	0	0.005	0	0
1,1-Dichloropropene	0/4			0/7								
1,2,3-Trichloropropane	0/4			0/7						0.00004	0	0
1,2,4-Trimethylbenzene	0/4			0/7			0.005	0	0	0.005	0	0
1,2-Dibromo-3-chloropropane	0/4			0/7						0.00004	0	0
1,2-Dibromoethane	0/8			0/7								
1,2-Dichlorobenzene	0/4			0/7			0.005	0	0	0.003	0	0
1,2-Dichloroethane	0/8			0/7						0.0006	0	0
1,2-Dichloropropane	0/8			0/7						0.001	0	0
1,3,5-Trimethylbenzene	0/4			0/7			0.005	0	0	0.005	0	0
1,3-Dichlorobenzene	0/4			0/7			0.005	0	0	0.003	0	0
1,3-Dichloropropane	0/4			0/7			0.005	0	0	0.005	0	0
1,4-Dichlorobenzene	0/4			0/7			0.005	0	0	0.003	0	0

Please see page 2 for notes.

Table 7-2

2009 and 2010 Summary of Residential Water Supply Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2009 Detection Frequency	2009 Minimum	2009 Maximum	2010 Detection Frequency	2010 Minimum	2010 Maximum	NYSDOH MCL	2009 MCL Exceedances	2010 MCL Exceedances	Class GA Standard	2009 Class GA Exceedances	2010 Class GA Exceedances
VOC's Continued												
2,2-Dichloropropane	0/4			0/7			0.005	0	0	0.005	0	0
2-Chlorotoluene				0/7			0.005		0	0.005		0
4-Chlorotoluene				0/7			0.005		0	0.005		0
Benzene	0/8			0/7			0.005	0	0	0.001	0	0
Bromobenzene	0/4			0/7			0.005	0	0	0.005	0	0
Bromochloromethane	0/4			0/7			0.005	0	0	0.005	0	0
Bromodichloromethane	0/8			0/7								
Bromoform	0/8			0/7								
Bromomethane	0/8			0/7			0.005	0	0	0.005	0	0
Carbon tetrachloride	0/8			0/7			0.005	0	0	0.005	0	0
Chlorobenzene	0/8			0/7			0.005	0	0	0.005	0	0
Chloroethane	0/8			0/7			0.005	0	0	0.005	0	0
Chloroform	0/8			0/7			0.005	0	0	0.007	0	0
Chloromethane	0/8			0/7						0.005	0	0
cis-1,2-Dichloroethene	1/8	0.0025	0.0025	2/7	0.0021	0.0027				0.005	0	0
cis-1,3-Dichloropropene	0/8			0/7								
Dibromochloromethane	0/8			0/7								
Dibromomethane	0/4			0/7			0.005	0	0	0.005	0	0
Dichlorodifluoromethane	0/4			0/7			0.005	0	0	0.005	0	0
Dichloromethane (Methylene chloride)	0/8			0/7			0.005	0	0	0.005	0	0
Ethyl benzene	0/8			0/7			0.005	0	0	0.005	0	0
Isopropylbenzene	0/4			0/7			0.005	0	0	0.005	0	0
m&p-Xylene	0/4			0/7								
Methyl tert-butyl ether (MTBE)				0/7								
n-Butylbenzene	0/4			0/7			0.005	0	0	0.005	0	0
n-Propylbenzene	0/4			0/7			0.005	0	0	0.005	0	0
o-Xylene	0/4			0/7								
p-Isopropyltoluene				0/7						0.005		0
sec-Butylbenzene	0/4			0/7						0.005	0	0
Styrene	0/8			0/7			0.005	0	0	0.005	0	0
Tert-Butyl Alcohol				0/7								
tert-Butylbenzene	0/4			0/7						0.005	0	0
Tetrachloroethene	0/8			0/7			0.005	0	0	0.005	0	0
Toluene	0/8			0/7			0.005	0	0	0.005	0	0
trans-1,2-Dichloroethene	0/8			0/7						0.005	0	0
trans-1,3-Dichloropropene	0/8			0/7								
Trichloroethene	1/8	0.0026	0.0026	2/7	0.0022	0.0027	0.005	0	0	0.005	0	0
Trichlorofluoromethane	0/4			0/7			0.005	0	0	0.005	0	0
Vinyl chloride	0/8			0/7			0.005	0	0	0.002	0	0

NYSDOH MCL - NYSDOH Maximum Contaminent Level **Class GA Standard** - NYSDEC Class GA Groundwater Standards

Please see page 2 for notes.

Table 7-3

2010 Residential Water Supply Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	WAL19PRE-0310 3/24/2010	WAL19PRE-0910 9/15/2010	WAL19INTER-0310 3/24/2010	WAL19INTER-0910 9/15/2010	WAL19POST-0310 3/24/2010	WAL19POST-0910 9/15/2010	WAL2-0910 9/18/2010	WAL5-0910 9/15/2010
Inorganic Compounds								
Arsenic	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Barium	NR	NR	NR	NR	NR	NR	0.026	0.023
Cadmium	NR	NR	NR	NR	NR	NR	0.005 U	0.005 U
Calcium	NR	NR	NR	NR	NR	NR	42.5	26.2
Chromium	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Copper	NR	NR	NR	NR	NR	NR	0.02 U	0.044
Iron	NR	NR	NR	NR	NR	NR	0.64	0.1 U
Lead	NR	NR	NR	NR	NR	NR	0.05 U	0.05 U
Magnesium	NR	NR	NR	NR	NR	NR	15.8	10.8
Manganese	NR	NR	NR	NR	NR	NR	0.725	0.01 U
Nickel	NR	NR	NR	NR	NR	NR	0.04 U	0.04 U
Potassium	NR	NR	NR	NR	NR	NR	2 U	2 U
Selenium	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Sodium	NR	NR	NR	NR	NR	NR	47.1	5.4
Zinc	NR	NR	NR	NR	NR	NR	0.02 U	0.02 U
Semi-Volalite Organic Compounds								
1,2,3-Trichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,4-Trichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Hexachlorobutadiene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Naphthalene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,1-Trichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,2,2-Tetrachloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,2-Trichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,3-Trichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,4-Trimethylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dibromo-3-chloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dibromoethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3,5-Trimethylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,4-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
2,2-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
2-Chlorotoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
4-Chlorotoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Benzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromochloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromodichloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromoform	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromomethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Carbon tetrachloride	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloroform	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
cis-1,2-Dichloroethene	0.0021	0.0027	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
cis-1,3-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dibromochloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dibromomethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dichlorodifluoromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U

Please see page 2 for notes.

Table 7-3

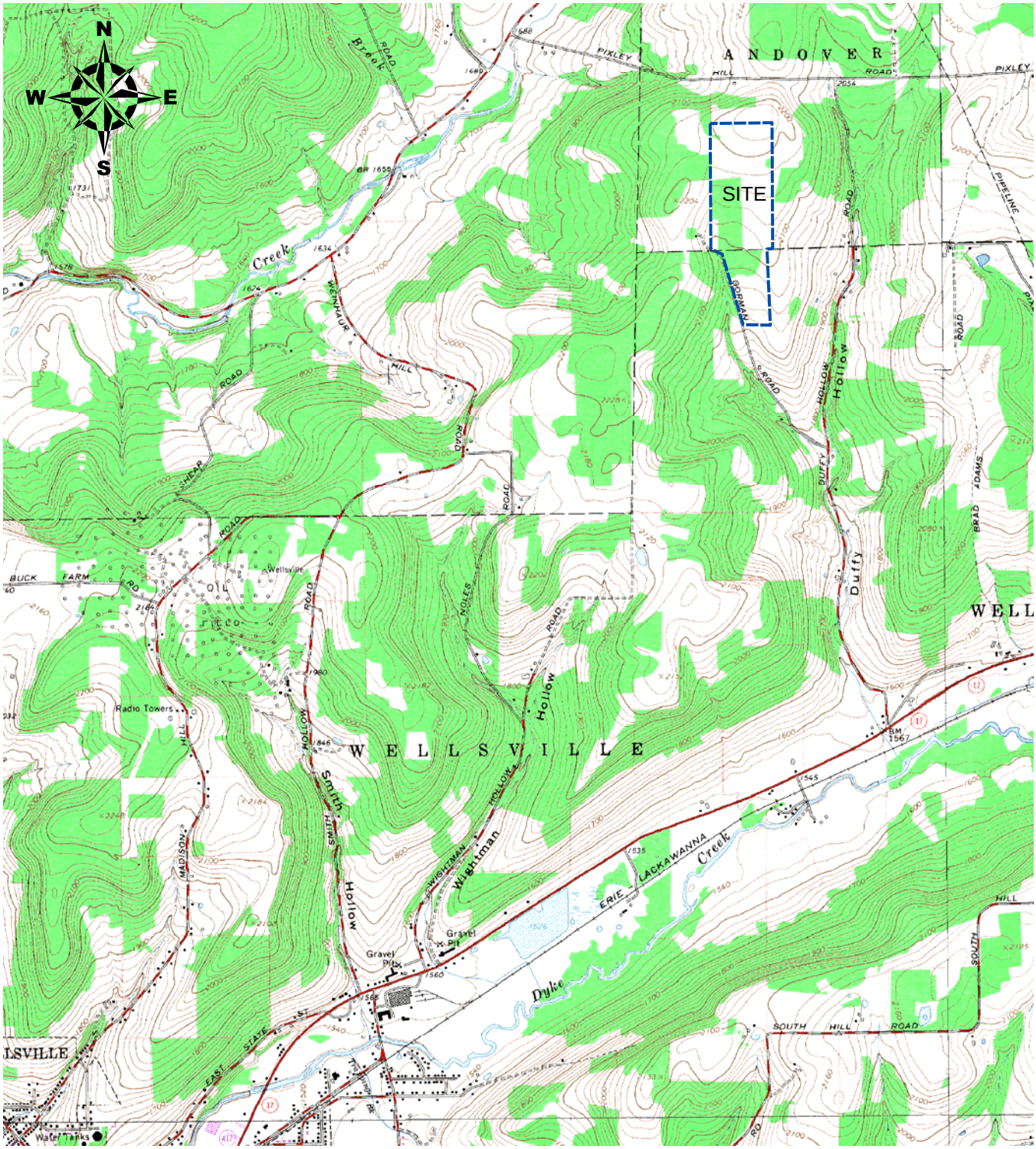
2010 Residential Water Supply Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	WAL19PRE-0310 3/24/2010	WAL19PRE-0910 9/15/2010	WAL19INTER-0310 3/24/2010	WAL19INTER-0910 9/15/2010	WAL19POST-0310 3/24/2010	WAL19POST-0910 9/15/2010	WAL2-0910 9/18/2010	WAL5-0910 9/15/2010
VOC's Continued								
Dichloromethane (Methylene chloride)	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Ethyl benzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Isopropylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
m&p-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NR	0.001 U
Methyl tert-butyl ether (MTBE)	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
n-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
n-Propylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
o-Xylene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
p-Isopropyltoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
sec-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Styrene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Tert-Butyl Alcohol	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NR	0.02 U
tert-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Tetrachloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Toluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
trans-1,2-Dichloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
trans-1,3-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Trichloroethene	0.0022	0.0027	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Trichlorofluoromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Vinyl chloride	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U

Notes:
U - Concentration not detected at specified detection limit
NR - Not required

Please see page 2 for notes.

SITE LOCATION



SOURCE: WELLSVILLE NORTH, USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, DATED 1965.
NOTE: GORMAN ROAD IS NOW SYNDER ROAD.

3,000 1,500 0 3,000
Feet

1 inch = 3,000 feet

Legend

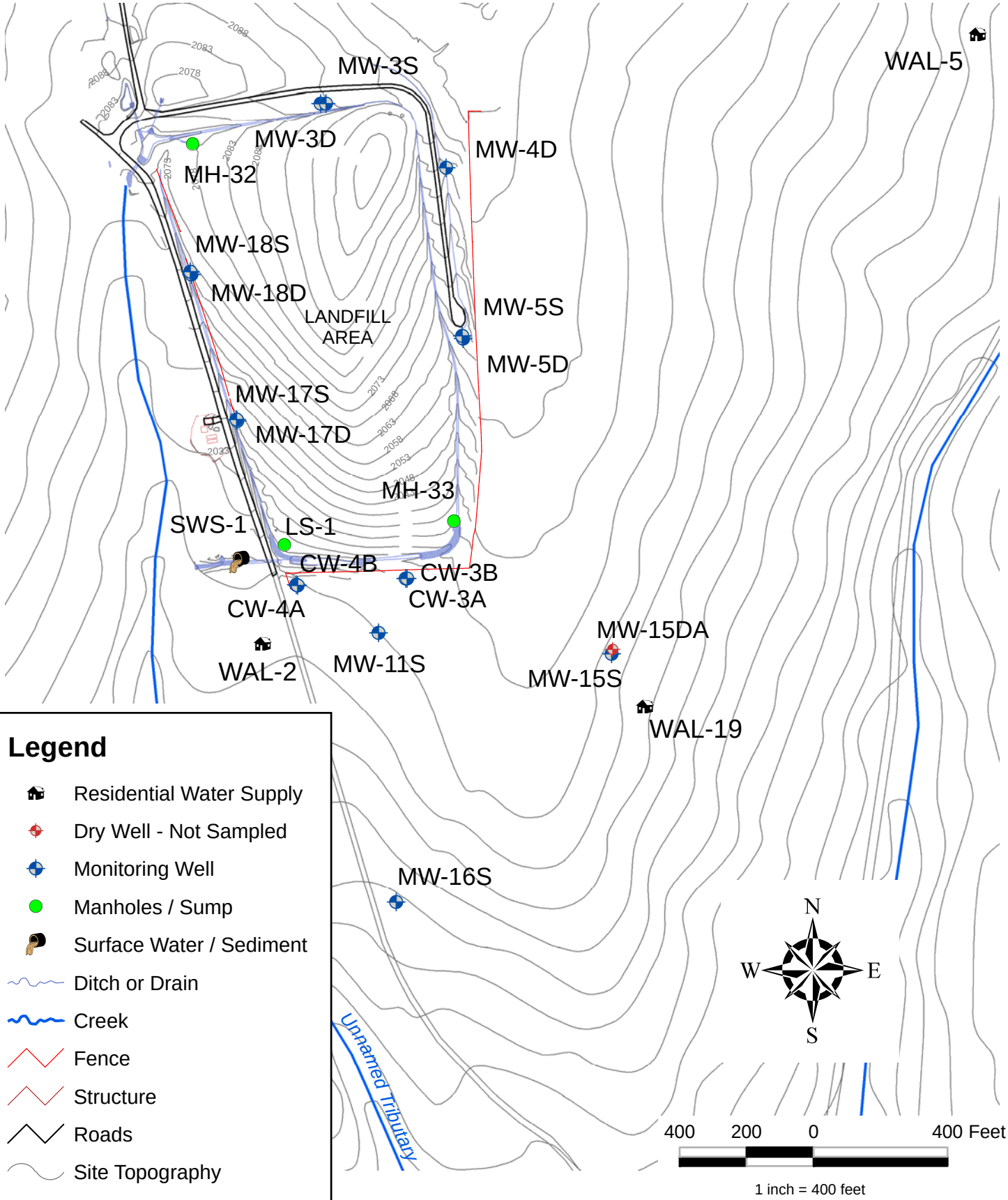
Approximate Site Boundary

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Aveune Wellsville, NY14895

FIGURE NO.	1
PROJECT	WAL
DOCUMENT	2010 Annual Report
FILE NO.	Fig 1.mxd

N:\WAL\ANNUAL REPORTS\2010 ANNUAL REPORT\FIGURES\FIG 1.MXD

2010 SAMPLING LOCATIONS



Legend

- Residential Water Supply
- Dry Well - Not Sampled
- Monitoring Well
- Manholes / Sump
- Surface Water / Sediment
- Ditch or Drain
- Creek
- Fence
- Structure
- Roads
- Site Topography

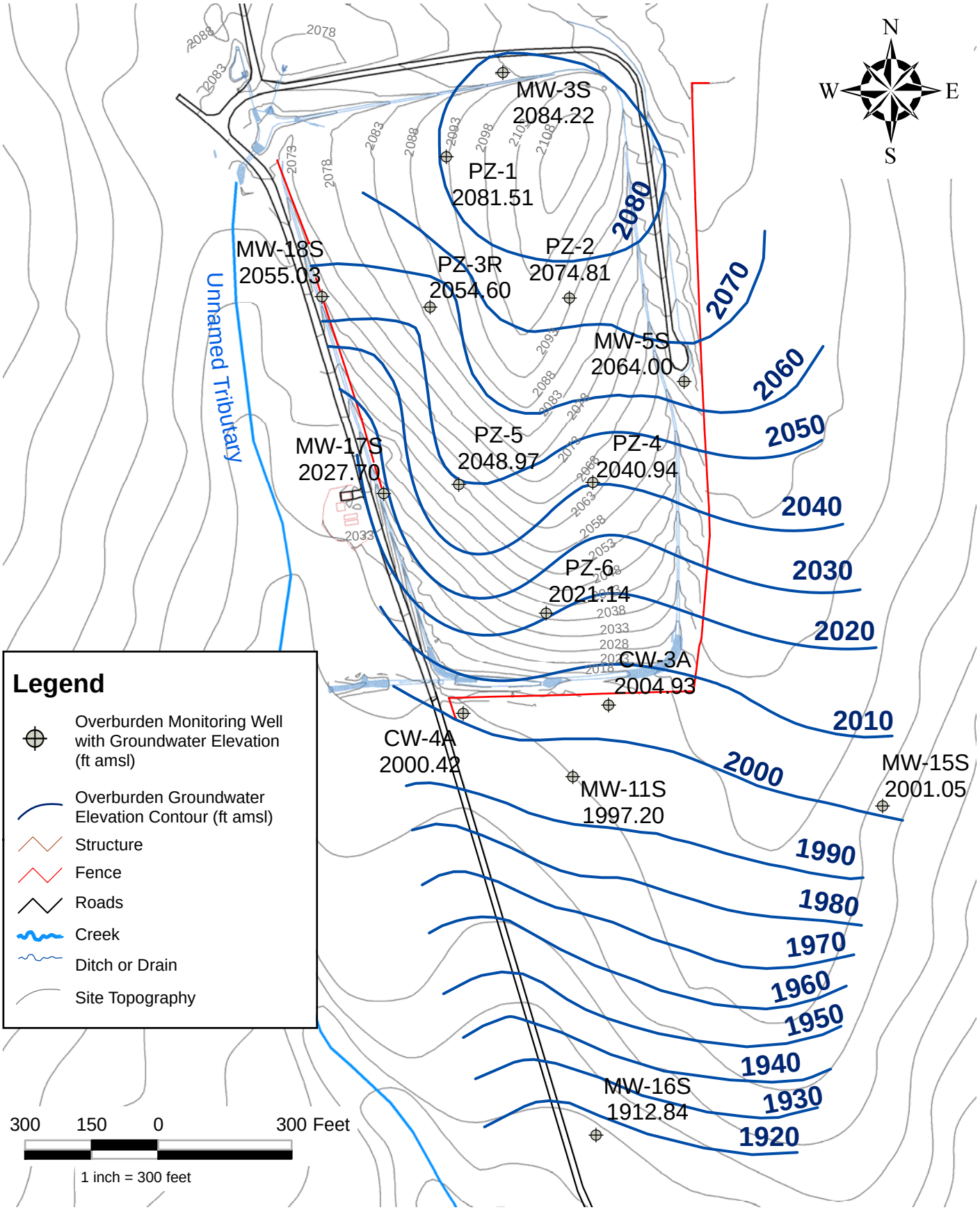
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	2
PROJECT	WAL
DOCUMENT	2010 Annual Report
FILE NO.	Fig 2.mxd

N:\WAL\ANNUAL REPORTS\2010 ANNUAL REPORT\FIGURES\FIG 2.MXD

SEPTEMBER 10, 2010 OVERBURDEN MONITORING WELL POTENTIOMETRIC MAP



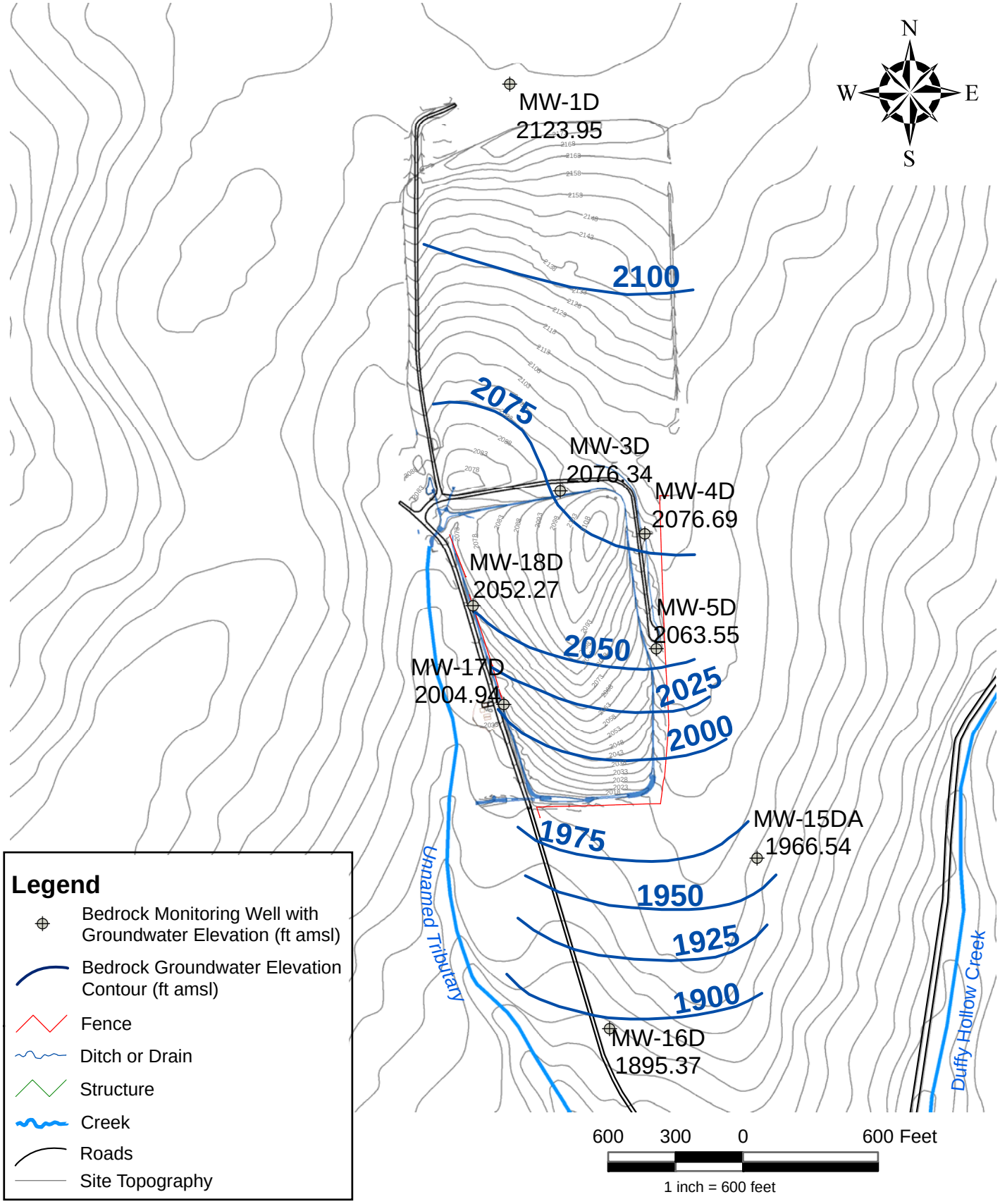
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	3
PROJECT	WAL
DOCUMENT	2010 Annual Report
FILE NO	Fig 3.mxd

N:\WAL\ANNUALREPORTS\2010ANNUALREPORT\FIGURES\FIG 3.MXD

SEPTEMBER 10, 2010 BEDROCK MONITORING WELL POTENTIOMETRIC MAP



Legend

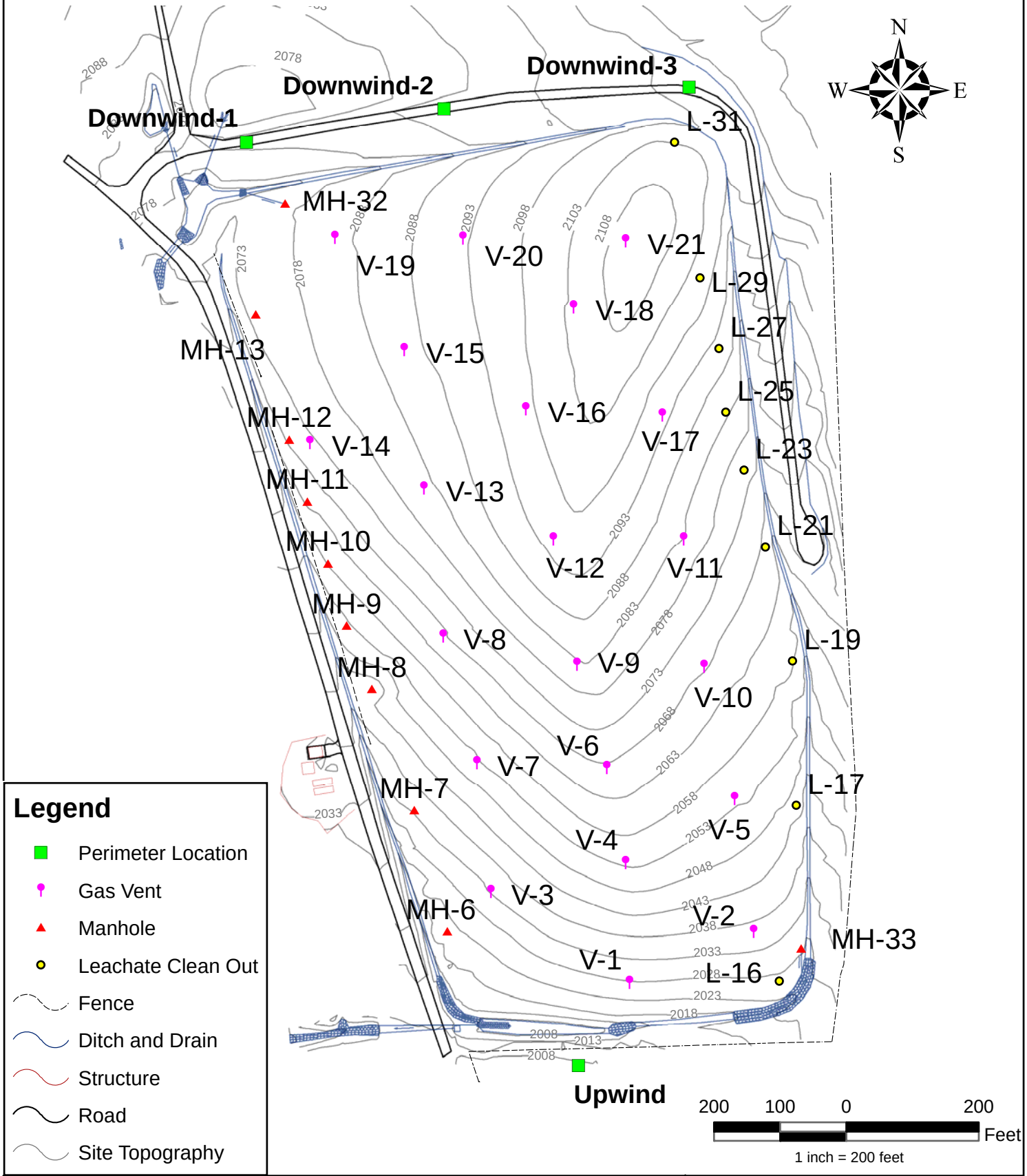
- Bedrock Monitoring Well with Groundwater Elevation (ft amsl)
- Bedrock Groundwater Elevation Contour (ft amsl)
- Fence
- Ditch or Drain
- Structure
- Creek
- Roads
- Site Topography

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	4
PROJECT	WAL
DOCUMENT	2010 Annual Report
FILE NO	Fig 4.mxd

N:\WAL\ANNUALREPORTS\2010ANNUALREPORT\FIGURES\FIG 4.MXD

2010 Air Monitoring Locations



Legend

- Perimeter Location
- Gas Vent
- Manhole
- Leachate Clean Out
- Fence
- Ditch and Drain
- Structure
- Road
- Site Topography

ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	5
PROJECT	WAL
DOCUMENT	2010 Annual Report
FILE NO.	Fig5.mxd

N:\WAL\ANNUALREPORT\2010ANNUALREPORT\FIGURES\FIG5.MXD

New York State Department of Environmental Conservation
Division of Environmental Remediation, 11th Floor
625 Broadway, Albany, New York 12233
Phone: (518) 402-9553 **Fax:** (518) 402-9577
Website: www.dec.ny.gov

Joe Martens
Acting Commissioner

45-Day Reminder Notice: Site Management Periodic Review Report

William D. Whitfield
Director Of Public Works
VILLAGE OF WELLSVILLE
200 BOLIVAR ROAD
Wellsville, NY 14895

February 07, 2011
Site Name: Wellsville-Andover Landfill
Site No.: 902004
Site Address: Snyder Hill Road
Wellsville, NY 14895

Dear William D. Whitfield:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **March 17, 2011**.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form must be signed by you or your designated representative. The Engineering Controls (ECs) portion of the form must be signed by a Qualified Environmental Professional (QEP). If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.

The certification forms should be submitted in both paper and electronic formats. All supporting documentation (e.g., data, reports) should be submitted in electronic format only. These documents and electronic submissions should be sent to David Szymanski, Project Manager.

New York State Department of Environmental Conservation
270 Michigan Ave
Buffalo, NY 14203-2915

Phone number: 716-851-7220. E-mail: dsszyman@gw.dec.state.ny.us

Enclosures

ec: David Szymanski, Project Manager
Michael Cruden, Bureau Director
Greg Sutton/Marty Doster, Hazardous Waste Remediation Engineer, Region 9
Steven Bates, DOH

W/o enclosures

cc:

Village Of Wellsville
Village Of Wellsville

Enclosure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 902004

Site Name Wellsville-Andover Landfill

Site Address: Snyder Hill Road Zip Code: 14895
City/Town: Wellsville
County: Allegany
Site Acreage: 19

Reporting Period: ~~October 11, 2009 to February 15, 2011~~
January 1, 2010-December 31, 2010

	YES	NO
1. Is the information above correct?	☐	☒
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

SITE NO. 902004 Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
201-1-15.2	VILLAGE OF WELLSVILLE	Ground Water Use Restriction Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
201-1-15.2	Cover System Fencing/Access Control Leachate Collection

---

Control Description for Site No. 902004

Parcel: 201-1-15.2

Per Site O&M Manual (11/01/1997), Environmental Control Systems:

- Cover System.
- Leachate Collection and Storage System.
- Gas Venting System.
- Storm Water System.
- Groundwater Monitoring System; and
- Facility Access System (i.e., Access Roads and gates.)

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 902004

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I William Whitfield (print name) at 200 Bolivar Rd. Wellsville, NY 14895 (print business address)

am certifying as Owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner or Remedial Party Rendering Certification — Date: 3/1/11

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jonathan Brandes (print name) at 72 Railroad Ave. Wellsville, NY 14895 (print business address)

am certifying as a Qualified Environmental Professional for the Owner (Owner or Remedial Party)

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification — Stamp (Required for PE) — Date: 3/1/11

Enclosure 2

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional / Engineering Controls (Boxes 3, 4, and 5)

1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7)**:**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- Where the only control is an Institutional Control on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner.

- Where the site has Institutional and Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

ON-SITE TECHNICAL SERVICES, INC
72 Railroad Avenue
Wellsville, New York 14895
Phone: (585) 593-1824
Fax: (585) 593-7471

April 3, 2009

Linda Ross, CPG
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Wellsville/Andover Landfill Site (Site # 9-02-004) – Site Monitoring Evaluation and Proposed Revised Monitoring Plan

Dear Linda:

On behalf of the Village of Wellsville, this letter has been prepared to evaluate the above referenced site's post remedial action monitoring results and propose a revised monitoring plan tailored to the site for continued ample monitoring.

Background

The Wellsville/Andover Landfill was operated by the Village of Wellsville from 1964 to 1983, accepting both municipal and industrial waste. The site was added to the New York State Superfund and the New York State Department of Environmental Conservation (NYSDEC) selected capping with waste consolidation as the remedial action in the Record of Decision (ROD) for the site (NYSDEC 1994). Waste from the Northwest and Northeast fill areas was consolidated and capped on the South/South-central fill area. Following consolidation, the fill was compacted and capped with a 19-acre cover system, which incorporates a passive landfill gas (LFG) venting system, a leachate collection and storage system and a groundwater cut-off trench. Remedial construction activities were completed in September 1997.

An operation and maintenance plan was prepared for the site: *Operation and Maintenance Manual For The Wellsville/Andover Landfill Site Number 9-02-004 Allegany County, New York,* dated November 1997 (O&M Plan); which details O&M requirements. Section 3.3 of the O&M Plan states:

The primary goals of this action were to minimize leachate production, control and manage leachate produced, control LFG, consolidate the waste to reduce the size of the landfill, reduce the potential for

surface contact with waste and contaminated soils, and mitigate the spread of contaminated groundwater off site. The remedial action mitigated significant threats to the public health and the environment by:

- *Reducing the production of leachate within the fill mass;*
- *Eliminating the threat to surface waters by eliminating any future contaminated surface water runoff from the contaminated soils on site;*
- *Eliminating the potential for direct human or animal contact with the contaminated soils on site;*
- *Mitigate the impacts of contaminated groundwater to the environment;*
- *Mitigating, to the extent practicable, migration of contaminates in the landfill to groundwater; and*
- *Controlling LFG.*

Site Hydrogeology

Groundwater hydrogeology was investigated during the remedial investigation as summarized in the O&M Plan. Generally, groundwater flows from the North-Northeast to the South-Southwest as dictated primarily by topography. The overburden and bedrock beneath the site have been interpreted as being one continuous aquifer with no separating confining layer. However, in some areas of the site discontinuous low permeability horizons of silt and clay are present within the overburden creating perched water bearing zones. Groundwater flow is restricted vertically by localized clay/silt lenses, but aided in other areas by sand and gravel zones. In the top of bedrock, groundwater flow appears to be controlled by fractures and joints. Open and clay-filled bedrock fractures with many orientations were observed from remedial investigation borings. This indicates that groundwater can flow both horizontally and vertically within the overburden and top of bedrock.

Potentiometric mapping as part of approximately 11 years of post remediation monitoring indicate that groundwater flow conditions and directions have shown little variations from that observed during the remedial investigation.

Evaluation of Monitoring Results

Post remedial action site monitoring commenced in June 1998 and was conducted quarterly through 1999. Starting in 2000 and continuing through 2008, site monitoring has been conducted semi-annually. The monitoring has included sampling and analysis of groundwater, surface water and sediment, groundwater collection system water and leachate. These samples are tested for field parameters, Volatile Organic Compounds (VOCs), 15 Metals and 14 wet chemistry compounds listed in the table below.

Field Parameters
Specific Conductance
Temperature
pH
Oxygen Reduction Potential
Dissolved Oxygen
Turbidity

Inorganic Compounds
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Sodium
Zinc

Volatile Organic Compounds
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
m&p-Xylene
o-Xylene
Styrene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl chloride

Wet Chemistry
Alkalinity
Ammonia
Biochemical Oxygen Demand
Bromide
Chemical Oxygen Demand
Chloride
Color (True)
Hardness
Sulfate
Total Dissolved Solids
Total Kjeldahl Nitrogen
Total Organic Carbon (TOC)
Total Phenolics
Turbidity

Additionally potentiometric mapping, landfill gas monitoring and sampling and analysis of nearby residential water supplies is conducted. An evaluation of these approximately 11 years of monitoring results is presented below.

Groundwater

The current site monitoring well network consists of 18 wells required to be sampled annually and 11 of the 18 wells sampled semi-annually. Please see attached figure 1 for monitoring well locations. The table below presents a summary of parameters detected in groundwater during the last five years of monitoring.

Summary of 2004 through 2008 Groundwater Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection	Class GA Standard	Number of Class GA Exceedances
Metals						
Barium	119	98	0.0202	0.32	1	0
Calcium	119	119	2.96	140		
Chromium	119	1	0.011	0.011	0.05	0
Iron	119	97	0.108	13.4	0.3	77
Lead	119	8	0.0052	0.0733	0.025	1
Magnesium	119	118	0.651	64		
Manganese	119	112	0.0102	1.65	0.3	58
Potassium	119	85	2.1	33.5		
Selenium	119	1	0.00522	0.00522	0.01	0
Sodium	119	119	1.56	67.4	20	45
Zinc	119	21	0.0205	0.347		0
VOCs						
1,1-Dichloroethene	134	1	0.0066	0.0066	0.005	1
cis-1,2-Dichloroethene	134	94	0.005	3	0.005	93
Ethyl benzene	134	1	0.0073	0.0073	0.005	1
Toluene	134	1	0.0065	0.0065	0.005	1
trans-1,2-Dichloroethene	134	4	0.011	0.021	0.005	4
Trichloroethene	134	80	0.0052	3.2	0.005	80
Vinyl chloride	134	34	0.005	0.83	0.002	34
Wet Chemistry						
Alkalinity	113	113	7.2	410		
Ammonia Nitrogen	115	11	0.0512	0.161	2	0
Biochemical Oxygen Demand	111	15	2.13	13		
Bromide	113	6	1.06	1.38		
Chemical Oxygen Demand	115	40	5.13	18.8		
Chloride	113	89	2.04	71.4	250	0
Color (True) (C.U.)	116	70	5	75	15	10
Hardness	117	117	12.2	519		
Sulfate	113	113	3.49	161	250	0
Total Dissolved Solids	113	113	32	698	500	5
Total Kjeldahl Nitrogen	115	34	0.203	2.74		
Total Organic Carbon (TOC)	115	70	1.01	7.51		
Total Phenolics	114	2	0.00706	0.0181	0.001	2

As observed in the table above and also previously described in site monitoring reports, there are three metals (Iron, Manganese and Sodium) and three VOCs (cis-1,2-Dichloroethene (cDCE), Trichloroethene (TCE) and Vinyl chloride) that frequently exceed NYSDEC Class GA Groundwater Standards. Therefore, concentration verses time plots for these six compounds have been prepared for monitoring wells that exhibit exceedances. These wells include CW-3A, CW-3B, CW-4B, MW-5D, MW-5S, MW-15S and MW-18S for metals and VOCs and MW-11S and MW-16S for VOCs. These plots are attached for reference.

In General, for Iron, Manganese and Sodium, increasing or decreasing time trends are not apparent. The three metals have been detected at various concentrations above standards at both upgradient and downgradient wells. These metals are common constituents of soil and groundwater and often occur naturally at the concentrations detected.

Volatile Organic Compound analyses of groundwater have shown evident time trends and VOCs are the primary constituents of concern at this site. For this reason statistical analysis was performed to evaluate total VOCs (sum of detected VOCs in a given sample). The data set utilized for the analysis includes all available post remediation VOC results, which generally includes 24 sampling events over an 11 year period. The statistical analysis was conducted using the Mann-Kendall test using a normal approximation method in accordance with *USEPA Data Quality Assessment: Statistical Methods for Practitioners EPA QA/G-9S*, dated February 2006. In this analysis, a null hypothesis of "There is no trend" is tested against an alternative hypothesis of either "There is an upward trend" or "There is a downward trend". This analysis involves using a triangular table to compute a Statistic (S) and test it against a critical value and a probability value at a 5 % significance level (95% confidence level). If both criteria are met, then the null hypothesis of no trend is rejected in favor of the alternative hypothesis. Rejecting the null hypothesis suggests that the alternative hypothesis may be true. Alternative hypotheses are upward trend for S greater than zero and downward trend for S less than zero. If only one criterion or neither criteria are met, then the result is not enough evidence to show a trend. These statistical analyses are presented in Table 1 attached. A discussion of time trend plots and statistical analysis by individual monitoring well is provided below.

CW-3A – This is an overburden well located immediately downgradient of the landfill.

Plot observation: This well exhibited anomalous high results in June 2005, but has returned to lower levels the last seven samplings. TCE and cDCE have shown a decreasing trend the last three samplings, while vinyl chloride has been non-detect except in June 2005.

Statistical analysis: There is strong evidence of an upward trend in total VOC concentrations.

CW-3B – This is an overburden well located immediately downgradient of the landfill and adjacent to CW-3A. This well is approximately 12.5 feet deeper than CW-3A.

Plot observation: There is an apparent slight increasing trend in concentrations of TCE and cDCE.

Statistical analysis: There is strong evidence of an upward trend in total VOC concentrations.

CW-4B – This is an overburden well located immediately downgradient of the landfill.

Plot observation: The plot shows a slight downward trend with TCE and Vinyl chloride results non-detect the last five years and cDCE has been non-detect since December 2005.

Statistical Analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-4D – This is a bedrock well located cross-gradient and East of the Northern portion of the landfill.

Plot observation: This well exhibits an apparent seasonal fluctuation in VOCs with an inverse proportional relationship to groundwater elevation. Elevated concentrations of primarily cDCE occur in the fall when groundwater elevations are low and then decrease in the spring when groundwater elevations are high. However, this seasonal fluctuation is not represented in the graph for the period of 2003 to 2007 when semi-annual sampling was conducted in the months of June and December and did not include samplings at low groundwater elevation periods. This period may have included times of elevated cDCE, but this is unknown because sampling was not conducted during periods of low groundwater levels.

Statistical Analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-5S – This is an overburden well located cross-gradient and East of the central portion of the landfill.

Plot observation: There is a decreasing trend apparent from 1998 to 2002 and concentrations have remained low and relatively stable since 2002.

Statistical analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-5D – This is a bedrock well located immediately adjacent to MW-5S.

Plot observations: cDCE is observed at higher concentrations than TCE and Vinyl chloride, but there is not an apparent increasing or decreasing trend.

Statistical analysis: There is no trend.

MW-11S – This is an overburden well located approximately 230 feet downgradient of the landfill and has been sampled semi-annually since 2005.

Plot observation: The plot shows fairly consistent VOC concentrations over time. TCE is the highest concentration (approximately 3 mg/L), cDCE is consistently around 0.5 mg/L and Vinyl chloride has been non-detect.

Statistical analysis: There is no trend.

MW-15S – This is an overburden well located cross/downgradient and approximately 600 feet from the landfill.

Plot observation: There is no discernable upward or downward trend. cDCE has been detected at concentrations between 0.011 mg/L and 0.04 mg/L, TCE fluctuates between

approximately 0.5 mg/L and non-detect and Vinyl chloride has been non-detect since 2002. However, this well does appear to exhibit seasonal fluctuations in VOC concentrations similar to MW-4D.

Statistical analysis: There is no trend.

MW-16S – This is an overburden well located approximately 1000 feet downgradient of the landfill. This well has been sampled on the same frequency as MW-11S.

Plot observation: cDCE, TCE and Vinyl chloride results are below detection limits, with the exception of TCE at 0.066 mg/L in September 2006.

Statistical analysis: Since there is only one VOC detection at this well; statistical analysis is not applicable.

MW-18S - This is an overburden well located cross-gradient and West of the northern portion of the landfill.

Plot observation: A time trend is not obvious, but there is a good correlation between cDCE and TCE, while Vinyl chloride has not been detected. cDCE and TCE concentrations increased in 2000 as compared to 1998 through 1999 and remained at similar concentration through 2007.

Statistical analysis: There is evidence of an upward trend. However, it should be noted that both criteria thresholds were just slightly exceeded, indicating that there is just enough evidence to reject no trend in favor of an upward trend.

Surface Water and Sediment

Surface water and sediment samples have been collected annually since 2000 from location SWS-1 (see figure 1). Prior to spring 2000 surface water and sediment samples were collected quarterly from SWS-1 and two other down stream locations. Additionally, three landfill perimeter seep samples were collected between 2001 and 2003. Seeps have not been observed active since 2003. SWS-1 is the currently required surface water and sediment sampling location; therefore results from this location are discussed below.

Location SWS-1 is located at the downstream side of the culvert within the drainage ditch that leads to an unnamed tributary to Duffy Hollow Creek. Both the unnamed tributary and Duffy Hollow Creek are classified as NYSDEC Class C streams. Since June 1998, 15 surface water samples have been collected at SWS-1. From these 15 samples, four samples have exhibited Class C surface water exceedances as presented in the table below.

SWS-1 Surface Water Class C Exceedances (mg/L)

Parameter	SWS-1 6/25/1998	SWS-1 12/2/1998	SWS-1 3/25/1999	SWS-1 6/16/2005	Class C Standard
Lead	0.0088		0.0089		0.008
Nickel			0.0176 B		0.0082
Thallium		0.0127			0.008
Total Dissolved Solids				642	500

VOCs have not been detected at SWS-1 with the following exceptions. There were three Acetone detections between 1998 and 1999, which are probable laboratory artifacts. cDCE was detected five times at a maximum concentration of 0.0067 mg/L. The last cDCE detection was reported in April 2003.

Sediment sampling at SWS-1 has shown typical metal and wet chemistry parameter detections along with minimal VOC detections. A summary of SWS-1 sediment detections is presented in the table below.

SWS-1 Sediment Analytical Result Summary (mg/Kg)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Aluminum	7	7	8780	13100
Arsenic	15	15	7.16	73.4
Barium	15	15	51.2	348
Beryllium	7	5	0.628	0.876
Boron	7	2	27.1	41.1
Cadmium	15	2	0.18	1.14
Calcium	15	15	3850	43200
Chromium	15	15	7.26	21.2
Cobalt	7	7	9.9	17.4
Copper	15	15	10.2	25.5
Iron	15	15	11800	41200
Lead	15	15	6.22	30
Magnesium	15	15	1780	8490
Manganese	15	15	579	8160
Mercury	7	1	0.01	0.01
Nickel	15	15	10.3	32.3
Potassium	15	15	862	4600
Selenium	15	6	1.3	13.1
Sodium	15	12	81.9	1390
Thallium	7	1	3.21	3.21
Vanadium	7	7	11.2	23.4
Zinc	14	14	74.3	2610
1,1,2-Trichloroethane	15	1	0.012	0.012
1,2-Dichloroethane	15	1	0.012	0.012
2-Butanone (MEK)	15	2	0.004	0.033
Acetone	15	5	0.016	0.22
Chloromethane	15	1	0.004	0.004
Toluene	15	2	0.0027	0.071

SWS-1 Sediment Analytical Result Summary (mg/Kg)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Alkalinity	15	14	376	14300
Ammonia Nitrogen	15	11	8.12	339
Biochemical Oxygen Demand	14	13	203	49500
Bromide	15	1	13.1	13.1
Chemical Oxygen Demand	15	15	15600	535000
Chloride	15	4	41.8	144
Hardness	14	13	689	44300
Sulfate	15	4	39.3	1700
Total Kjeldahl Nitrogen	15	15	168	5790
Total Organic Carbon (TOC)	10	10	0.34	46700
Total Phenolics	15	1	0.447	0.447
Total Solids	14	14	14.1	82.6

Groundwater Cut-off System

The groundwater cut-off system is intended to capture upgradient groundwater from the North and East landfill perimeters prior to contacting waste within the landfill. The North side collection trench drains to Manhole MH-32 located at the Northwest corner of the landfill, while the East side collection trench drains to Manhole MH-33 at the Southeast corner of the landfill. Both MH-32 and MH-33 are piped to drain either to the leachate collection system or to the landfill perimeter surface water drainage channels. To date, water in MH-32 and MH-33 has been drained to the leachate collection system. The pipes from the manholes to the drainage channel are closed with removable plugs. Sampling of these two manholes has been conducted since 1998 in anticipation of demonstrating acceptable water quality for discharge to the surface water drainage channels. A summary of parameters exceeding Class C surface water standards is provided below.

MH-32 & MH-33 Groundwater Cut-off System Class C Surface Water Exceedance Summary (mg/L)

Parameter	Number of Sample	Number of Detections	Minimum Detection	Maximum Detection	Class C Standard	Number of Class C Exceedances
Cobalt	12	4	0.0056	0.154	0.005	4
Lead	46	11	0.0027	0.165	0.008	7
Nickel	46	4	0.0056	0.272	0.0082	3
Thallium	12	3	0.0055	0.0178	0.008	2
Vanadium	12	4	0.0043	0.0826	0.014	2
Dichloromethane (Methylene chloride)	42	9	0.0027	1.9	0.2	1
Trichloroethene	42	20	0.0011	1.6	0.04	6
Ammonia Nitrogen	42	41	0.0955	7.69	2	12
Total Dissolved Solids	42	42	203	1650	500	16

Additionally, since cDCE, TCE and Vinyl chloride are the three primary constituents of concern in groundwater; time trend plots of these three compounds were created for MH-32 and MH-33 and are attached. MH-32, and to a greater extent MH-33, show a decreasing trend in these VOCs. However, at this time groundwater cut-off trench water does not meet standards to allow discharge to surface water.

Leachate

The quantity of leachate generated at the site has greatly decreased following the remedial action (please see attached graph). Leachate is sampled from the leachate sump. Since the groundwater cut-off system has drained to the leachate sump to date, leachate samples are a composite from the leachate collection system and groundwater cut-off trench. Various metals, VOCs and wet chemistry parameters are typically detected as presented in the summary table below.

Summary of Leachate Sump Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Aluminum	5	4	0.164	8.76
Arsenic	21	12	0.0051	0.238
Barium	21	21	0.112	0.961
Boron	4	3	0.163	0.659
Cadmium	21	1	0.00572	0.00572
Calcium	21	21	78.7	151
Chromium	21	4	0.0101	0.0205
Cobalt	4	1	0.0034	0.0034
Copper	21	4	0.0043	0.0392
Iron	21	21	3.22	360
Lead	21	10	0.0043	0.0738
Magnesium	21	21	25.1	62.2
Manganese	21	21	3.72	13.7
Nickel	21	1	0.0054	0.0054
Potassium	21	21	3.57	16.9
Selenium	21	3	0.005	0.00981
Sodium	21	21	14.6	112
Tin	3	1	0.198	0.198
Vanadium	4	1	0.0632	0.0632
Zinc	18	11	0.0159	0.21
1,1-Dichloroethane	21	2	0.0014	0.0022
2-Butanone (MEK)	21	2	0.031	0.05
4-Methyl-2-pentanone	21	1	0.0049	0.0049
Acetone	21	5	0.0056	0.044
Benzene	21	2	0.0022	0.0044
Chlorobenzene	21	1	0.0019	0.0019
Chloroethane	21	1	0.0027	0.0027
Chloroform	21	2	0.0018	0.0034
cis-1,2-Dichloroethene	21	21	0.011	0.95
Dichloromethane (Methylene	21	2	0.0023	0.067

Summary of Leachate Sump Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
chloride)				
Ethyl benzene	21	6	0.005	0.1
m&p-Xylene	21	1	0.0075	0.0075
o-Xylene	21	1	0.0038	0.0038
Phenol	5	1	0.044	0.044
Toluene	21	4	0.0022	0.026
trans-1,2-Dichloroethene	21	4	0.0026	0.0075
Trichloroethene	21	14	0.0064	0.038
Vinyl chloride	21	16	0.0029	0.05
Alkalinity	19	19	276	566
Ammonia Nitrogen	19	19	0.0873	12.1
Biochemical Oxygen Demand	19	8	2.01	5.4
Bromide	19	3	1.02	1.43
Chemical Oxygen Demand	19	18	12.3	17100
Chloride	19	19	27.8	200
Color (True) (C.U.)	19	19	10	200
Hardness	19	19	328	675
Sulfate	19	19	4.26	26.3
Total Dissolved Solids	19	19	357	925
Total Kjeldahl Nitrogen	19	19	2.17	14.8
Total Organic Carbon (TOC)	18	18	2.04	26
Total Phenolics	19	1	0.00588	0.00588

Landfill Gas Monitoring

Landfill gas monitoring has been conducted at the site for approximately 10 years using an FID and an O_2/LEL meter. This monitoring has provided substantial characterization of the landfill gas and shown fairly consistent results. Several of the gas vents, leachate clean outs and manholes exhibit high concentrations of Methane and low levels of Oxygen, while the landfill perimeter readings are generally within normal background levels. Additional gas monitoring was conducted in June 2005 using a GEM 2000 landfill gas meter to provide more characterization of the landfill gas. The June 2005 monitoring showed several locations with Methane readings between approximately 33% and 97%. This monitoring has demonstrated that the primary landfill gas is Methane. Starting with the March 2007 monitoring event, a PID has been utilized instead of an FID. The PID provides monitoring of VOCs while an O_2/LEL meter continues to be used to monitor Oxygen and Methane.

Residential Water Supplies

There are 20 residential water supply locations in the monitoring program. The current monitoring schedule requires that three water supplies be sampled semi-annually (spring and fall) and the remaining 17 locations be sampled every three years. The table below presents a summary of detected parameters from the last five years of sampling, which includes sampling of the available 20 locations in 2005 and 2008.

Summary of 2004 through 2008 Residential Water Supply Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection	Class GA Standard	Number of Class GA Exceedances	NYSDOH MCL	Number of NYSDOH MCL Exceedances
Barium	53	52	0.002	0.11	1	0	1	0
Calcium	53	53	3.4	54.4				
Copper	53	20	0.01	0.16	0.2	0	1	0
Iron	53	25	0.06	1	0.3	9	0.3	9
Lead	53	1	0.015	0.015	0.025	0	0.05	0
Magnesium	53	53	1.6	20.8				
Manganese	57	35	0.0054	2.8	0.3	14	0.3	14
Potassium	53	53	0.7	4.4				
Sodium	53	53	1.1	104	20	28		0
Zinc	53	11	0.011	0.22			5	0
cis-1,2-Dichloroethene	58	9	0.00084	0.0021	0.005	0		
Trichloroethene	58	9	0.0012	0.0028	0.005	0	0.005	0

As shown in the table above, two parameters (Iron and Manganese) have shown exceedances of standards during the last five years. Eight of the nine Iron exceedances are from location WAL-2, which is a seasonal hunting camp adjacent to the Southwest corner of the landfill. The other Iron exceedance is WAL-17 in November 2005. WAL-17 is located approximately 8000 feet from the landfill; therefore this exceedance is unlikely related to the site. The Manganese exceedances are from WAL-2 and WAL-20. WAL-20 is also located approximately 8000 feet from the site and Manganese concentrations have been near or below detection limits since this residential well was replaced in 2005. The VOC detections shown in the table above are from pre-filtered WAL-19 samples. WAL-19 is located Southeast of the landfill and includes a two-stage carbon treatment system maintained by the Village of Wellsville.

Summary of Monitoring Results Evaluation

Volatile Organic Compounds and to a lesser extent, metals, are the constituents of concern at the site. VOCs groundwater concentrations are stable at most wells and trending upward at three wells. The locations where VOCs are trending upward are immediately adjacent to the landfill and this upward trend is indicative of minimal groundwater flow. Groundwater level drawdown during sampling and slow recovery (in some cases days) further illustrate that groundwater flow is extremely measured. Metals have shown exceedances of standards in both upgradient and downgradient wells and in many cases are naturally occurring. Wet Chemistry parameters in groundwater are generally below standards and do not appear to be a good indicator of landfill impacts on groundwater at this site. This is contrary to typical municipal solid waste landfills and should be considered when evaluating future site monitoring needs. Surface water and sediment sampled at location SWS-1 appears un-impacted by the site. Groundwater collection system sampling shows some signs of decreasing concentrations, but results do not meet surface water standards at this time. Leachate continues to show several detections, but is generally

more dilute as compared to operating municipal landfills. Two Residential water supplies close to the landfill continue to show detections of constituents of concern.

These 11 years of monitoring results demonstrate that the remedial action goals continue to be met. Leachate quantities have greatly decreased following the remedial action. Surface water is not impacted by the site. Contaminated groundwater and landfill gas migration is being controlled. The remedial action has mitigated significant threats to public health and the environment.

Proposed Monitoring Program

Based on the above evaluation of monitoring results, a revised monitoring program has been designed to meet the needs of continued surveillance of the remedial objectives into the future. VOCs and metals are the primary constituents of concern and wet chemistry parameters do not appear to be good indicators at this site. The project analyte list is proposed to be revised to include field parameters, VOCs and metals with a few exceptions. The proposed monitoring requirements are presented in Table 2 attached and discussed below.

Groundwater

Groundwater sampling is proposed to be conducted annually, each Fall, in an attempt to capture annual high groundwater concentrations. Sampling locations will include currently sampled wells, with the following exceptions. Upgradient well MW-1D will not be sampled because upgradient water quality has been adequately characterized and no concern of an upgradient contaminate source. Sampling of overburden wells CW-3A and CW-4A will be discontinued because overburden wells CW-3B and CW-4B are immediately adjacent to these wells and show similar water chemistry. Bedrock well MW-15DA has not been sampled following the remedial action, because it has been dry. MW-15DA will be removed from the required sampling list.

Surface Water and Sediment

Surface water at location SWS-1 will be sampled during the annual Fall event with analysis for field parameters, VOCs, Metals, Nitrate Nitrogen and Total Dissolved Solids (TDS). Nitrate Nitrogen and TDS are tested in anticipation that the groundwater cut-off system may one day discharge to surface water and these two parameters frequently exceed Class C surface water standards in groundwater cut-off system water. Sediment sampling at this location has limited usefulness and is therefore discontinued.

Groundwater Cut-Off System

Manholes MH-32 and MH-33 will be sampled during the annual Fall event with analysis for field parameters, VOCs, Metals, Nitrate Nitrogen and TDS. Sampling of these locations is conducted in anticipation of future discharge to surface water.

Leachate

Leachate sump will be sampled during the annual Fall event.

Landfill Gas Monitoring

Landfill gas has been adequately characterized and has not been detected at the landfill perimeter; therefore landfill gas monitoring will be discontinued.

Residential Water Supply

Hunting camp WAL-2 will be sampled annually for metals. Resident WAL-5 will be sampled annually for VOCs and Metals. The two-stage carbon treatment unit will be maintained at residence WAL-19 with semi-annual sampling for VOCs prior to filtration, between the filters and post filtration. The remainder of the residential water supply sampling will be discontinued.

The Village of Wellsville and On-Site appreciate your review and consideration on this matter. If you have any questions or require any clarification on the information presented in this letter, please call the undersigned.

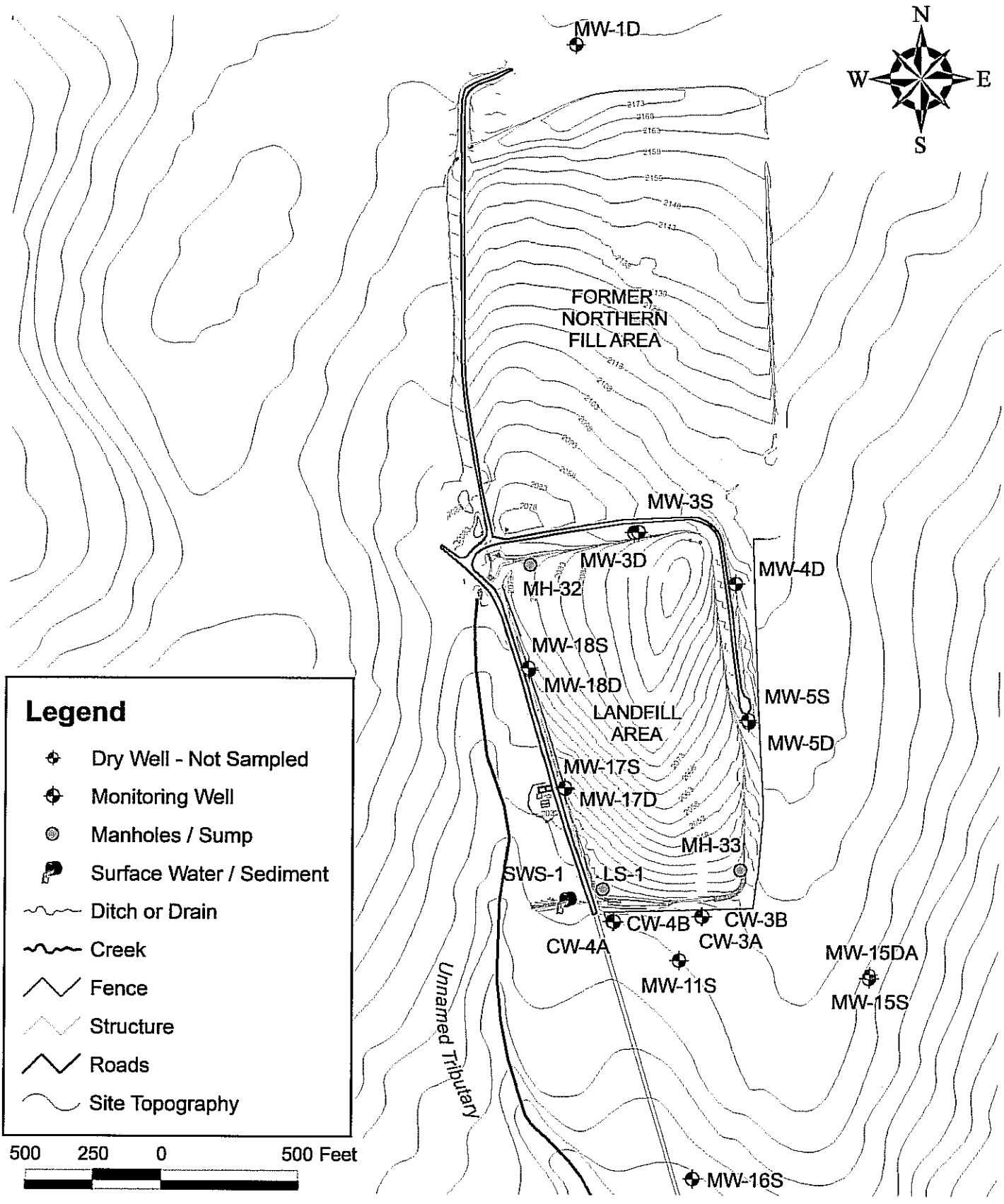
Sincerely,

Jonathan E. Brandes, P.G.
Senior Geologist

cc: Bill Whitfield, Village of Wellsville
Judy Lynch, Village Trustee, Liaison to Landfill
Tamara S. Girard, NYSDOH

Attachments

SAMPLING LOCATIONS



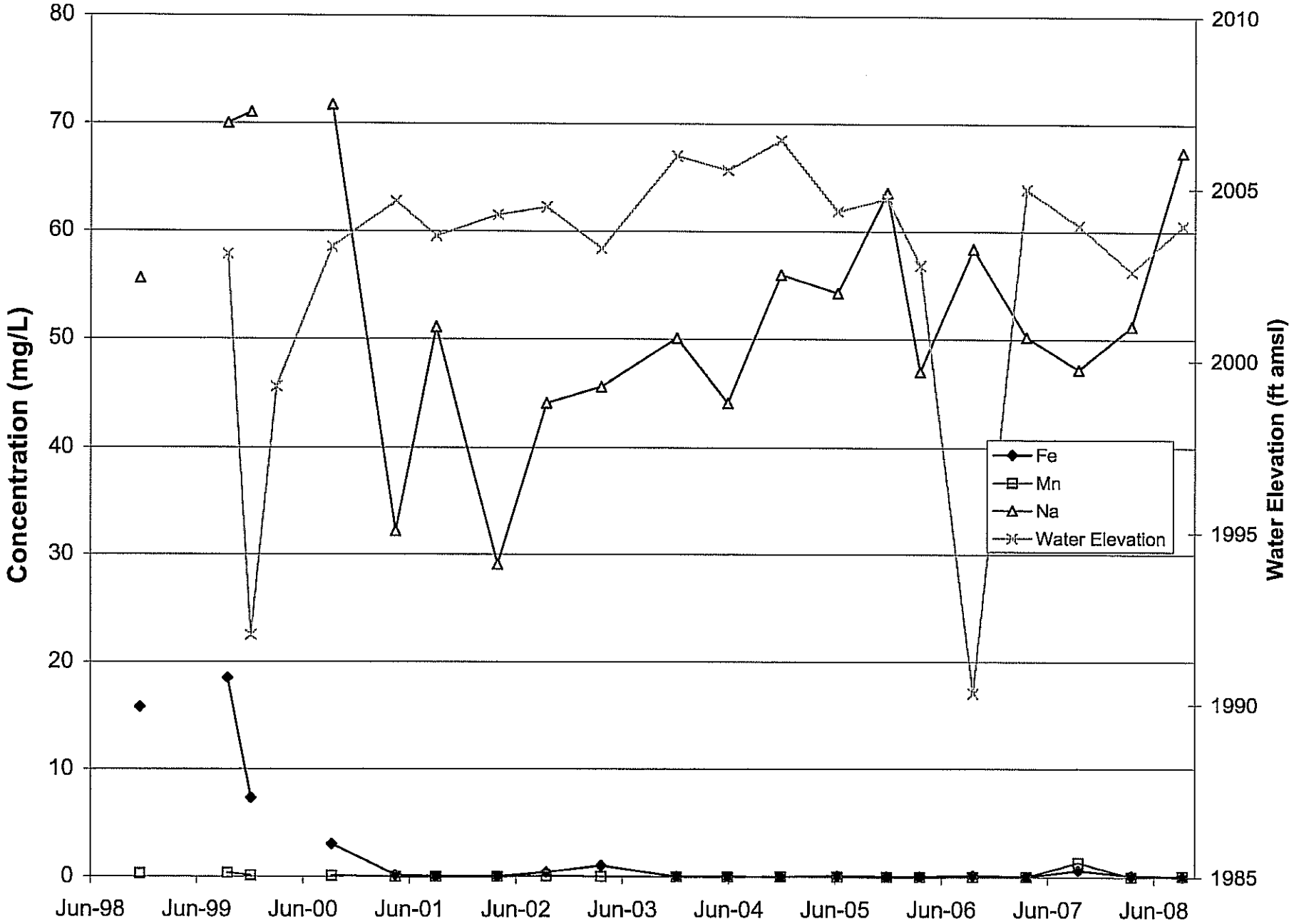
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	1
PROJECT	WAL
DOCUMENT	2009 Site Review
FILE NO.	Fig 1 - Samp Locs.mxd

N:\WAL\2009 SITE REVIEW\FIG 1 - SAMP LOCS.MXD

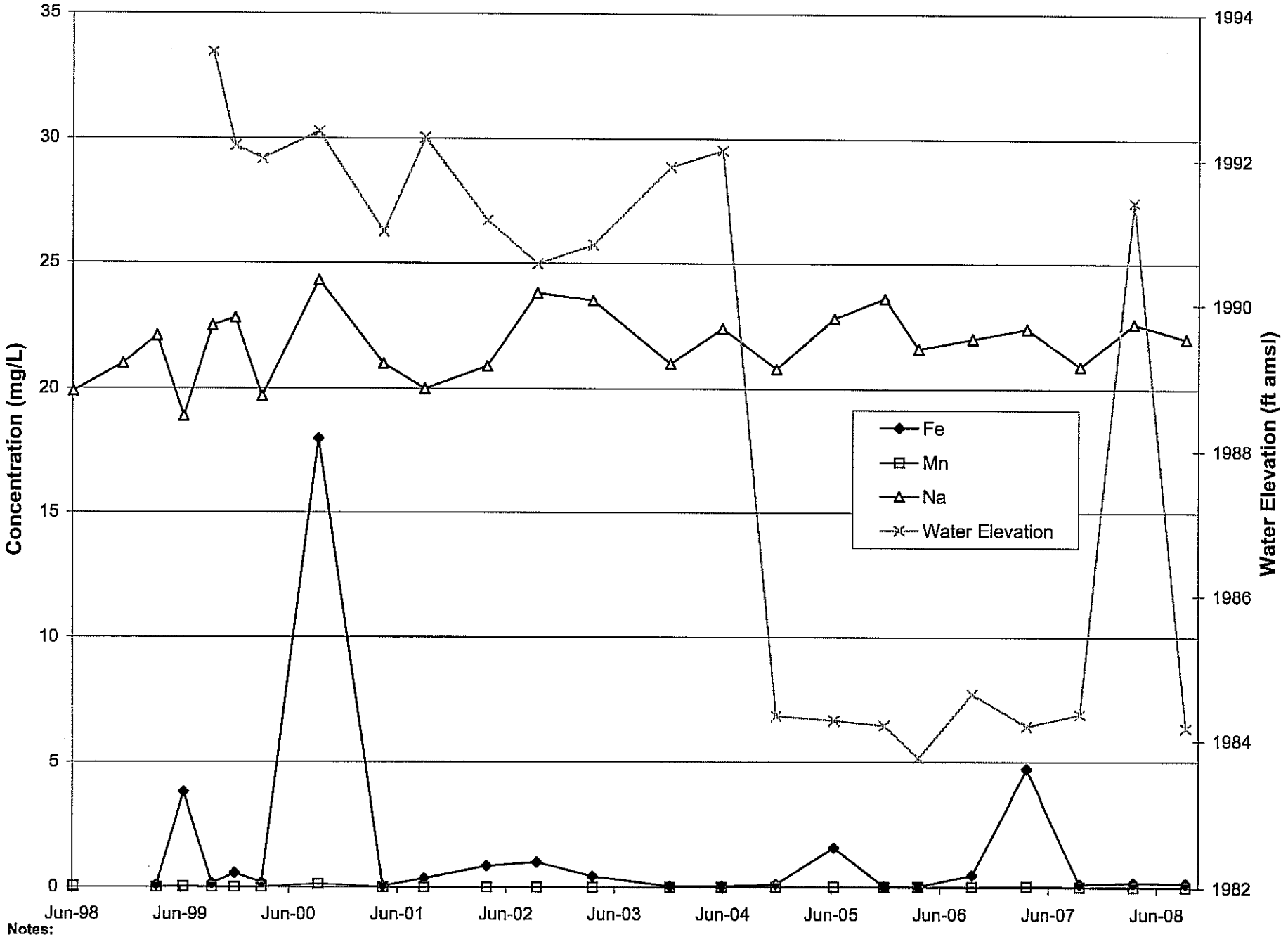
CW-3A Metals



Notes:

1. The majority of results for Manganese and Iron are non detect.
2. 1/2 Detection limit used for non-detects.

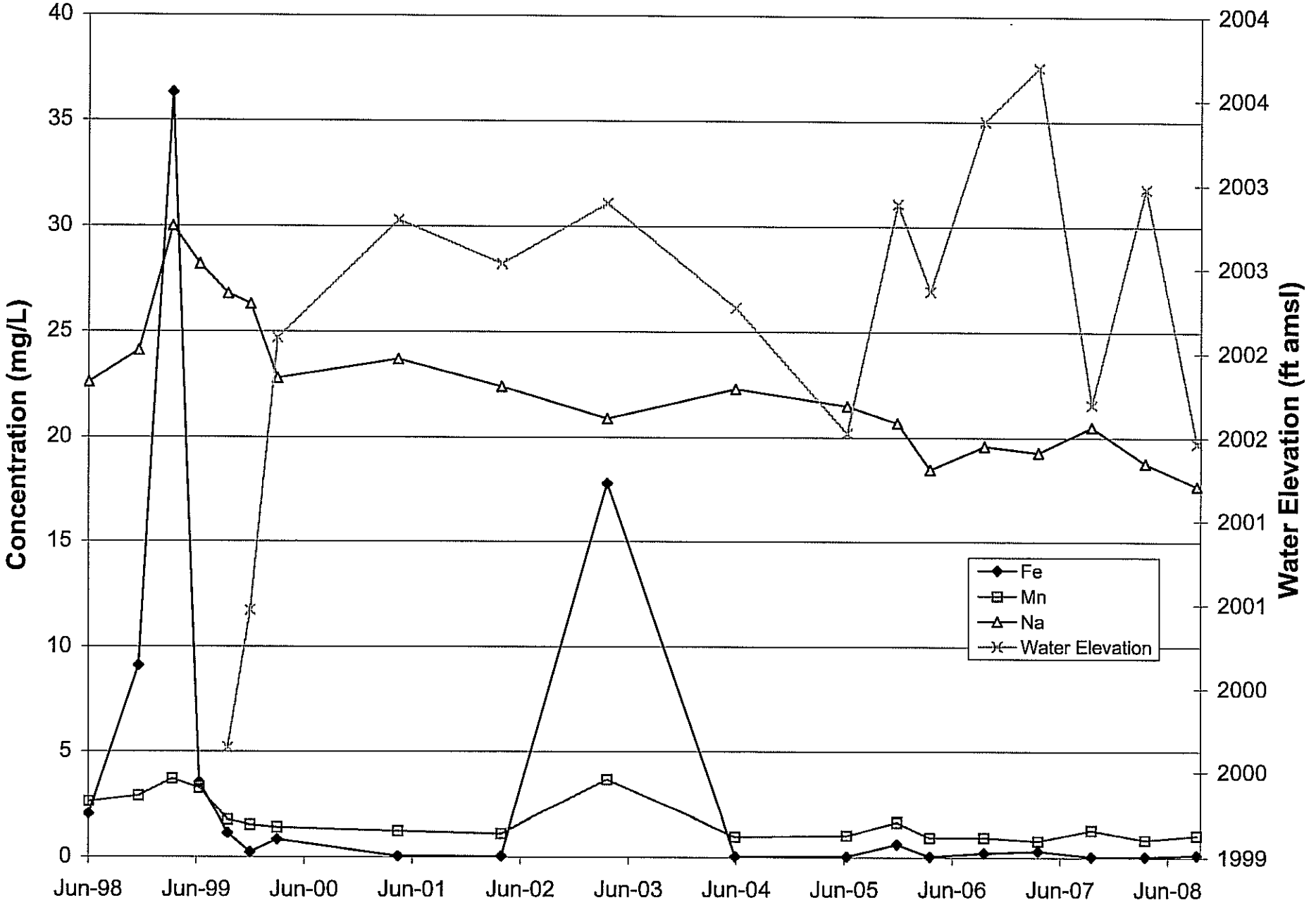
CW-3B Metals



Notes:

1. A majority of results for Manganese and Iron are non-detects.
2. 1/2 detection limit used for non-detects.

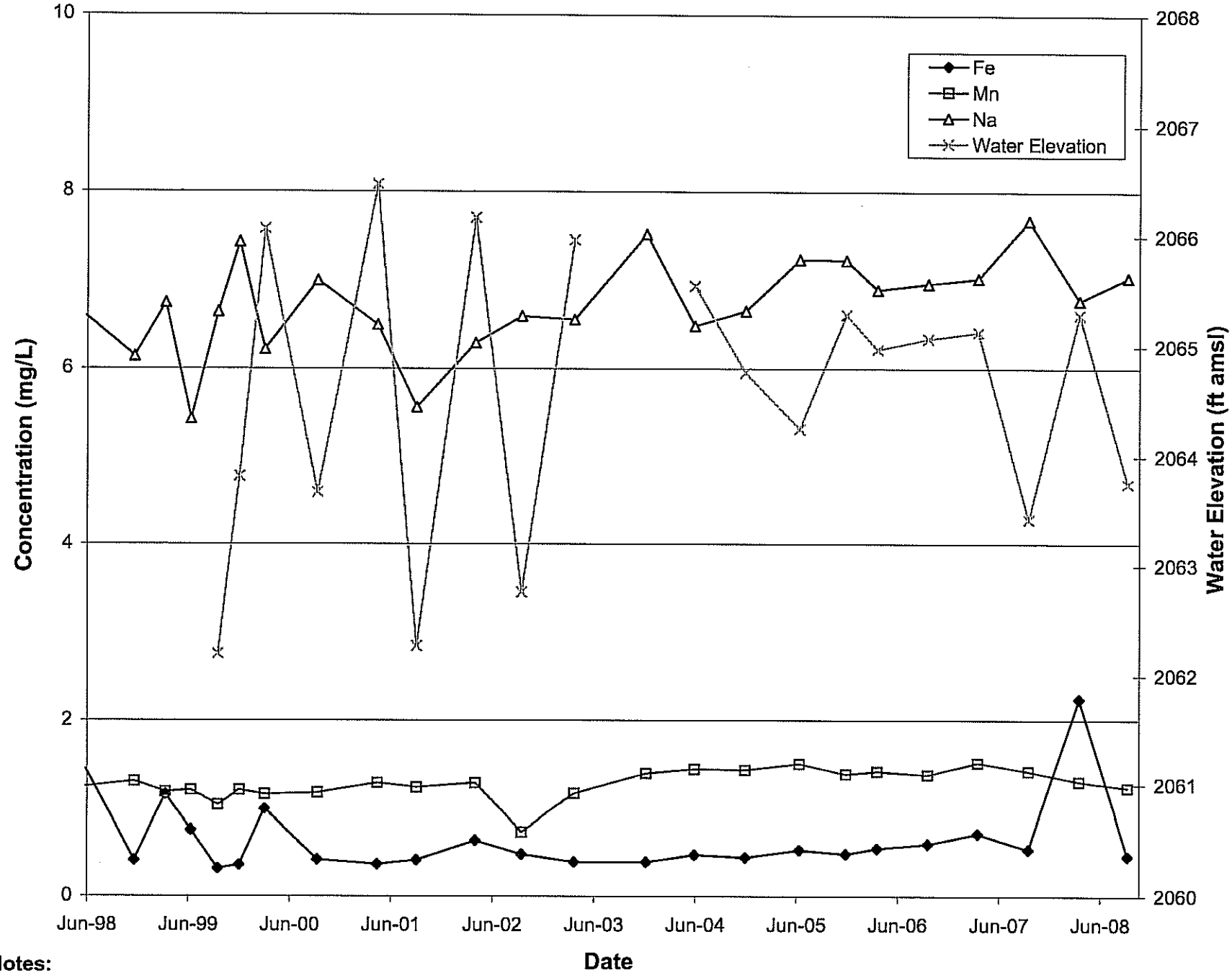
CW-4B Metals



Notes:

1. 1/2 detection limit used for non-detects
2. Iron is non-detect on 4/25/2001, 4/9/2002, 6/8/2004, 6/20/2005, 3/28/2006, 9/25/2007 and 3/25/2008

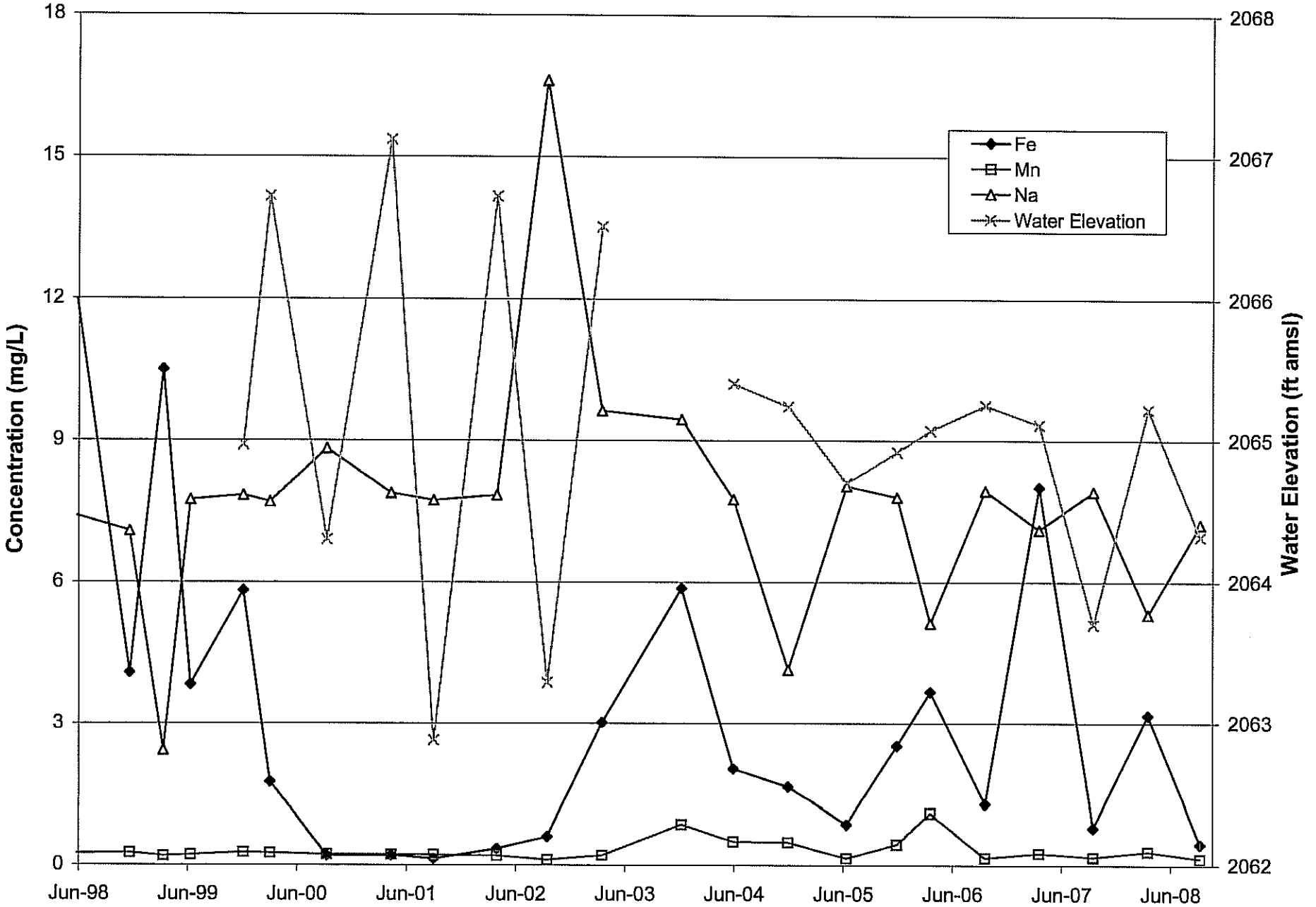
MW-5D Metals



Notes:

1. 1/2 Detection limit used for non-detects
2. No water elevation available December 2003.

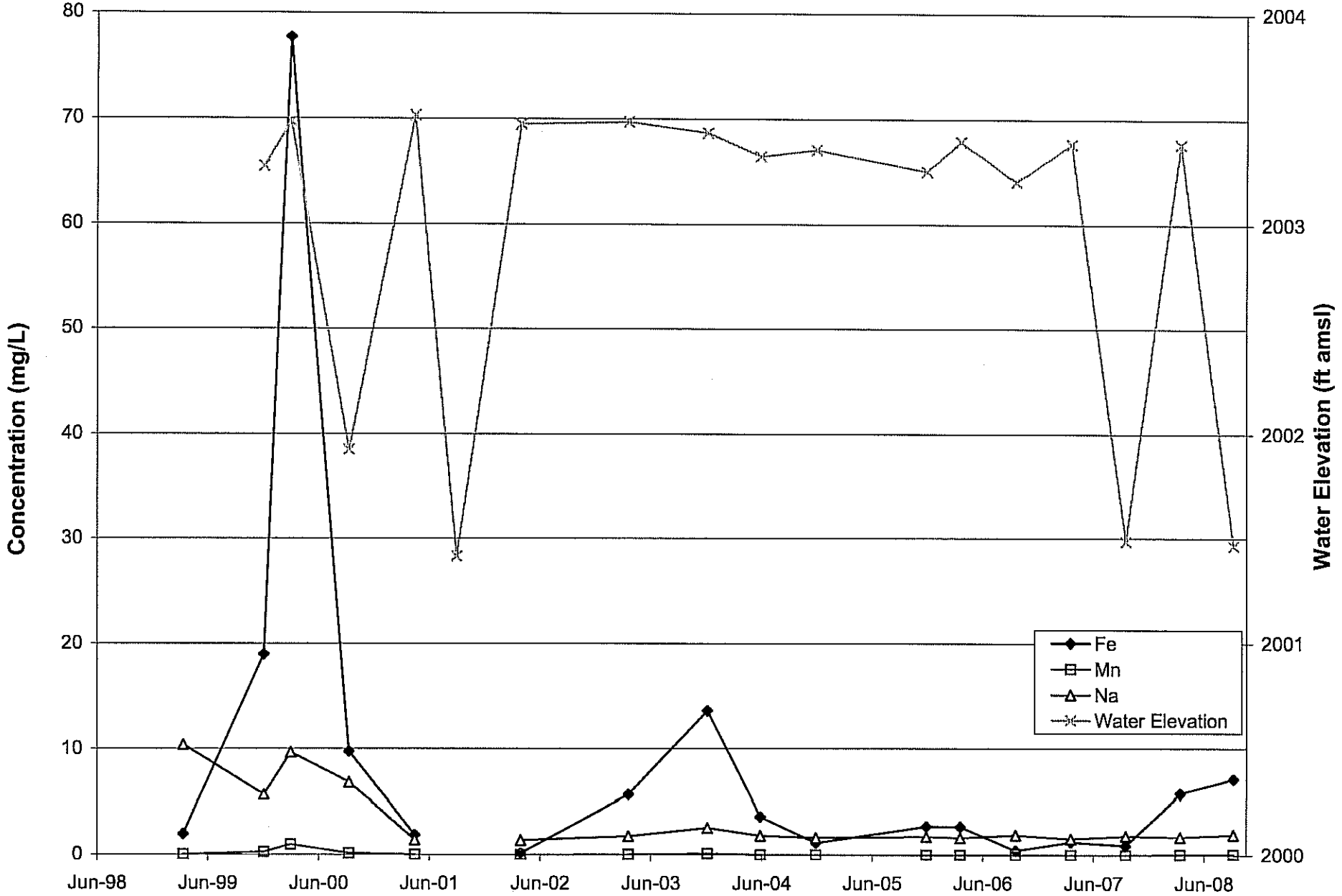
MW-5S Metals



Note:

1. 1/2 detection limit used for non-detects.
2. No water elevation available for December 2003.

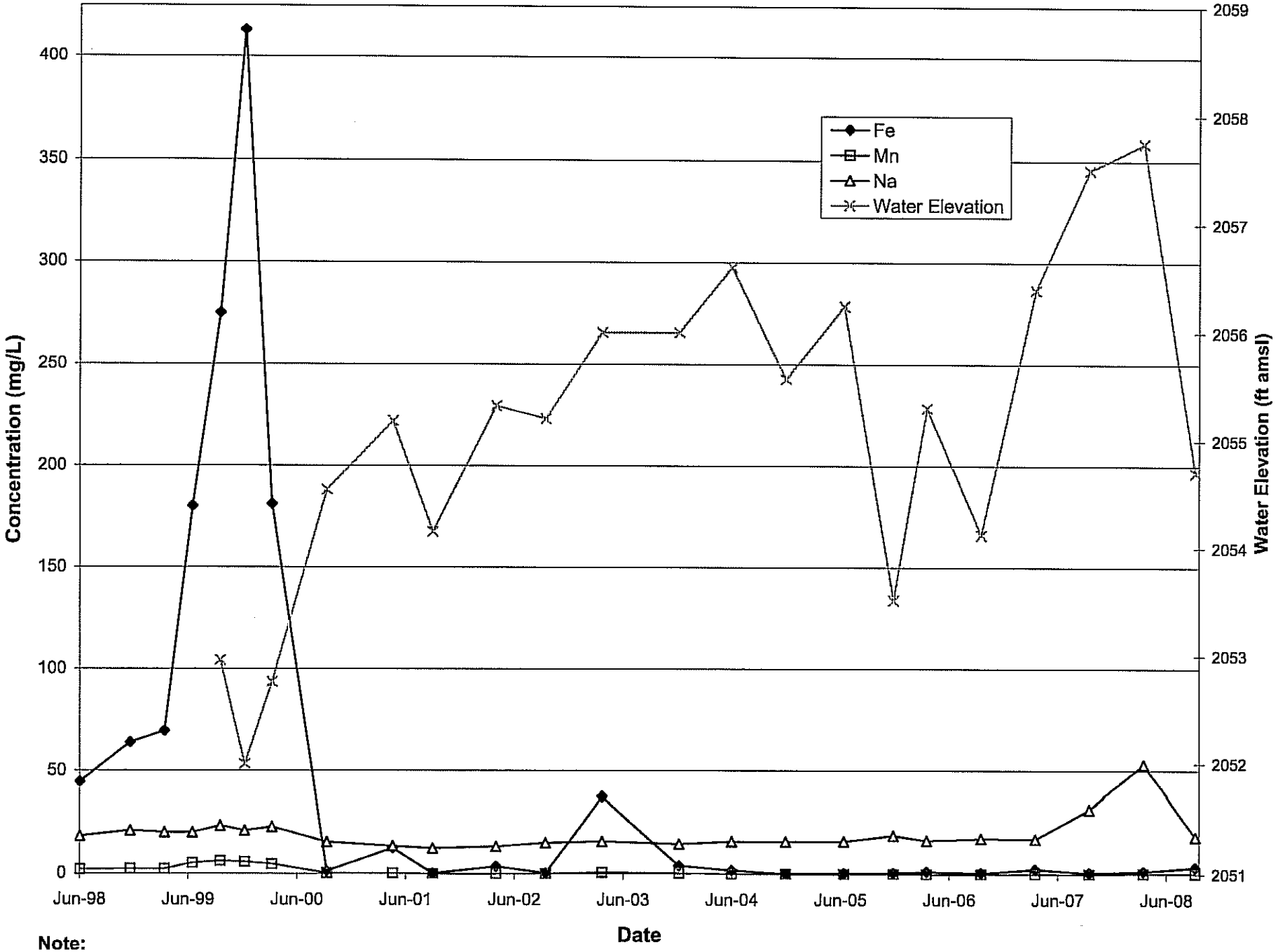
MW-15S Metals



Notes:

1. 1/2 detection limit used for non-detects
2. Manganese is non-detect on 4/10/2002 and 9/28/2006.
3. VOCs only collected on 9/11/2001 due to insufficient water volume.

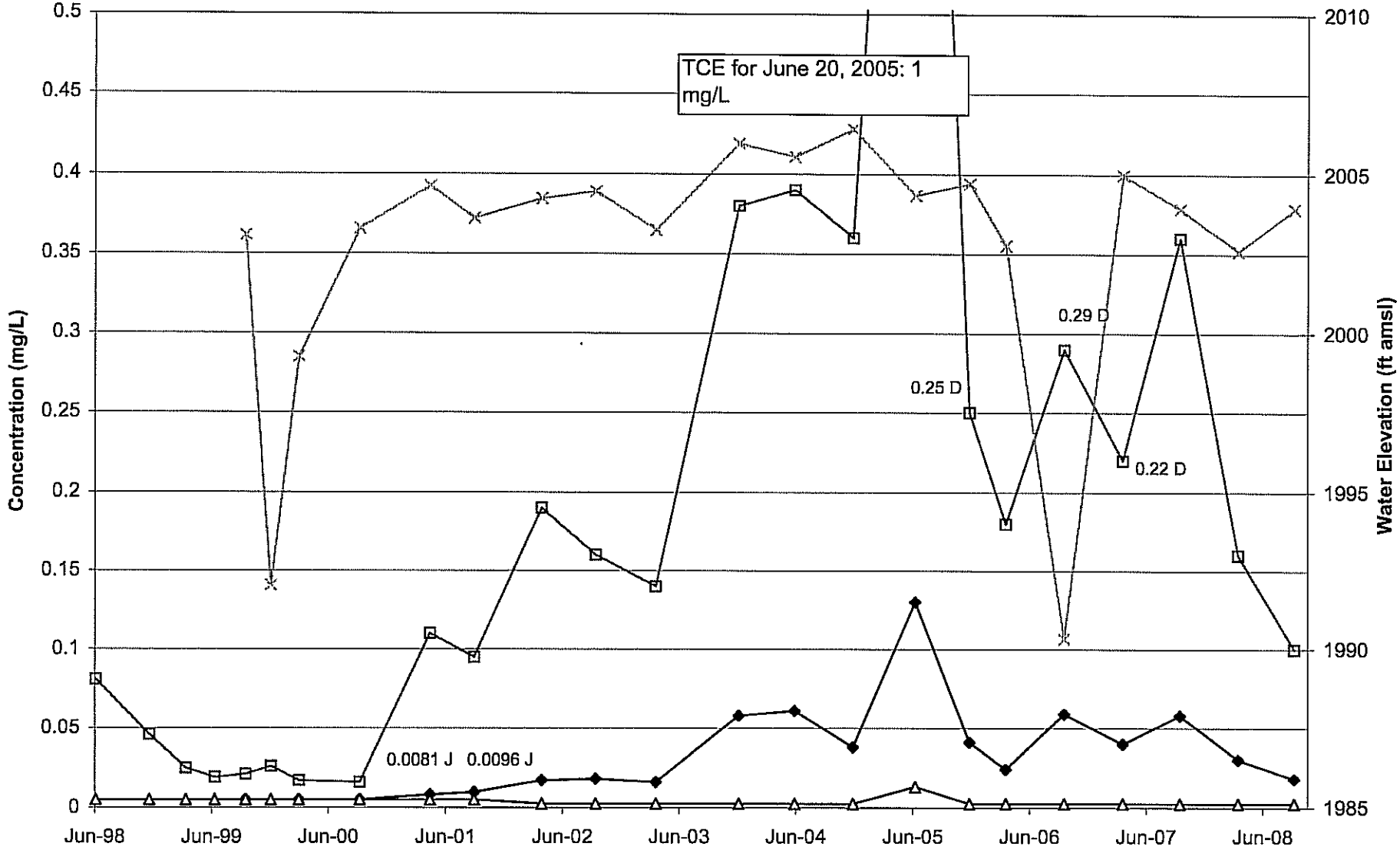
MW-18S Metals



Note:

1. 1/2 Detection limit used for non-detects

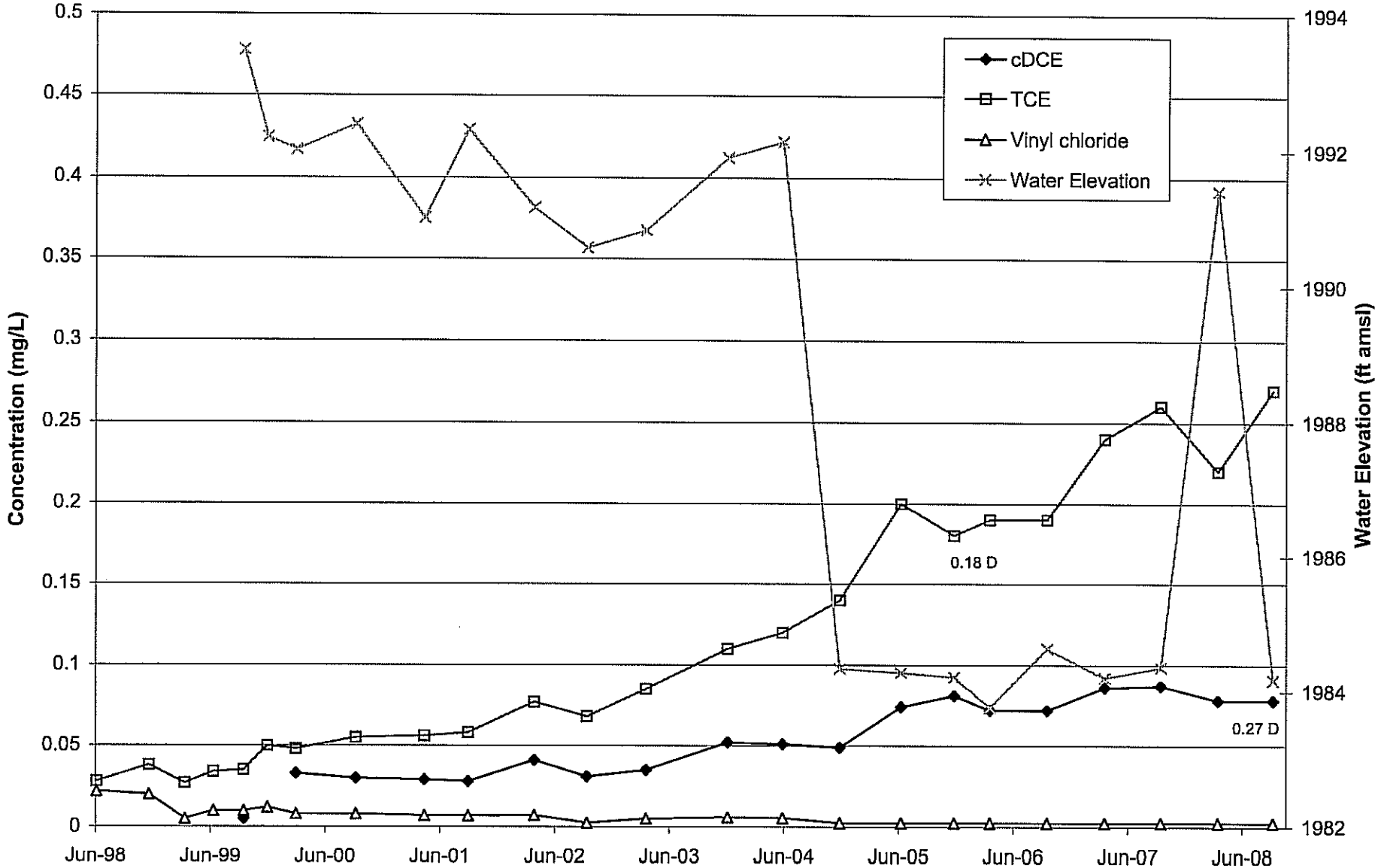
CW-3A VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. Vinyl choride results are non-detected except in June 2005.
4. Results for cis-1,2-Dichloroethene on 3/13/2000 and 9/19/2000 are non-detect and estimated on 4/26/2001 and 9/11/2001.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

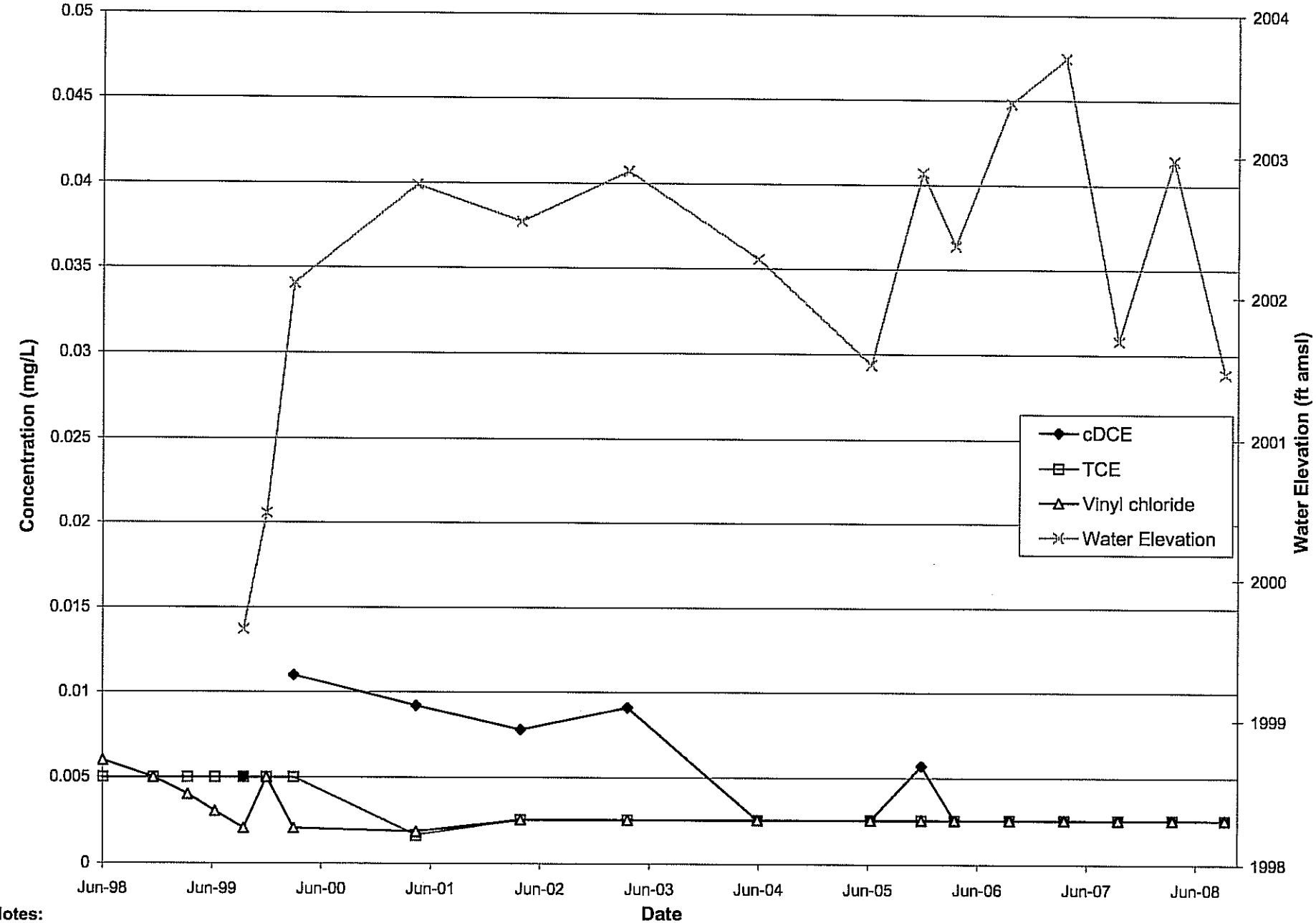
CW-3B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. The majority of Vinyl choride results are non-detect. Vinyl choride results on 3/13/2000, 9/19/2000,4/25/2001and on 9/11/2001 are estimated values.
4. Results for cDCE on 9/28/1999 are non-detect.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

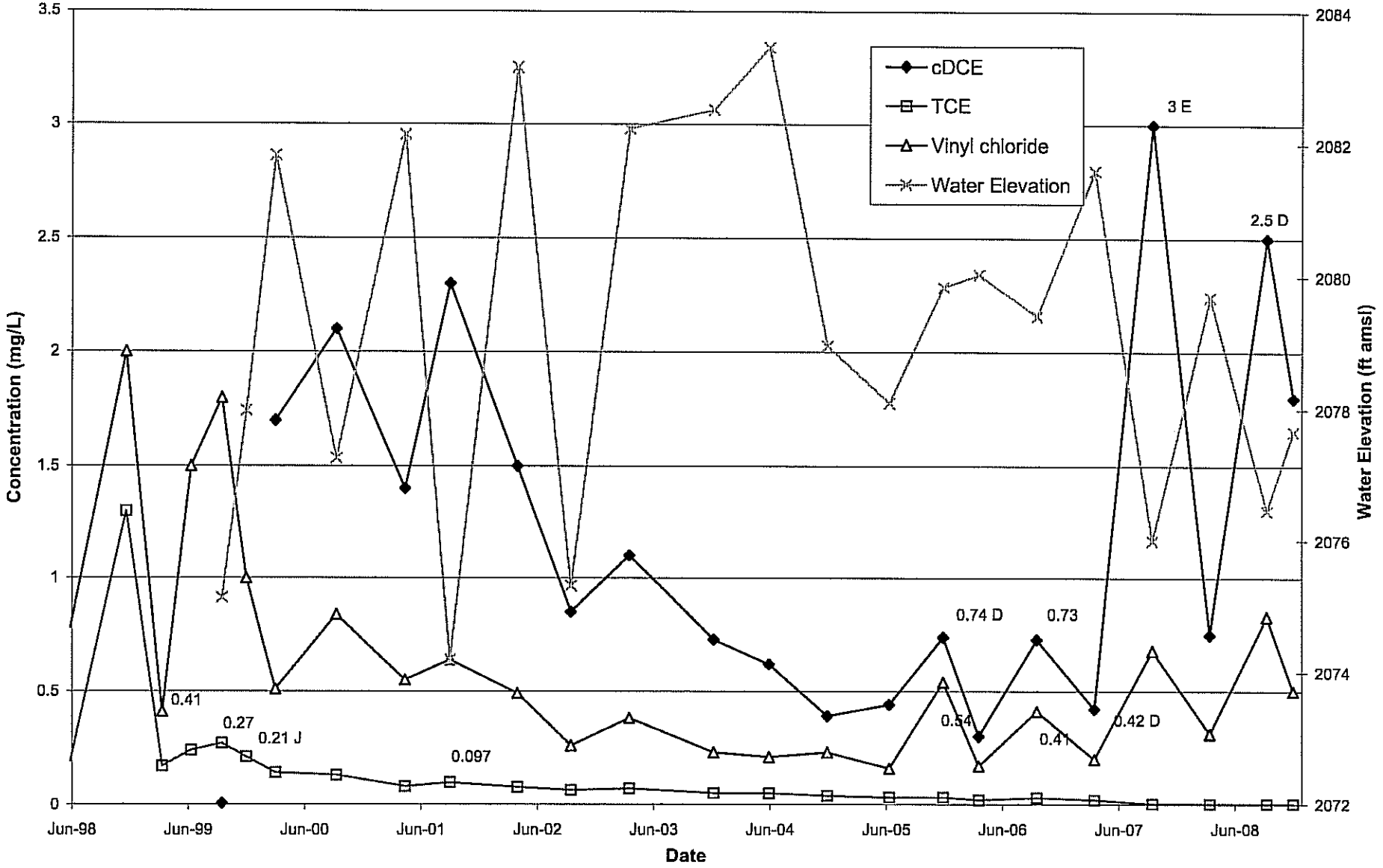
CW-4B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl choride results are either non-detect or estimated values.
4. A majority of cDCE results are non-detect.

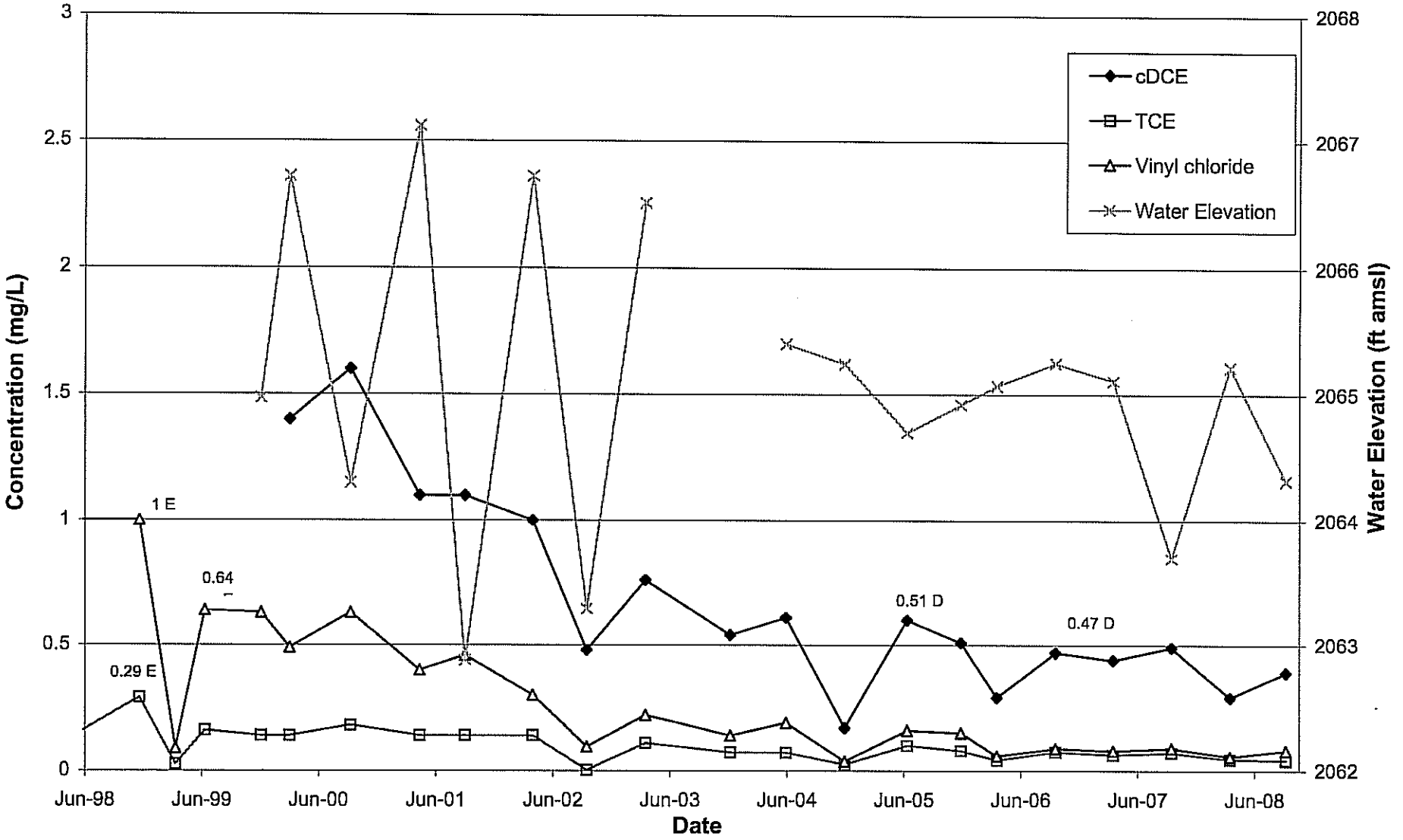
MW-4D VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. E - Results are greater than the calibration range of the instrument used for analysis
4. J - Estimated value.
5. D - This flag indicates a result from a diluted sample.
6. TCE is non-detect on 9/25/2007 and 3/24/2008.
7. Data with flag labeled on graph as appropriate.

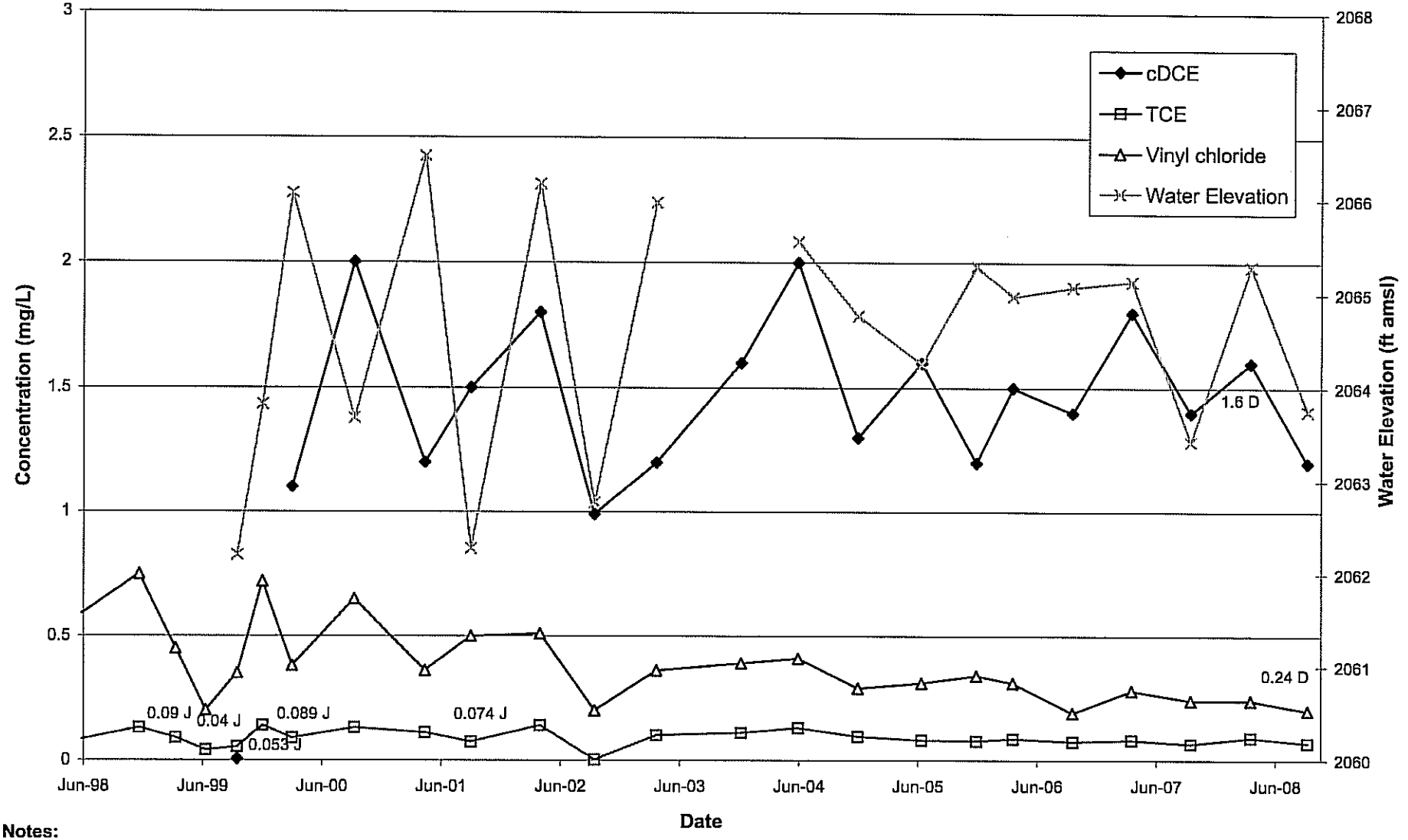
MW-5S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE result on 9/26/2002 is non-detect.
4. E - Results are greater than the calibration range of the instrument used for analysis.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.
7. No water elevation available for December 2003.

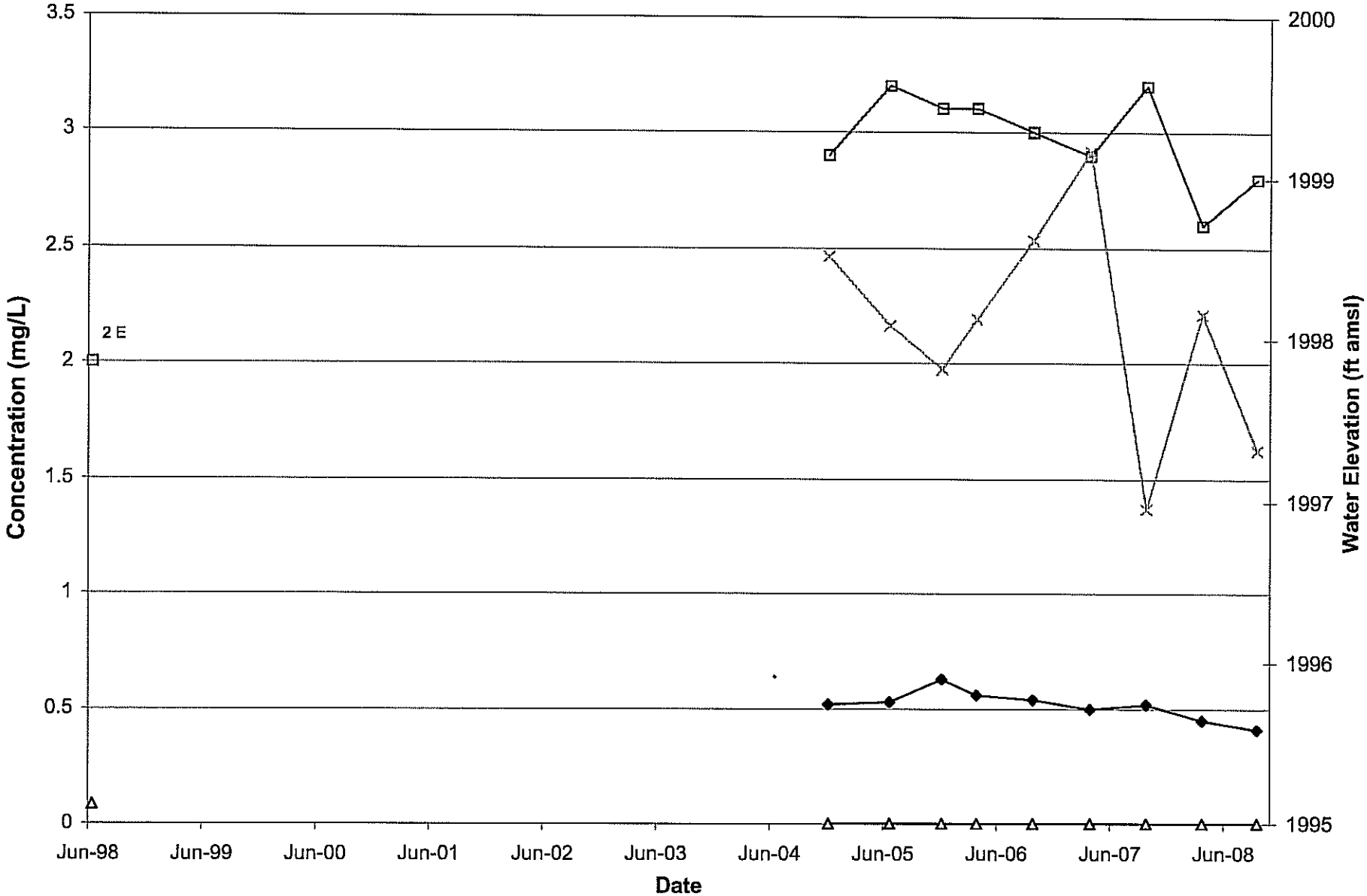
MW-5D VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/9/1998, 9/23/1999, 6/23/1999, 9/28/1999, 3/14/2000 and 9/12/2001 are estimated values.
4. Result for cDCE on 9/28/1999 is non-detect.
5. J - Estimated values.
6. D - This flag indicates a result from a diluted sample.
7. Data with flag labeled on graph as appropriate.
8. No water elevation available December 2003.

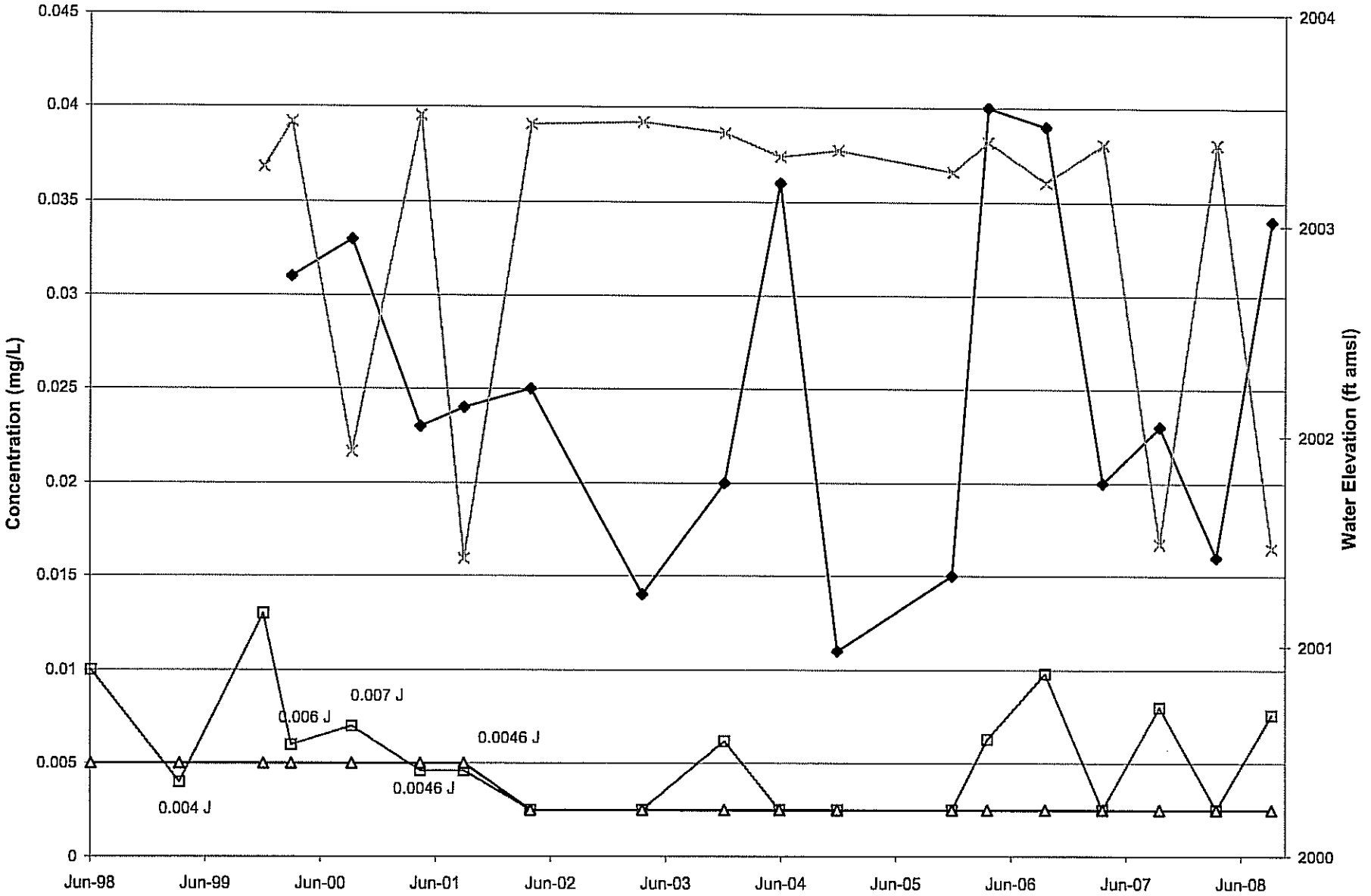
MW-11S VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. E - Results are greater than the calibration range fo the instrument used for analysis.
4. Vinyl chloride results are non-detect with an exception of result on 6/17/1998.
5. Data with flag labeled on graph as appropriate.

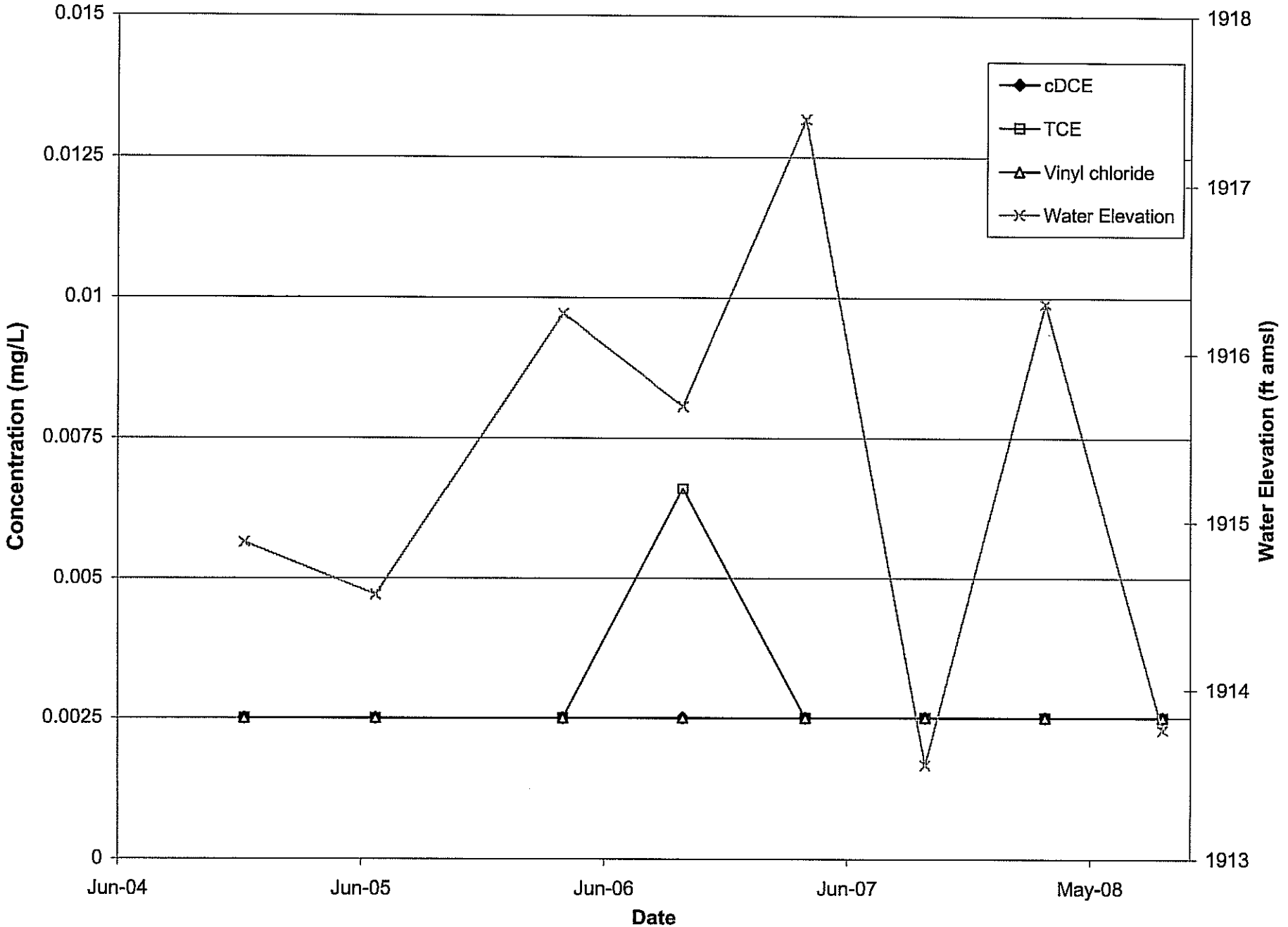
MW-15S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. J - Estimated value.
4. All Vinyl chloride and a majority of TCE results are non-detect.
5. Data with flag labeled on graph as appropriate.

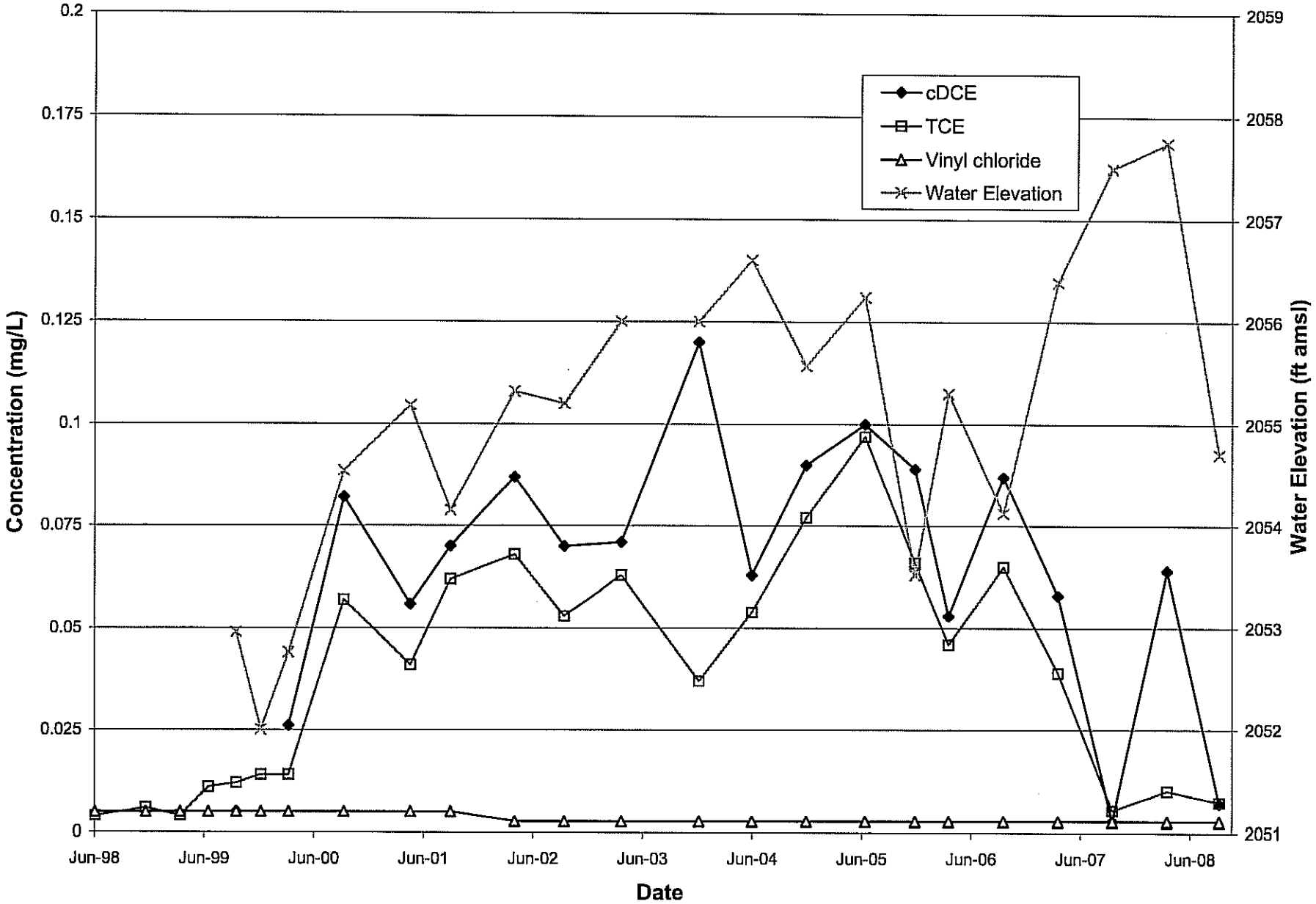
MW-16S VOCs



Notes:

1. All values for cDCE, TCE and Vinyl chloride are non-detect with the exception of TCE on 9/27/2006.
2. There is no data available for MW-16S prior to December 2004.

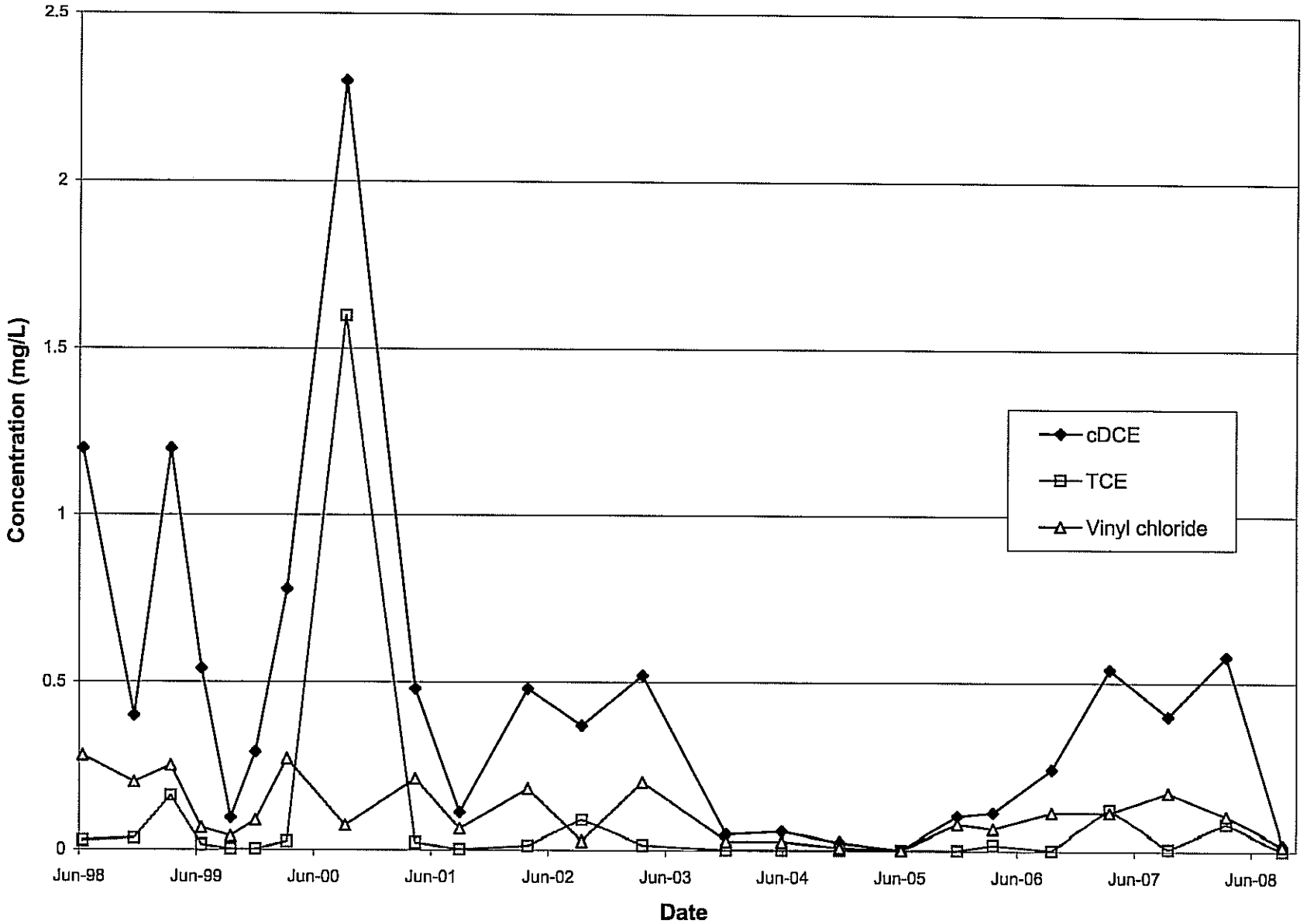
MW-18S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/15/1998, 12/1/1998 and 3/26/1999 are estimated values.
4. Vinyl chloride results are non-detect; cDCE is non-detect on 9/29/1999 and 9/25/2007.

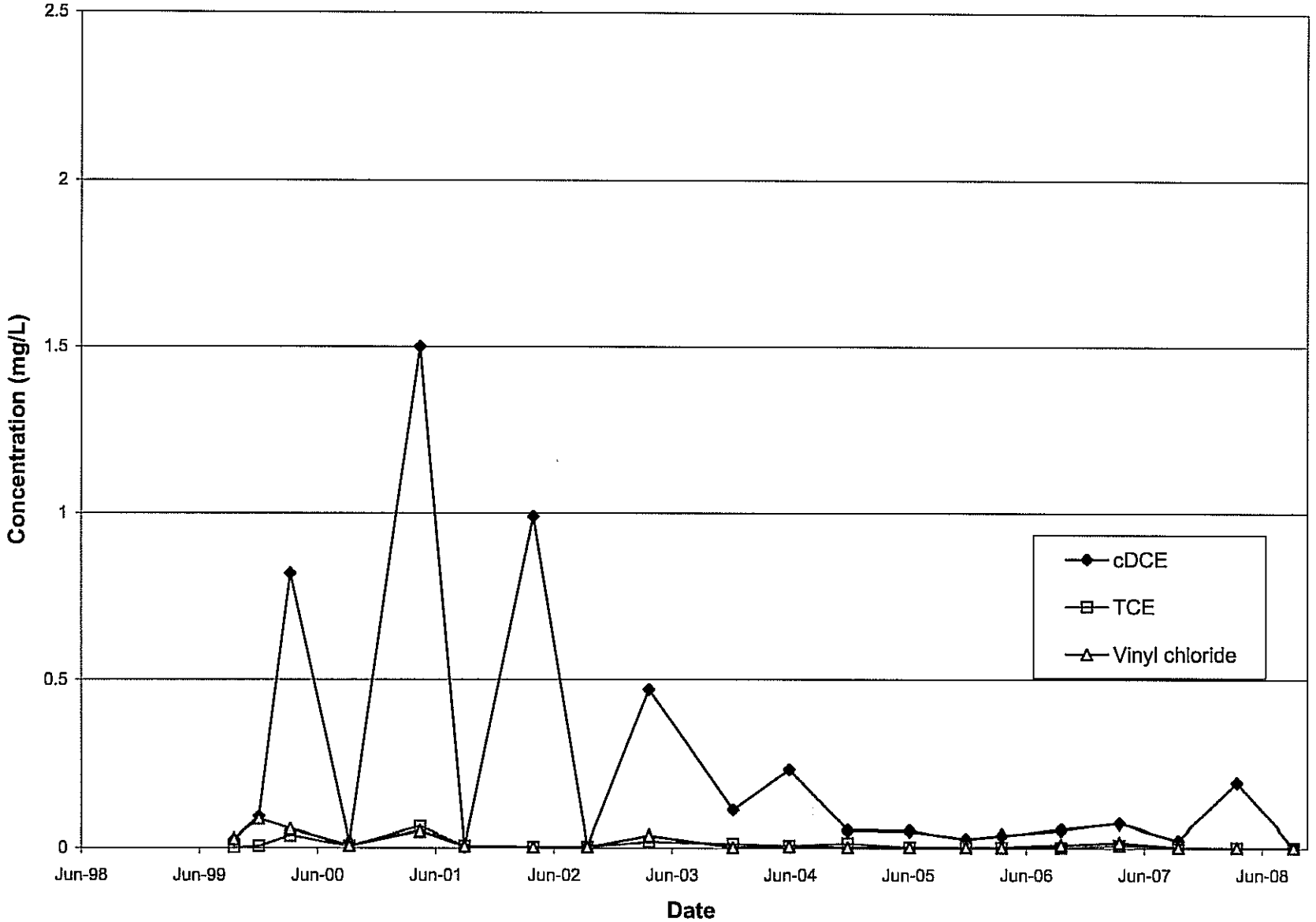
MH-32



Notes:

1. 1/2 Detection limit used for non-detects.

MH-33



Notes:

1. 1/2 Detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-3A Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/1/98	3/25/99	6/24/99	9/28/99	12/16/99	3/13/00	9/19/00	4/26/01	9/11/01	4/10/02	9/25/02	4/1/03	12/16/03	6/8/04	12/7/04	6/20/05	12/6/05	3/30/06	9/28/06	3/30/07	9/25/07	3/25/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	0.086	0.048	0.03	0.021	0.024	0.027	0.017	0.032	0.1301	0.113	0.207	0.178	0.156	0.438	0.451	0.398	1.143	0.291	0.204	0.349	0.26	0.418	0.19	0.118	Count "+"	Count "-"
0.086		-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	7
0.048			-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	6
0.03				-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	4
0.021					+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	1
0.024						+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	18	1
0.027							-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	1
0.017								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	0
0.032									+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0
0.1301										-	+	+	+	+	+	+	+	+	+	+	+	+	+	-	13	2
0.113											+	+	+	+	+	+	+	+	+	+	+	+	+	+	14	0
0.207												-	-	+	+	+	+	+	-	+	+	+	-	-	8	5
0.178													-	+	+	+	+	+	+	+	+	+	+	-	10	2
0.156														+	+	+	+	+	+	+	+	+	+	-	10	1
0.438															+	-	+	-	-	-	-	-	-	-	2	8
0.451																-	+	-	-	-	-	-	-	-	1	8
0.398																	+	-	-	-	-	+	-	-	2	6
1.143																		-	-	-	-	-	-	-	0	7
0.291																			-	+	-	+	-	-	2	4
0.204																				+	+	+	-	-	3	2
0.349																					-	+	-	-	1	3
0.26																						+	-	-	1	2
0.418																							-	-	0	2
0.19																								-	0	1
																									203	73
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = 130

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+... up to t_g]}

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1625.33

z_o = 3.1998

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.9993

p-value = 0.0007

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.1998 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0007 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend).**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-3B Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/1/98	3/25/99	6/24/99	9/28/99	12/13/99	3/13/00	9/19/00	4/25/01	9/11/01	4/9/02	9/24/02	3/31/03	12/16/03	6/8/04	12/7/04	6/20/05	12/6/05	3/30/06	9/28/06	3/30/07	9/25/07	3/25/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	0.104	0.094	0.054	0.085	0.08	0.116	0.091	0.093	0.0939	0.0947	0.1251	0.099	0.1251	0.168	0.1765	0.189	0.274	0.537	0.262	0.262	0.326	0.347	0.298	0.348	Count "+"	Count "-"
0.104		-	-	-	-	+	-	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	14	9
0.094			-	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	6
0.054				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	21	0
0.085					-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	1
0.08						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	0
0.116							-	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	13	5
0.091								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	0
0.093									+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0
0.0939										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	15	0
0.0947											+	+	+	+	+	+	+	+	+	+	+	+	+	+	14	0
0.1251												-	0	+	+	+	+	+	+	+	+	+	+	+	11	1
0.099													+	+	+	+	+	+	+	+	+	+	+	+	12	0
0.1251														+	+	+	+	+	+	+	+	+	+	+	11	0
0.168															+	+	+	+	+	+	+	+	+	+	10	0
0.1765																+	+	+	+	+	+	+	+	+	9	0
0.189																	+	+	+	+	+	+	+	+	8	0
0.274																		+	-	-	+	+	+	+	5	2
0.537																			-	-	-	-	-	-	0	6
0.262																				0	+	+	+	+	4	0
0.262																					+	+	+	+	4	0
0.326																						+	-	+	2	1
0.347																							-	+	1	1
0.298																								+	1	0
																									242	32
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = 210

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 2

g = the number of tied sample groups

V(S) = 1623.33

z_o = 5.1873

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.9999 (off scale)

p-value = 0.0001

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 5.1873 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0001 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-4B Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/15/98	12/1/98	3/25/99	6/24/99	9/28/99	12/13/99	3/13/00	4/25/01	4/9/02	4/1/03	6/8/04	6/20/05	12/7/05	3/28/06	9/27/06	3/29/07	9/25/07	3/25/08	9/16/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Result (mg/L)	0.021	0.0025	0.012	0.017	0.014	0.007	0.013	0.0126	0.0078	0.0091	0.0025	0.0025	0.0057	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	Count "+"	Count "-"
0.021		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18
0.0025			+	+	+	+	+	+	+	+	0	0	+	0	0	0	0	0	0	9	0
0.012				+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	4	12
0.017					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15
0.014						-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
0.007							+	+	+	+	-	-	-	-	-	-	-	-	-	4	9
0.013								-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.0126									-	-	-	-	-	-	-	-	-	-	-	0	11
0.0078										+	-	-	-	-	-	-	-	-	-	1	9
0.0091											-	-	-	-	-	-	-	-	-	0	9
0.0025												0	+	0	0	0	0	0	0	1	0
0.0025													+	0	0	0	0	0	0	1	0
0.0057														-	-	-	-	-	-	0	6
0.0025															0	0	0	0	0	0	0
0.0025																0	0	0	0	0	0
0.0025																	0	0	0	0	0
0.0025																		0	0	0	0
0.0025																			0	0	0
0.0025																			0	0	0
																				20	115
																				Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -95

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 19

t_1 = number of tied samples in the first group = 9

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 725.00

z_o = -3.4911

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.0002

p-value = 0.9998

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.4911 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9998 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-4D Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/24/99	6/23/99	9/28/99	12/13/99	3/14/00	9/21/00	4/24/01	9/12/01	4/11/02	9/26/02	3/28/03	12/18/03	6/9/04	12/9/04	6/21/05	12/7/05	3/29/06	9/27/06	3/27/07	9/25/07	3/24/08	9/16/08	12/11/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Result (mg/L)	1.83	15.3	1.784	6.774	11.25	6.81	2.35	3.07	2.0401	3.037	2.067	1.173	3.012	1.011	0.88	0.659	1.317	1.312	0.503	1.17	0.651	3.68	1.06	3.33	2.3	Count "+"	Count "-"
1.83		+	-	+	+	+	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	+	-	+	+	13	11
15.3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	23
1.784			+	+	+	+	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	+	-	+	+	12	10
6.774				+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	19
11.25					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20
6.81						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19
2.35							+	-	+	-	-	+	-	-	-	-	-	-	-	-	-	+	-	+	-	5	13
3.07								-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	2	15
2.0401									+	+	-	+	-	-	-	-	-	-	-	-	-	+	-	+	+	6	10
3.037										-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	2	13
2.067											-	+	-	-	-	-	-	-	-	-	-	+	-	+	+	4	10
1.173												+	-	-	-	+	+	-	-	-	-	+	-	+	+	6	7
3.012													-	-	-	-	-	-	-	-	-	+	-	+	-	2	10
1.011														-	-	+	+	-	+	-	+	+	+	+	+	7	4
0.88															-	+	+	-	+	-	+	+	+	+	+	7	3
0.659																+	+	-	+	-	+	+	+	+	+	7	2
1.317																	-	-	-	-	+	-	+	+	+	3	5
1.312																		-	-	-	+	-	+	+	+	3	4
0.503																			+	+	+	+	+	+	+	6	0
1.17																				-	+	-	+	+	+	3	2
0.651																					+	+	+	+	+	4	0
3.68																						-	+	-	-	0	3
1.06																								+	+	2	0
3.33																									-	0	1
																										75	189
																										Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -114

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternate Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 25

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1833.33

z_o = -2.6391

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0041

p-value = 0.9959

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 2.6391 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9959 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-5D Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/23/99	6/23/99	9/28/99	12/14/99	3/14/00	9/20/00	4/24/01	9/12/01	4/11/02	9/25/02	4/2/03	12/18/03	6/9/04	12/9/04	6/22/05	12/7/05	3/29/06	9/28/06	3/27/07	9/25/07	3/26/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	2.484	2.98	1.74	1.166	1.84	3.134	1.581	2.78	1.7073	4.4528	4.9869	1.19	1.66	2.1	2.5814	1.686	1.991	1.618	1.897	1.665	2.161	1.706	1.945	1.469	Count "+"	Count "-"
2.484		+	-	-	-	+	-	+	-	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	6	17
2.98			-	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	3	19
1.74				-	+	+	-	+	-	+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	11	10
1.166					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	20	0
1.84						+	-	+	-	+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	10	9
3.134							-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	2	16
1.581								+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	15	2
2.78									-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14
1.7073										+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	8	7
4.4528											+	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13
4.9869												-	-	-	-	-	-	-	-	-	-	-	-	-	0	13
1.19													+	+	+	+	+	+	+	+	+	+	+	+	12	0
1.66														+	+	+	+	-	+	+	+	+	+	-	9	2
2.1															+	-	-	-	-	-	+	-	-	-	2	8
2.5814																-	-	-	-	-	-	-	-	-	0	9
1.686																	+	-	+	-	+	+	+	-	5	3
1.991																		-	-	-	+	-	-	-	1	6
1.618																			+	+	+	+	+	-	5	1
1.897																				-	+	-	+	-	2	3
1.665																					+	+	+	-	3	1
2.161																						-	-	-	0	3
1.706																							+	-	1	1
1.945																								-	0	1
																									118 Total "+"	158 Total "-"

S = Total Number of "+" minus Total Number of "-" = -40

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1625.33

z_o = -0.9674

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.165

p-value = 0.8350

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.9674 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.8350 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend (i.e. No trend / stable)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-5S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/24/99	6/23/99	12/16/99	3/14/00	9/20/00	4/23/01	9/12/01	4/11/02	9/26/02	3/28/03	12/18/03	6/9/04	12/9/04	6/22/05	12/7/05	3/29/06	9/28/06	3/27/07	9/25/07	3/26/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Result (mg/L)	3.06	4.796	0.116	2.413	5.14	2.03	2.41	1.6543	1.7	1.44	0.575	1.09	0.753	0.872	0.233	0.86	0.74	0.391	0.634	1.118	0.651	0.391	0.512	Count "+"	Count "-"
3.06		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	20
4.796			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	20
0.116				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	20	0
2.413					+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	18
5.14						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18
2.03							+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	16
2.41								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	16
1.6543									+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	14
1.7										-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
1.44											-	-	-	-	-	-	-	-	-	-	-	-	-	0	13
0.575												+	+	+	-	+	+	-	+	+	+	-	-	8	4
1.09													-	-	-	-	-	-	-	+	-	-	-	1	10
0.753														+	-	+	-	-	-	+	-	-	-	3	7
0.872															-	-	-	-	-	+	-	-	-	1	8
0.233																+	+	+	+	+	+	+	+	8	0
0.86																	-	-	-	+	-	-	-	1	6
0.74																		-	-	+	-	-	-	1	5
0.391																			+	+	+	0	+	4	0
0.634																				+	+	-	-	2	2
1.118																					-	-	-	0	3
0.651																						-	-	0	2
0.391																							+	1	0
																								56	196
																								Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -140

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 23

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1432.67

z_o = -3.6723

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0001 (off scale)

p-value = 0.9999

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.6723 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9999 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-11S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/8/04	6/23/05	12/8/05	3/31/06	9/27/06	3/30/07	9/26/07	3/24/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10		
Result (mg/L)	2.752	3.42	3.73	3.73	3.66	3.54	3.4	3.72	3.05	3.21	Count "+"	Count "-"
2.752		+	+	+	+	+	+	+	+	+	9	0
3.42			+	+	+	+	-	+	-	-	5	3
3.73				0	-	-	-	-	-	-	0	6
3.73					-	-	-	-	-	-	0	6
3.66						-	-	+	-	-	1	4
3.54							-	+	-	-	1	3
3.4								+	-	-	1	2
3.72									-	-	0	2
3.05										+	1	0
											18	26
											Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -8

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 10

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 124.00

z_o = -0.6286

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.2648

p-value = 0.7352

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.6286 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.7352 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend (i.e. No trend / stable)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-15S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	3/25/99	12/16/99	3/13/00	9/21/00	4/26/01	9/11/01	4/10/02	3/31/03	12/16/03	6/8/04	12/8/04	12/7/05	3/30/06	9/28/06	3/29/07	9/26/07	3/24/08	9/16/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Result (mg/L)	0.103	0.027	0.073	0.037	0.04	0.0276	0.0286	0.025	0.014	0.0262	0.036	0.011	0.015	0.0463	0.0488	0.02	0.031	0.016	0.0416	0.0416	Count "+"	Count "-"
0.103		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19
0.027			+	+	+	+	+	-	-	-	+	-	-	+	+	-	+	-	+	+	11	7
0.073				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	17
0.037					+	-	-	-	-	-	-	-	-	+	+	-	-	-	+	+	5	11
0.04						-	-	-	-	-	-	-	-	+	+	-	-	-	+	+	4	11
0.0276							+	-	-	-	+	-	-	+	+	-	+	-	+	+	7	7
0.0286								-	-	-	+	-	-	+	+	-	+	-	+	+	6	7
0.025									-	+	+	-	-	+	+	-	+	-	+	+	7	5
0.014										+	+	-	+	+	+	+	+	+	+	+	10	1
0.0262											+	-	-	+	+	-	+	-	+	+	6	4
0.036												-	-	+	+	-	-	-	+	+	4	5
0.011													+	+	+	+	+	+	+	+	8	0
0.015														+	+	+	+	+	+	+	7	0
0.0463															+	-	-	-	-	-	1	5
0.0488																-	-	-	-	-	0	5
0.02																	+	-	+	+	3	1
0.031																		-	+	+	2	1
0.016																			+	+	2	0
0.0416																				0	0	0
																					83	106
																					Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -23

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 20

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 949.00

z_o = -0.7142

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.2376

p-value = 0.7624

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.7142 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.7624 > 0.05

we fail to reject the null hypothesis of no trend

Therefore:

We fail to reject the null hypothesis of no trend (i.e. No trend / stable)

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-18S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/15/98	12/1/98	3/26/99	6/28/99	9/29/99	12/20/99	3/21/00	9/21/00	4/30/01	9/11/01	4/12/02	9/25/02	4/3/03	12/17/03	6/11/04	12/9/04	6/23/05	12/6/05	3/28/06	9/27/06	3/28/07	9/25/07	3/26/08	9/16/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	20	21	22	23	24		
Result (mg/L)	0.024	0.026	0.018	0.038	0.04	0.049	0.087	0.139	0.097	0.132	0.155	0.123	0.134	0.157	0.117	0.167	0.197	0.155	0.099	0.152	0.097	0.0052	0.074	0.0141	Count "+"	Count "-"
0.024		+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	20	3
0.026			-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	19	3
0.018				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	19	2
0.038					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	18	2
0.04						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	17	2
0.049							+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	16	2
0.087								+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	14	3
0.139									-	-	+	-	-	+	-	+	+	+	-	+	-	-	-	-	6	10
0.097										+	+	+	+	+	+	+	+	+	+	+	0	-	-	-	11	3
0.132											+	-	+	+	-	+	+	+	-	+	-	-	-	-	7	7
0.155												-	-	+	-	+	+	0	-	-	-	-	-	-	3	9
0.123													+	+	-	+	+	+	-	+	-	-	-	-	6	6
0.134														+	-	+	+	+	-	+	-	-	-	-	5	6
0.157															-	+	+	-	-	-	-	-	-	-	2	8
0.117																+	+	+	-	+	-	-	-	-	4	5
0.167																	+	-	-	-	-	-	-	-	1	7
0.197																		-	-	-	-	-	-	-	0	7
0.155																			-	-	-	-	-	-	0	6
0.099																				+	-	-	-	-	1	4
0.152																					-	-	-	-	0	4
0.097																						-	-	-	0	3
0.0052																							+	+	2	0
0.074																								-	0	1
																									171	103
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = 68

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 2

g = the number of tied sample groups

V(S) = 1623.33

z_o = 1.6629

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.9518

p-value = 0.0482

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 1.6629 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0482 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 2

2009 Proposed Monitoring Program
Wellsville/Andover Landfill

Location	Current Sampling Frequency	Proposed Sampling Frequency	Proposed Analyte List[1]
Groundwater			
CW-3A	Semiannual	NR	NR
CW-3B	Semiannual	Annual - Fall	Field, VOCs, Metals
CW-4A	Annual	NR	NR
CW-4B	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-15DA	Semiannual	NR	NR
MW-15S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-17D	Annual	Annual - Fall	Field, VOCs, Metals
MW-17S	Annual	Annual - Fall	Field, VOCs, Metals
MW-18D	Annual	Annual - Fall	Field, VOCs, Metals
MW-18S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-1D	Annual	NR	NR
MW-3D	Annual	Annual - Fall	Field, VOCs, Metals
MW-3S	Annual	Annual - Fall	Field, VOCs, Metals
MW-4D	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-5D	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-5S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-11S	Semiannual	Annual - Fall	VOCs
MW-16S	Semiannual	Annual - Fall	VOCs
Surface Water			
SWS-1	Annual	Annual	Field, VOCs, Metals, Wet Chem
Sediment			
SWS-1	Annual	NR	NR
Groundwater Cut-Off System			
MH-32	Semiannual	Annual - Fall	Field, VOCs, Metals, Wet Chem
MH-33	Semiannual	Annual - Fall	Field, VOCs, Metals, Wet Chem
Leachate			
LS-1	Semiannual	Annual - Fall	Field, VOCs, Metals

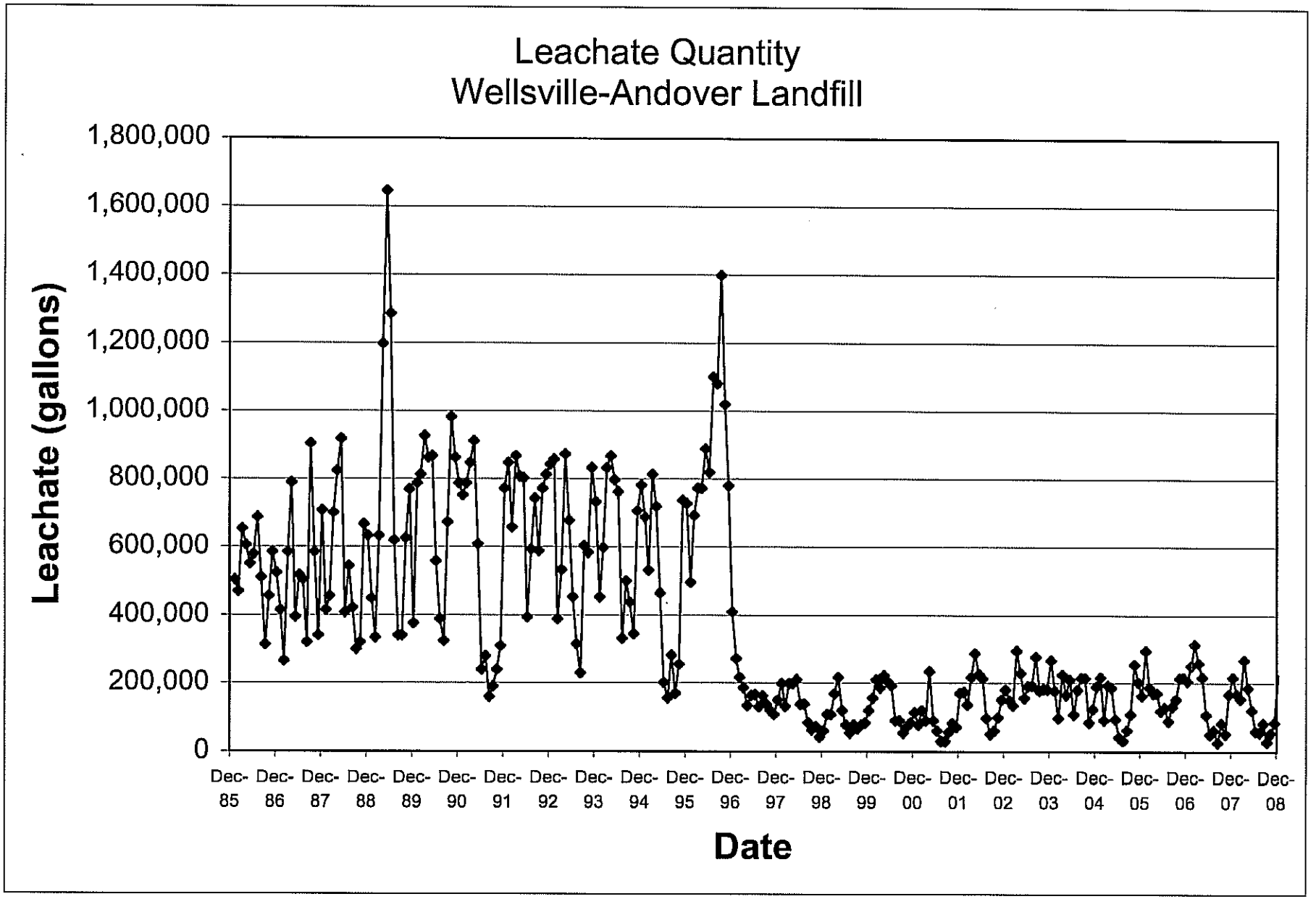
Location	Current Sampling Frequency	Proposed Sampling Frequency	Proposed Analyte List[1]
Residential Water Supply			
WAL-1	Every 3 Years	NR	NR
WAL-2	Semiannual	Annual	Metals
WAL-3	Every 3 Years	NR	NR
WAL-4	Every 3 Years	NR	NR
WAL-5	Semiannual	Annual	VOCs, Metals
WAL-6	Every 3 Years	NR	NR
WAL-7	Every 3 Years	NR	NR
WAL-8	Every 3 Years	NR	NR
WAL-9	Every 3 Years	NR	NR
WAL-10	Every 3 Years	NR	NR
WAL-11	Every 3 Years	NR	NR
WAL-12	Every 3 Years	NR	NR
WAL-13	Every 3 Years	NR	NR
WAL-14	Every 3 Years	NR	NR
WAL-15	Every 3 Years	NR	NR
WAL-16	Every 3 Years	NR	NR
WAL-17	Every 3 Years	NR	NR
WAL-18	Every 3 Years	NR	NR
WAL-19	Semiannual	Semiannual	VOCs[2]
WAL-20	Every 3 Years	NR	NR

Notes

NR - Not required unless site conditions warrant (I.e., significant leachate breakout, leachate spill, etc.)

[1] - Field = Field Parameters (pH, Conductivity, Dissolved Oxygen, Turbidity, Oxidation Reduction Potential)
- VOCs = Volatile Organic Compounds method 8260
- Metals = As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, P, Se, Na, Z
- Wet Chem = Nitrate Nitrogen and Total Dissolved Solids

[2] WAL-19 tested for VOCs prior to filters, between filters and after filters


Leachate Quantity
Wellsville-Andover Landfill
Leachate (gallons)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Date

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7220; **Fax** (716) 851-7226
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

May 12, 2009

William Whitfield
Director of Public Works
Village of Wellsville
200 Bolivar Road
Wellsville, New York 14895

Dear Mr. Whitfield:

Wellsville-Andover Landfill
Site hw902004
Wellsville, Alleghany County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have reviewed the Site Monitoring Evaluation and Proposed Revised Monitoring Plan dated April 3, 2009, for the Wellsville-Andover Landfill site. This plan recommends modification of the environmental sampling for the landfill and the surrounding residences. Based on this review, the following determinations regarding the sampling frequency have been made.

Groundwater Monitoring Well CW-3A

This overburden monitoring well has increasing Volatile Organic Comounds (VOC) contamination and should be retained for annual sampling for field, VOC and metal analytes. It monitors a different interval of the overburden formation than the neighboring CW-3B monitoring well. The location is adjacent and downgradient from the landfill and could be an important sentinel well if the groundwater flow patterns should change.

Groundwater Monitoring Wells CW-3B, CW-4B, MW-15S, MW-17D, MW-17S, MW-18D, MW-18S, MW-3D, MW-3S

We concur with the proposed annual frequency and the proposed analyte list for these monitoring wells.

Groundwater Monitoring Well CW-4A

This monitoring well should be retained for annual sampling since it monitors a different interval of the overburden formation than the neighboring CW-4B. The location is adjacent and downgradient from the landfill and could be an important sentinel well if the groundwater flow patterns should change.

Groundwater Monitoring Well MW-15DA

This bedrock well has not been sampled following the remedial action since it has been dry. We concur with the removal from the required sampling list. This monitoring well should be decommissioned.

Groundwater Monitoring Well MW-1D

This monitoring well can also be decommissioned. MW-3S and MW-3D can both function as the upgradient monitoring wells. We concur with the deletion from the sampling schedule. This monitoring well is located at too great a distance to be useful as an upgradient well.

Groundwater Monitoring Wells MW-4D, MW-5D, MW-5S, MW-11S and MW-16S

These monitoring wells should all be sampled annually for the field, VOCs and metals parameters. In addition, there should be a sampling round in the spring for VOCs only. The VOCs in MW-4D, MW-5D, MW-5S and MW-11S are of concern to the Departments. In addition, groundwater concentrations in the sentinel landfill well MW-16 is of particular concern, since it is the furthest downgradient monitoring well from the landfill. If MW-16 becomes contaminated, there should be an assessment of both the remedy and the downgradient monitoring and residential sampling.

Surface Water and Sediment Sampling – SWS-1

Since these monitoring points are potential exposure points, they should be monitored annually for the field, VOCs and metals parameters. In addition the surface water and sediment sampling should be sampled for the full wet chemistry list that it currently in effect.

Groundwater Cut-Off System MH-32, MH-33 and Leachate LS-1

We concur with the proposed sampling frequency and analyte list for these sampling points.

Recommendation to discontinue sampling of several residential wells

We concur with the recommendation to discontinue sampling at the following residential wells currently within the sampling program:

WAL-1:Shettine Residence; WAL-16 Cornell Residence

No site-related constituents have been detected in these wells at concentrations that exceed NYSDOH standards for public drinking water supplies. Additionally, given that the WAL-1 residence is currently unoccupied and the WAL-16 residence is significantly distant from the landfill, we agree with the recommendation to discontinue sampling of these wells.

WAL-3: Gephart Residence; WAL-4: Hanabach Residence; WAL-8: Dodge Residence; WAL-9: Greene Residence; WAL-10: Schettine Residence; WAL-14 Carl Residence; WAL-18: Geffer Residence; WAL-13: Wispel Residence; WAL-15: Kelly Residence

Sodium has been detected in these residential wells at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium were originally based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternate supply of water for drinking and cooking purposes. While semi-volatile organic compounds have been detected sporatically in several sampling events, these compounds were detected at concentrations significantly lower than the NYSDOH public drinking water standards. Based on this information, we agree with the recommendation to discontinue sampling of these wells.

WAL-6: Cimino Residence

Iron and manganese have been detected at concentrations that exceed NYSDOH public drinking water standards in two sampling events. However, no compounds were detected at levels which exceed NYSDOH drinking water standards in the last three of the six sampling events completed. Based on this information, we agree with the recommendation to discontinue sampling of this well.

WAL-11: Urban Residence

Iron has been historically detected in WAL-11 at concentrations that exceed NYSDOH public drinking water standards. However, levels of iron detected in the last of the twelve sampling events completed did not exceed drinking water standards. Standards for iron were based on aesthetic properties and were set to prevent problems such as poor taste, odor and fixture staining. Given this information, we concur with the recommendation to discontinue sampling of this well.

WAL-12: Blaske Residence

Iron and sodium have been detected in this residential well during the three completed sampling events at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium and iron were based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternative supply of water for drinking and cooking purposes. Based on this information, we concur with the recommendation to discontinue sampling of this well.

WAL-17: Meisenzhal Residence

Iron and sodium have been detected at WAL-17 at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium and iron were based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on a severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternate supply of water for drinking and cooking purposes. Based on this information, we agree with the proposal to discontinue sampling of this well.

WAL-20: Fanton Residence

Current sampling frequency: every three years
Proposed sampling frequency: discontinue sampling

Three sampling events have been completed since the granulated activated carbon filter system was removed from WAL-20 in January of 2007 (subsequent to placement of a new drinking water well in 2005). With the exception of sodium, no site-related constituents have been detected in WAL-20 at levels that exceed applicable standards. Additionally, this well is located a substantial distance from the landfill. Based on this information, we agree with the recommendation to discontinue sampling of this well.

Recommendation to modify sampling frequency

We concur with the recommendation to modify the sampling frequency at the following residential wells currently within the sampling program:

WAL-2: Rossini Residence

Inorganic compounds (metals), including sodium, iron and manganese have historically been detected in WAL-2 at concentrations that exceed NYSDOH public drinking water standards. We understand that this residence is adjacent to the Wellsville-Andover landfill, is occupied seasonally and that the homeowner uses bottled water as a source of potable water while in-residence. Given this information, we concur with the recommendation of annual sampling for metals compounds. This is reduced from semi-annual sampling for inorganic compounds.

WAL-5: Ormsby Residence

Volatile organic compounds, including cis-1,2-dichloroethene and trichloroethene and metals compounds have been detected at low concentrations (below NYSDOH drinking water standards) in WAL-5. The concentrations of these compounds has remained relatively consistent over semi-annual sampling events completed from 1998 to 2002 and have not been detected in the last twelve sampling events. Based on this information, we concur with the recommendation to reduce the sampling frequency from semi-annual to annual sampling.

WAL-19: LaDue Residence

We concur with the recommendation to continue semi-annual sampling.

Although a review of the available data supports the proposed modifications to the sampling program, it should be noted that, should conditions change additional sampling or re-sampling of the environmental media may be warranted and requested by either NYSDOH or NYSDEC.

If you have any questions, please contact me at 716-851-7220.

Sincerely,

Linda C. Ross

Linda C. Ross
Project Manager
Division of Environmental Remediation

LCR/tml

cc: Mr. Jonathan Brandes, On-Site Technical Services, Inc
Ms. Tamara Girard, NYSDOH

Jon Brandes

From: "Linda Ross" <lcross@gw.dec.state.ny.us>
To: "Jon Brandes" <Jonb@on-sitehs.com>
Cc: "Tamara Girard" <tsg01@health.state.ny.us>; "William Whitfield" <billwhitfield@wellsvilleny.com>
Sent: Friday, May 22, 2009 1:15 PM
Attach: MON PROGRAM REV Table.xls
Subject: Fwd: Wellsville Andover Landfill

Jon, I agree with your proposal below in the email and the attached monitoring schedule. Please continue with the landfill gas monitoring, since they are potential exposure points. Thanks. L.

Linda C. Ross
Engineering Geologist 1
New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
lcross@gw.dec.state.ny.us
office: 716. 851. 7220
fax: 716. 851. 7226

>>> "Jon Brandes" <Jonb@on-sitehs.com> 5/22/2009 11:59 AM >>>
Linda,

Based on your response to the site evaluation and proposed monitoring program, we have revised the monitoring program table - please see attached. We will follow this schedule starting with the fall event. One item that was not commented on is the request to discontinue landfill gas monitoring. Please provide comment.

Also I propose the following for reporting:
1) The spring 2009 sampling event was completed following the old monitoring schedule and the typical report will be completed.
2) For each future spring and fall event a letter report will be prepared once analytical results are received. The letter report will present the results of the monitoring event.
3) A annual report each year similar to previous annual reports.

Thanks and have a great holiday weekend!!

Jon Brandes, P.G.
Senior Geologist
On-Site Technical Services, Inc.
72 Railroad Ave
Wellsville, NY 14895
Phone: 585-593-1824
Fax: 585-593-7471

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: WILLIAM WHITFIELD Date: 3/31/10

Weather: SUNNY Temperature: 62°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	NONE DETECTED
	Slope stability	Check for erosion, slippage, slope failure.	NONE VISIBLE
	Vegetation	Check for areas of weak/no vegetation, revegetate.	NONE
		Mow semiannually.	MOWED 10/09
		Remove scrubs and trees from cover system and drainage ways.	NONE
	Vectors	Check for burrows and backfill with clean soil.	NONE
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	JAN./FEB./MARCH 467,979
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	NONE VISIBLE
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	PERFORMED BY ON-SITE TESTING
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	PERFORMED BY ON-SITE TESTING
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	PERFORMED BY ON-SITE TESTING

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: WILLIAM WHITFIELD
Date: 3/31/10
Weather: SUNNY
Temperature: 62°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	NONE VISIBLE
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	OK
	Culverts	Check condition and for blockage and erosion.	OK
	Detention ponds	Check outlet structure for blockage and general condition.	OK
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	OK
Groundwater monitoring system	Sampling wells	See Section 4.	PERFORMED BY ON-SITE TESTING
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	OK
	Access gate	Check condition. Lubricate lock.	GOOD
Other		Comments	STRAIGHTEN SIGNS AROUND CAP PERIMETER, GROUND WATER LATERALS L-27 & L-29 ADDRESSED IN REPORT FILED WITH ANNUAL REPORT.

Signed: [signature]
Date: 3/31/10

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: BILL WHITFIELD Date: 6/22/10

Weather: SUNNY Temperature: 76°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	NONE
	Slope stability	Check for erosion, slippage, slope failure.	NONE
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	MOWED 10/09
		Remove scrubs and trees from cover system and drainage ways.	NONE
	Vectors	Check for burrows and backfill with clean soil.	NONE
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	APR. / MAY / JUNE 373,895
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	NONE
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	PERFORMED BY ON-SITE TESTING
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	PERFORMED BY ON-SITE TESTING
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	PERFORMED BY ON-SITE TESTING

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: BILL WHITFIELD | Date: 6/23/10

Weather: SUNNY | Temperature: 76°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	OK
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	OK
	Culverts	Check condition and for blockage and erosion.	OK
	Detention ponds	Check outlet structure for blockage and general condition.	OK
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	NONE
Groundwater monitoring system	Sampling wells	See Section 4.	PERFORMED BY Q2 SITE TESTING
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	OK
	Access gate	Check condition. Lubricate lock.	OK
Other		Comments	

Signed: [signature]

Date: 6/23/10

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: BRAD MATTISON Date: 9-14-10

Weather: Partly Cloudy Temperature: 64°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	NONE
	Slope stability	Check for erosion, slippage, slope failure.	NONE
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	MOWED 10/09
		Remove scrubs and trees from cover system and drainage ways.	NONE
	Vectors	Check for burrows and backfill with clean soil.	NONE
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	185, 160
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	NONE
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	PERFORMED BY ON-site Testing
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	PERFORMED BY ON site Testing
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	PERFORMED BY ON Site Testing

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Brad Mattison — Date: 9/14/10

Weather: Partly Cloudy — Temperature: 64°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	OK
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	OK
	Culverts	Check condition and for blockage and erosion.	OK
	Detention ponds	Check outlet structure for blockage and general condition.	NONE/OK
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	NONE
Groundwater monitoring system	Sampling wells	See Section 4.	PERFORMED BY Onsite Testing
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	OK
	Access gate	Check condition. Lubricate lock.	OK
Other		Comments	

Signed: Bradley J Mattison

Date: 9/14/10

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Bradley J. Whitson
Date: 12/30/10
Weather: Clear & Cold
Temperature: 3°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	NONE
	Slope stability	Check for erosion, slippage, slope failure.	NONE
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	MOWED 10/10
		Remove scrubs and trees from cover system and drainage ways.	NONE
	Vectors	Check for burrows and backfill with clean soil.	NONE
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	Oct - Dec 554,580
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	NONE
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	PERFORMED BY ON-SITE
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	PERFORMED BY ON-SITE.
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	PERFORMED BY ON-SITE.

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Bradley T Madison Date: 12/30/10

Weather: Clear & Cold Temperature: 30°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	ok
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	OK
	Culverts	Check condition and for blockage and erosion.	OK
	Detention ponds	Check outlet structure for blockage and general condition.	OK
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	NONE
Groundwater monitoring system	Sampling wells	See Section 4.	Performed By On-Site.
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	OK
	Access gate	Check condition. Lubricate lock.	OK
Other		Comments	

Signed: Bradley T Madison

Date: 12/30/10

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/9/1998	6/15/1998	6/17/1998	12/1/1998	12/2/1998	3/23/1999	3/24/1999	3/25/1999	3/26/1999	6/23/1999	6/24/1999
CW-3A	Iron				15.8							
CW-3A	Manganese				0.306							
CW-3A	Sodium				55.6							
CW-3A	cis-1,2-Dichloroethene											
CW-3A	Trichloroethene			0.081	0.046				0.025			0.019
CW-3A	Vinyl chloride			0.01 U	0.01 U				0.01 U			0.01 U
CW-3B	Iron			0 U	0 U				0.0857 B			3.8
CW-3B	Manganese			0.0396	0 U				0.0054 B			0.0262
CW-3B	Sodium			19.9	21				22.1			18.9
CW-3B	cis-1,2-Dichloroethene											
CW-3B	Trichloroethene			0.028	0.038				0.027			0.034
CW-3B	Vinyl chloride			0.022	0.02				0.01 U			0.01
CW-4A	Iron		54.8		9.08				69.4			5.76
CW-4A	Manganese		3.82		2.11				2.56			1.7
CW-4A	Sodium		21.4		21				20.8			20
CW-4A	cis-1,2-Dichloroethene											
CW-4A	Trichloroethene		0.001 J		0.01 U				0.002 J			0.002 J
CW-4A	Vinyl chloride		0.006 J		0.003 J				0.005 J			0.005 J
CW-4B	Iron		2		9.11				36.3			3.52
CW-4B	Manganese		2.62		2.88				3.69			3.25
CW-4B	Sodium		22.6		24.1				30			28.2
CW-4B	cis-1,2-Dichloroethene											
CW-4B	Trichloroethene		0.01 U		0.01 U				0.01 U			0.01 U
CW-4B	Vinyl chloride		0.006 J		0.01 U				0.004 J			0.003 J
MW-3D	Iron	0.558						2.46			39.5	
MW-3D	Manganese	0.0117						0.0592			0.622	
MW-3D	Sodium	14						13			14.3	
MW-3D	cis-1,2-Dichloroethene											
MW-3D	Trichloroethene	0.002 J						0.012			0.01	
MW-3D	Vinyl chloride	0.01 U						0.01 U			0.008 J	
MW-3S	Iron							128			306	
MW-3S	Manganese							2.75			19.9	
MW-3S	Sodium							27.8			25.2	
MW-3S	cis-1,2-Dichloroethene											
MW-3S	Trichloroethene							0.01 U			0.01 U	
MW-3S	Vinyl chloride							0.01 U			0.01 U	
MW-4D	Iron	3.59			3.02			7.36			1.99	
MW-4D	Manganese	0.426			0.985			1.1			0.978	
MW-4D	Sodium	11.9			7.9			11.1			9.42	
MW-4D	cis-1,2-Dichloroethene											
MW-4D	Trichloroethene	0.19			1.3			0.17			0.24	
MW-4D	Vinyl chloride	0.78			2			0.41 E			1.5	
MW-5D	Iron	1.44			0.408		1.15				0.746	
MW-5D	Manganese	1.24			1.3		1.18				1.2	
MW-5D	Sodium	6.6			6.14		6.75				5.43	
MW-5D	cis-1,2-Dichloroethene											
MW-5D	Trichloroethene	0.083 J			0.13		0.09 J				0.04 J	
MW-5D	Vinyl chloride	0.59			0.75		0.45				0.2	

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/9/1998	6/15/1998	6/17/1998	12/1/1998	12/2/1998	3/23/1999	3/24/1999	3/25/1999	3/26/1999	6/23/1999	6/24/1999
MW-5S	Iron	12			4.08			10.5			3.83	
MW-5S	Manganese	0.25			0.266			0.195			0.22	
MW-5S	Sodium	7.4			7.08			2.44 B			7.74	
MW-5S	cis-1,2-Dichloroethene											
MW-5S	Trichloroethene	0.16			0.29 E			0.026			0.16	
MW-5S	Vinyl chloride	1 E			1 E			0.09			0.64 E	
MW-11S	Iron			23.3								
MW-11S	Manganese			1.38								
MW-11S	Sodium			15.2								
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene			2 E								
MW-11S	Vinyl chloride			0.084								
MW-17D	Iron		42.1			25.5				18.1		
MW-17D	Manganese		0.857			1.5				1.52		
MW-17D	Sodium		32.3			31.2				31.1		
MW-17D	cis-1,2-Dichloroethene											
MW-17D	Trichloroethene		0.01 U			0.01 U				0.01 U		
MW-17D	Vinyl chloride		0.01 U			0.01 U				0.01 U		
MW-17S	Iron		3.34		2.61					3.37		
MW-17S	Manganese		1.54		1.56					1.47		
MW-17S	Sodium		46.4		47.8					48.6		
MW-17S	cis-1,2-Dichloroethene											
MW-17S	Trichloroethene		0.007		0.01 U					0.002 J		
MW-17S	Vinyl chloride		0.002 J		0.01 U					0.01 U		
MW-18D	Iron		15.2			24.3				99.5		
MW-18D	Manganese		1.53			1.03				2.08		
MW-18D	Sodium		22.1			21.5				23.8		
MW-18D	cis-1,2-Dichloroethene											
MW-18D	Trichloroethene		0.01 U			0.01 U				0.01 U		
MW-18D	Vinyl chloride		0.01 U			0.01 U				0.01 U		
MW-18S	Iron		44.6		64					69.6		
MW-18S	Manganese		2.02		2.26					2.32		
MW-18S	Sodium		18.4		21.1					20.2		
MW-18S	cis-1,2-Dichloroethene											
MW-18S	Trichloroethene		0.004 J		0.006 J					0.004 J		
MW-18S	Vinyl chloride		0.01 U		0.01 U					0.01 U		

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/28/1999	9/28/1999	9/29/1999	12/13/1999	12/14/1999	12/15/1999	12/16/1999	12/20/1999	3/13/2000	3/14/2000
CW-3A	Iron		18.5					7.29			
CW-3A	Manganese		0.371					0.136			
CW-3A	Sodium		70					71			
CW-3A	cis-1,2-Dichloroethene		0.01 U							0.01 U	
CW-3A	Trichloroethene		0.021					0.026		0.017	
CW-3A	Vinyl chloride		0.01 U					0.01 U		0.01 U	
CW-3B	Iron		0.149		0.568					0.196	
CW-3B	Manganese		0.01 U		0.01 U					0.01 U	
CW-3B	Sodium		22.5		22.8					19.7	
CW-3B	cis-1,2-Dichloroethene		0.01 U							0.033	
CW-3B	Trichloroethene		0.035		0.05					0.048	
CW-3B	Vinyl chloride		0.01		0.012					0.008 J	
CW-4A	Iron		1.84		0.258					1.32	
CW-4A	Manganese		2.02		1.63					1.97	
CW-4A	Sodium		23.2		21.3					20.8	
CW-4A	cis-1,2-Dichloroethene		0.01 U							0.018	
CW-4A	Trichloroethene		0.002 J		0.002 J					0.002 J	
CW-4A	Vinyl chloride		0.004 J		0.006 J					0.004 J	
CW-4B	Iron		1.14		0.238					0.841	
CW-4B	Manganese		1.74		1.5					1.39	
CW-4B	Sodium		26.8		26.3					22.8	
CW-4B	cis-1,2-Dichloroethene		0.01 U							0.011	
CW-4B	Trichloroethene		0.01 U		0.01 U					0.01 U	
CW-4B	Vinyl chloride		0.002 J		0.01 U					0.002 J	
MW-3D	Iron		6.34				28.1				
MW-3D	Manganese		0.125				0.371				
MW-3D	Sodium		14.6				20.3				
MW-3D	cis-1,2-Dichloroethene		0.01 U								
MW-3D	Trichloroethene		0.017				0.018				
MW-3D	Vinyl chloride		0.01				0.008 J				
MW-3S	Iron		86.1				114				
MW-3S	Manganese		3.46				3.24				
MW-3S	Sodium		28.8				28.7				
MW-3S	cis-1,2-Dichloroethene		0.01 U								
MW-3S	Trichloroethene		0.01 U				0.01 U				
MW-3S	Vinyl chloride		0.01 U				0.01 U				
MW-4D	Iron		0.722		0.686						1.21
MW-4D	Manganese		1.47		0.743						1.55
MW-4D	Sodium		10.9		17.4						10
MW-4D	cis-1,2-Dichloroethene		0.01 U								1.7
MW-4D	Trichloroethene		0.27 J		0.21 J						0.14
MW-4D	Vinyl chloride		1.8		1						0.51
MW-5D	Iron		0.315			0.357					0.983
MW-5D	Manganese		1.03			1.2					1.15
MW-5D	Sodium		6.65			7.43					6.22
MW-5D	cis-1,2-Dichloroethene		0.01 U								1.1
MW-5D	Trichloroethene		0.053 J			0.14					0.089 J
MW-5D	Vinyl chloride		0.35			0.72					0.38

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/28/1999	9/28/1999	9/29/1999	12/13/1999	12/14/1999	12/15/1999	12/16/1999	12/20/1999	3/13/2000	3/14/2000
MW-5S	Iron							5.82			1.76
MW-5S	Manganese							0.274			0.258
MW-5S	Sodium							7.84			7.7
MW-5S	cis-1,2-Dichloroethene										1.4
MW-5S	Trichloroethene							0.14			0.14
MW-5S	Vinyl chloride							0.63			0.49
MW-11S	Iron										
MW-11S	Manganese										
MW-11S	Sodium										
MW-11S	cis-1,2-Dichloroethene										
MW-11S	Trichloroethene										
MW-11S	Vinyl chloride										
MW-17D	Iron	17.5		12.3					12.1		
MW-17D	Manganese	0.982		1.21					1.2		
MW-17D	Sodium	28.8		29.8					28.7		
MW-17D	cis-1,2-Dichloroethene			0.01 U							
MW-17D	Trichloroethene	0.01 U		0.01 U					0.01 U		
MW-17D	Vinyl chloride	0.01 U		0.01 U					0.01 U		
MW-17S	Iron	4.47		48.2					43.7		
MW-17S	Manganese	0.633		3.82					2.46		
MW-17S	Sodium	46.5		48.7					44.7		
MW-17S	cis-1,2-Dichloroethene			0.01 U							
MW-17S	Trichloroethene	0.002 J		0.001 J					0.002 J		
MW-17S	Vinyl chloride	0.01 U		0.01 U					0.01 U		
MW-18D	Iron	105		109					786		
MW-18D	Manganese	1.94		2.64					9.77		
MW-18D	Sodium	21.9		27					28.9		
MW-18D	cis-1,2-Dichloroethene			0.01 U							
MW-18D	Trichloroethene	0.01 U		0.01 U					0.01 U		
MW-18D	Vinyl chloride	0.01 U		0.01 U					0.01 U		
MW-18S	Iron	180		275					413		
MW-18S	Manganese	5.3		6.29					5.83		
MW-18S	Sodium	20.3		23.4					21.1		
MW-18S	cis-1,2-Dichloroethene			0.01 U							
MW-18S	Trichloroethene	0.011		0.012					0.014		
MW-18S	Vinyl chloride	0.01 U		0.01 U					0.01 U		

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/15/2000	3/16/2000	3/21/2000	9/19/2000	9/20/2000	9/21/2000	4/23/2001	4/24/2001	4/25/2001	4/26/2001	4/30/2001
CW-3A	Iron				3.07						0.172	
CW-3A	Manganese				0.101						0.01 U	
CW-3A	Sodium				71.7						32.2	
CW-3A	cis-1,2-Dichloroethene				0.01 U						0.0081 J	
CW-3A	Trichloroethene				0.016						0.11	
CW-3A	Vinyl chloride				0.01 U						0.01 U	
CW-3B	Iron				18					0.1 U		
CW-3B	Manganese				0.137					0.0122		
CW-3B	Sodium				24.3					21		
CW-3B	cis-1,2-Dichloroethene				0.03					0.029		
CW-3B	Trichloroethene				0.055					0.056		
CW-3B	Vinyl chloride				0.008 J					0.007 J		
CW-4A	Iron				0.164					0.821		
CW-4A	Manganese				1.7					1.97		
CW-4A	Sodium				20.6					21.1		
CW-4A	cis-1,2-Dichloroethene				0.016					0.016		
CW-4A	Trichloroethene				0.01 U					0.0022 J		
CW-4A	Vinyl chloride				0.004 J					0.0047 J		
CW-4B	Iron									0.1 U		
CW-4B	Manganese									1.23		
CW-4B	Sodium									23.7		
CW-4B	cis-1,2-Dichloroethene									0.0092 J		
CW-4B	Trichloroethene									0.0016 J		
CW-4B	Vinyl chloride									0.0018 J		
MW-3D	Iron	2.25								0.23		
MW-3D	Manganese	0.0393								0.05		
MW-3D	Sodium	14.3								12.5		
MW-3D	cis-1,2-Dichloroethene	0.57								0.85		
MW-3D	Trichloroethene	0.028								0.064		
MW-3D	Vinyl chloride	0.034								0.1		
MW-3S	Iron	49.1							3.06			
MW-3S	Manganese	1.31							0.0876			
MW-3S	Sodium	32.5							26.8			
MW-3S	cis-1,2-Dichloroethene	0.002 J							0.0061 J			
MW-3S	Trichloroethene	0.01 U							0.0019 J			
MW-3S	Vinyl chloride	0.01 U							0.01 U			
MW-4D	Iron						0.657		0.489			
MW-4D	Manganese						1.68		1.1			
MW-4D	Sodium						9.89		9.8			
MW-4D	cis-1,2-Dichloroethene						2.1		1.4			
MW-4D	Trichloroethene						0.13		0.08			
MW-4D	Vinyl chloride						0.84		0.55			
MW-5D	Iron					0.418			0.365			
MW-5D	Manganese					1.17			1.28			
MW-5D	Sodium					7			6.5			
MW-5D	cis-1,2-Dichloroethene					2			1.2			
MW-5D	Trichloroethene					0.13			0.11			
MW-5D	Vinyl chloride					0.65			0.36			

Please see page 18 for notes.

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Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/15/2000	3/16/2000	3/21/2000	9/19/2000	9/20/2000	9/21/2000	4/23/2001	4/24/2001	4/25/2001	4/26/2001	4/30/2001
MW-5S	Iron					0.206		0.212				
MW-5S	Manganese					0.229		0.227				
MW-5S	Sodium					8.83		7.88				
MW-5S	cis-1,2-Dichloroethene					1.6		1.1				
MW-5S	Trichloroethene					0.18		0.14				
MW-5S	Vinyl chloride					0.63		0.4				
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene											
MW-11S	Vinyl chloride											
MW-17D	Iron		18.3								3.7	
MW-17D	Manganese		1.27								0.0466	
MW-17D	Sodium		28.4								32.2	
MW-17D	cis-1,2-Dichloroethene		0.01 U								0.01 U	
MW-17D	Trichloroethene		0.01 U								0.01 U	
MW-17D	Vinyl chloride		0.01 U								0.01 U	
MW-17S	Iron		4.29								0.11	
MW-17S	Manganese		1.01								0.642	
MW-17S	Sodium		43.4								44.8	
MW-17S	cis-1,2-Dichloroethene		0.011								0.019	
MW-17S	Trichloroethene		0.002 J								0.004 J	
MW-17S	Vinyl chloride		0.01 U								0.01 U	
MW-18D	Iron			292								12.8
MW-18D	Manganese			4.8								0.952
MW-18D	Sodium			27.5								22
MW-18D	cis-1,2-Dichloroethene			0.01 U								0.01 U
MW-18D	Trichloroethene			0.01 U								0.01 U
MW-18D	Vinyl chloride			0.01 U								0.01 U
MW-18S	Iron			181			1.29					12.7
MW-18S	Manganese			4.78			0.301					0.32
MW-18S	Sodium			22.9			15.6					13.6
MW-18S	cis-1,2-Dichloroethene			0.026			0.082					0.056
MW-18S	Trichloroethene			0.014			0.057					0.041
MW-18S	Vinyl chloride			0.01 U			0.01 U					0.01 U

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/10/2001	9/11/2001	9/12/2001	4/9/2002	4/10/2002	4/11/2002	4/12/2002	9/24/2002	9/25/2002	9/26/2002	3/28/2003
CW-3A	Iron		0.1 U			0.1 U				0.445		
CW-3A	Manganese		0.01 U			0.01 U				0.114		
CW-3A	Sodium		51.1			29.1				44.1		
CW-3A	cis-1,2-Dichloroethene		0.0096 J			0.017				0.018		
CW-3A	Trichloroethene		0.095			0.19				0.16		
CW-3A	Vinyl chloride		0.01 U			0.005 U				0.005 U		
CW-3B	Iron		0.357		0.869				1.02			
CW-3B	Manganese		0.01 U		0.0102				0.0176			
CW-3B	Sodium		20		20.9				23.8			
CW-3B	cis-1,2-Dichloroethene		0.028		0.041				0.031			
CW-3B	Trichloroethene		0.058		0.077				0.068			
CW-3B	Vinyl chloride		0.0068 J		0.0071				0.005 U			
CW-4A	Iron	0.142			0.122				15.3			
CW-4A	Manganese	1.75			0.735				9.92			
CW-4A	Sodium	18.7			20.2				25.4			
CW-4A	cis-1,2-Dichloroethene	0.014			0.011				0.015			
CW-4A	Trichloroethene	0.0018 J			0.005 U				0.005 U			
CW-4A	Vinyl chloride	0.0044 J			0.005 U				0.005 U			
CW-4B	Iron				0.1 U							
CW-4B	Manganese				1.12							
CW-4B	Sodium				22.4							
CW-4B	cis-1,2-Dichloroethene				0.0078							
CW-4B	Trichloroethene				0.005 U							
CW-4B	Vinyl chloride				0.005 U							
MW-3D	Iron						0.178					
MW-3D	Manganese						0.0486					
MW-3D	Sodium						14.2					
MW-3D	cis-1,2-Dichloroethene						0.12					
MW-3D	Trichloroethene						0.014					
MW-3D	Vinyl chloride						0.017					
MW-3S	Iron					0.487						
MW-3S	Manganese					0.0159						
MW-3S	Sodium					28.1						
MW-3S	cis-1,2-Dichloroethene					0.005 U						
MW-3S	Trichloroethene					0.0071						
MW-3S	Vinyl chloride					0.005 U						
MW-4D	Iron			0.33			0.558				0.169	0.314
MW-4D	Manganese			1.52			1.15				1.11	0.934
MW-4D	Sodium			9.83			9.76				10.2	10.5
MW-4D	cis-1,2-Dichloroethene			2.3			1.5				0.85	1.1
MW-4D	Trichloroethene			0.097 J			0.077				0.063	0.071
MW-4D	Vinyl chloride			0.64			0.49				0.26	0.38
MW-5D	Iron			0.411			0.631			0.478		
MW-5D	Manganese			1.23			1.28			0.726		
MW-5D	Sodium			5.56			6.29			6.6		
MW-5D	cis-1,2-Dichloroethene			1.5			1.8			0.99		
MW-5D	Trichloroethene			0.074 J			0.14			0.005 U		
MW-5D	Vinyl chloride			0.5			0.51			0.2		

Please see page 18 for notes.

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Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/10/2001	9/11/2001	9/12/2001	4/9/2002	4/10/2002	4/11/2002	4/12/2002	9/24/2002	9/25/2002	9/26/2002	3/28/2003
MW-5S	Iron			0.136			0.351				0.606	3.02
MW-5S	Manganese			0.22			0.203				0.114	0.213
MW-5S	Sodium			7.73			7.84				16.6	9.63
MW-5S	cis-1,2-Dichloroethene			1.1			1				0.48	0.76
MW-5S	Trichloroethene			0.14			0.14				0.005 U	0.11
MW-5S	Vinyl chloride			0.46			0.3				0.095	0.22
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene											
MW-11S	Vinyl chloride											
MW-17D	Iron							16.4				
MW-17D	Manganese							0.166				
MW-17D	Sodium							33.6				
MW-17D	cis-1,2-Dichloroethene							0.005 U				
MW-17D	Trichloroethene							0.005 U				
MW-17D	Vinyl chloride							0.005 U				
MW-17S	Iron							0.313				
MW-17S	Manganese							0.292				
MW-17S	Sodium							47.1				
MW-17S	cis-1,2-Dichloroethene							0.083				
MW-17S	Trichloroethene							0.014				
MW-17S	Vinyl chloride							0.005 U				
MW-18D	Iron							20.9				
MW-18D	Manganese							0.967				
MW-18D	Sodium							23.4				
MW-18D	cis-1,2-Dichloroethene							0.005 U				
MW-18D	Trichloroethene							0.005 U				
MW-18D	Vinyl chloride							0.005 U				
MW-18S	Iron		0.264					3.62		0.394		
MW-18S	Manganese		0.0218					0.0434		0.058		
MW-18S	Sodium		12.6					13.4		15.3		
MW-18S	cis-1,2-Dichloroethene		0.07					0.087		0.07		
MW-18S	Trichloroethene		0.062					0.068		0.053		
MW-18S	Vinyl chloride		0.01 U					0.005 U		0.005 U		

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/31/2003	4/1/2003	4/2/2003	4/3/2003	12/16/2003	12/17/2003	12/18/2003	6/8/2004	6/9/2004	6/11/2004
CW-3A	Iron		1.06			0.1 U			0.1 U		
CW-3A	Manganese		0.0392			0.0124			0.0102		
CW-3A	Sodium		45.6			50.1			44.1		
CW-3A	cis-1,2-Dichloroethene		0.016			0.058			0.061		
CW-3A	Trichloroethene		0.14			0.38			0.39		
CW-3A	Vinyl chloride		0.005 U			0.005 U			0.005 U		
CW-3B	Iron	0.447				0.1 U			0.1 U		
CW-3B	Manganese	0.015				0.0192			0.0275		
CW-3B	Sodium	23.5				21			22.4		
CW-3B	cis-1,2-Dichloroethene	0.035				0.052			0.051		
CW-3B	Trichloroethene	0.085				0.11			0.12		
CW-3B	Vinyl chloride	0.0051				0.006			0.0055		
CW-4A	Iron		2.37			0.1 U			0.322		
CW-4A	Manganese		2.41			1.03			1		
CW-4A	Sodium		21.9			19.6			20.9		
CW-4A	cis-1,2-Dichloroethene		0.012			0.012			0.013		
CW-4A	Trichloroethene		0.005 U			0.005 U			0.005 U		
CW-4A	Vinyl chloride		0.005 U			0.005 U			0.005 U		
CW-4B	Iron		17.8						0.1 U		
CW-4B	Manganese		3.64						0.971		
CW-4B	Sodium		20.9						22.3		
CW-4B	cis-1,2-Dichloroethene		0.0091						0.005 U		
CW-4B	Trichloroethene		0.005 U						0.005 U		
CW-4B	Vinyl chloride		0.005 U						0.005 U		
MW-3D	Iron			0.1 U						0.1 U	
MW-3D	Manganese			0.0244						0.014	
MW-3D	Sodium			14.9						17.9	
MW-3D	cis-1,2-Dichloroethene			0.22						0.033	
MW-3D	Trichloroethene			0.038						0.0057	
MW-3D	Vinyl chloride			0.017						0.005 U	
MW-3S	Iron			125						1.07	
MW-3S	Manganese			3.26						0.0333	
MW-3S	Sodium			29.4						31.3	
MW-3S	cis-1,2-Dichloroethene			0.005 U						0.005 U	
MW-3S	Trichloroethene			0.005 U						0.005 U	
MW-3S	Vinyl chloride			0.005 U						0.005 U	
MW-4D	Iron							0.36		0.543	
MW-4D	Manganese							0.946		0.734	
MW-4D	Sodium							10.8		9.1	
MW-4D	cis-1,2-Dichloroethene							0.73		0.62	
MW-4D	Trichloroethene							0.051		0.05	
MW-4D	Vinyl chloride							0.23		0.21	
MW-5D	Iron			0.391				0.391		0.471	
MW-5D	Manganese			1.16				1.39		1.44	
MW-5D	Sodium			6.56				7.52		6.49	
MW-5D	cis-1,2-Dichloroethene			1.2				1.6		2	
MW-5D	Trichloroethene			0.1				0.11		0.13	
MW-5D	Vinyl chloride			0.36				0.39		0.41	

Please see page 18 for notes.

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Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/31/2003	4/1/2003	4/2/2003	4/3/2003	12/16/2003	12/17/2003	12/18/2003	6/8/2004	6/9/2004	6/11/2004
MW-5S	Iron							5.87		2.03	
MW-5S	Manganese							0.864		0.506	
MW-5S	Sodium							9.44		7.75	
MW-5S	cis-1,2-Dichloroethene							0.54		0.61	
MW-5S	Trichloroethene							0.073		0.072	
MW-5S	Vinyl chloride							0.14		0.19	
MW-11S	Iron										
MW-11S	Manganese										
MW-11S	Sodium										
MW-11S	cis-1,2-Dichloroethene										
MW-11S	Trichloroethene										
MW-11S	Vinyl chloride										
MW-17D	Iron				13						9.01
MW-17D	Manganese				1.17						1.23
MW-17D	Sodium				28.9						29.5
MW-17D	cis-1,2-Dichloroethene				0.005 U						0.005 U
MW-17D	Trichloroethene				0.005 U						0.005 U
MW-17D	Vinyl chloride				0.005 U						0.005 U
MW-17S	Iron				0.284						0.229
MW-17S	Manganese				0.464						0.459
MW-17S	Sodium				49.5						58.9
MW-17S	cis-1,2-Dichloroethene				0.036						0.13
MW-17S	Trichloroethene				0.0064						0.02
MW-17S	Vinyl chloride				0.005 U						0.0086
MW-18D	Iron										7.12
MW-18D	Manganese										0.628
MW-18D	Sodium										22.6
MW-18D	cis-1,2-Dichloroethene										0.005 U
MW-18D	Trichloroethene										0.005 U
MW-18D	Vinyl chloride										0.005 U
MW-18S	Iron				37.3		4.18				1.87
MW-18S	Manganese				0.888		0.536				0.0704
MW-18S	Sodium				16.1		14.9				16.1
MW-18S	cis-1,2-Dichloroethene				0.071		0.12				0.063
MW-18S	Trichloroethene				0.063		0.037				0.054
MW-18S	Vinyl chloride				0.005 U		0.005 U				0.005 U

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	12/7/2004	12/8/2004	12/9/2004	6/20/2005	6/21/2005	6/22/2005	6/23/2005	12/6/2005	12/7/2005	12/8/2005	3/27/2006
CW-3A	Iron	0.1 U			0.117				0.1 U			
CW-3A	Manganese	0.0649			0.0174				0.0313			
CW-3A	Sodium	56			54.3				63.6			
CW-3A	cis-1,2-Dichloroethene	0.038			0.13				0.041			
CW-3A	Trichloroethene	0.36			1				0.25 D			
CW-3A	Vinyl chloride	0.005 U			0.013				0.005 U			
CW-3B	Iron	0.132			1.62				0.1 U			
CW-3B	Manganese	0.0399			0.0513				0.0473			
CW-3B	Sodium	20.8			22.8				23.6			
CW-3B	cis-1,2-Dichloroethene	0.049			0.074				0.081			
CW-3B	Trichloroethene	0.14			0.2				0.18 D			
CW-3B	Vinyl chloride	0.005 U			0.01 U				0.005 U			
CW-4A	Iron	0.1 U			0.188							
CW-4A	Manganese	0.914			1.04							
CW-4A	Sodium	18.6			19.6							
CW-4A	cis-1,2-Dichloroethene	0.0079			0.0086							
CW-4A	Trichloroethene	0.005 U			0.005 U							
CW-4A	Vinyl chloride	0.005 U			0.005 U							
CW-4B	Iron				0.1 U					0.633		
CW-4B	Manganese				1.04					1.65		
CW-4B	Sodium				21.5					20.7		
CW-4B	cis-1,2-Dichloroethene				0.005 U					0.0057		
CW-4B	Trichloroethene				0.005 U					0.005 U		
CW-4B	Vinyl chloride				0.005 U					0.005 U		
MW-3D	Iron					0.236						
MW-3D	Manganese					0.0217						
MW-3D	Sodium					15.6						
MW-3D	cis-1,2-Dichloroethene					0.037						
MW-3D	Trichloroethene					0.0076						
MW-3D	Vinyl chloride					0.005						
MW-3S	Iron					0.621						
MW-3S	Manganese					0.0189						
MW-3S	Sodium					30.1						
MW-3S	cis-1,2-Dichloroethene					0.005 U						
MW-3S	Trichloroethene					0.005 U						
MW-3S	Vinyl chloride					0.005 U						
MW-4D	Iron			0.482		0.382				0.733		
MW-4D	Manganese			0.632		0.604				0.909		
MW-4D	Sodium			8.52		9.01				8.18		
MW-4D	cis-1,2-Dichloroethene			0.39		0.44				0.74 D		
MW-4D	Trichloroethene			0.039		0.032				0.032		
MW-4D	Vinyl chloride			0.23		0.16				0.54 D		
MW-5D	Iron			0.443			0.527			0.482		
MW-5D	Manganese			1.43			1.5			1.38		
MW-5D	Sodium			6.66			7.24			7.23		
MW-5D	cis-1,2-Dichloroethene			1.3			1.6			1.2		
MW-5D	Trichloroethene			0.096			0.081			0.078		
MW-5D	Vinyl chloride			0.29			0.31			0.34		

Please see page 18 for notes.

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Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	12/7/2004	12/8/2004	12/9/2004	6/20/2005	6/21/2005	6/22/2005	6/23/2005	12/6/2005	12/7/2005	12/8/2005	3/27/2006
MW-5S	Iron			1.65			0.866			2.52		
MW-5S	Manganese			0.489			0.156			0.446		
MW-5S	Sodium			4.14			8.04			7.8		
MW-5S	cis-1,2-Dichloroethene			0.17			0.6			0.51 D		
MW-5S	Trichloroethene			0.025			0.1			0.08		
MW-5S	Vinyl chloride			0.038			0.16			0.15		
MW-11S	Iron		0.1 U									
MW-11S	Manganese		1.52									
MW-11S	Sodium		18.6									
MW-11S	cis-1,2-Dichloroethene		0.52					0.53			0.63	
MW-11S	Trichloroethene		2.9					3.2			3.1	
MW-11S	Vinyl chloride		0.005 U					0.05 U			0.1 U	
MW-17D	Iron						11.9					5.08
MW-17D	Manganese						1.12					0.313
MW-17D	Sodium						30.2					32.4
MW-17D	cis-1,2-Dichloroethene						0.005 U					0.005 U
MW-17D	Trichloroethene						0.005 U					0.005 U
MW-17D	Vinyl chloride						0.005 U					0.005 U
MW-17S	Iron						0.24					0.151
MW-17S	Manganese						1.3					0.146
MW-17S	Sodium						52.7					51.8
MW-17S	cis-1,2-Dichloroethene						0.06					0.086
MW-17S	Trichloroethene						0.011					0.014
MW-17S	Vinyl chloride						0.005 U					0.005 U
MW-18D	Iron											
MW-18D	Manganese											
MW-18D	Sodium											
MW-18D	cis-1,2-Dichloroethene											
MW-18D	Trichloroethene											
MW-18D	Vinyl chloride											
MW-18S	Iron			0.254				0.419	0.634			
MW-18S	Manganese			0.043				0.0453	0.0596			
MW-18S	Sodium			16.1				16.2	19			
MW-18S	cis-1,2-Dichloroethene			0.09				0.1	0.089			
MW-18S	Trichloroethene			0.077				0.097	0.066			
MW-18S	Vinyl chloride			0.005 U				0.005 U	0.005 U			

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/28/2006	3/29/2006	3/30/2006	3/31/2006	9/27/2006	9/28/2006	3/27/2007	3/28/2007	3/29/2007	3/30/2007	9/25/2007
CW-3A	Iron			0.1 U			0.168				0.1 U	0.661
CW-3A	Manganese			0.01 U			0.0325				0.0505	1.38
CW-3A	Sodium			47			58.4				50.2	47.2
CW-3A	cis-1,2-Dichloroethene			0.024			0.059				0.04	0.058
CW-3A	Trichloroethene			0.18			0.29 D				0.22 D	0.36
CW-3A	Vinyl chloride			0.005 U			0.005 U				0.005 U	0.01 U
CW-3B	Iron			0.1 U			0.516				4.71	0.156
CW-3B	Manganese			0.0441			0.0446				0.0688	0.0438
CW-3B	Sodium			21.6			22				22.4	20.9
CW-3B	cis-1,2-Dichloroethene			0.072			0.072				0.086	0.087
CW-3B	Trichloroethene			0.19			0.19				0.24	0.26
CW-3B	Vinyl chloride			0.01 U			0.01 U				0.01 U	0.01 U
CW-4A	Iron	0.936								2.76		
CW-4A	Manganese	0.495								0.478		
CW-4A	Sodium	17.1								17		
CW-4A	cis-1,2-Dichloroethene	0.0069								0.0052		
CW-4A	Trichloroethene	0.005 U								0.005 U		
CW-4A	Vinyl chloride	0.005 U								0.005 U		
CW-4B	Iron	0.1 U				0.228				0.322		0.1 U
CW-4B	Manganese	0.946				0.953				0.795		1.31
CW-4B	Sodium	18.5				19.6				19.3		20.5
CW-4B	cis-1,2-Dichloroethene	0.005 U				0.005 U				0.005 U		0.005 U
CW-4B	Trichloroethene	0.005 U				0.005 U				0.005 U		0.005 U
CW-4B	Vinyl chloride	0.005 U				0.005 U				0.005 U		0.005 U
MW-3D	Iron			0.1 U						0.1 U		
MW-3D	Manganese			0.01 U						0.0131		
MW-3D	Sodium			16.9						15.8		
MW-3D	cis-1,2-Dichloroethene			0.024						0.027		
MW-3D	Trichloroethene			0.005 U						0.0054		
MW-3D	Vinyl chloride			0.005 U						0.005 U		
MW-3S	Iron			0.585						0.177		
MW-3S	Manganese			0.0106						0.01 U		
MW-3S	Sodium			26.9						27.4		
MW-3S	cis-1,2-Dichloroethene			0.005 U						0.005 U		
MW-3S	Trichloroethene			0.005 U						0.005 U		
MW-3S	Vinyl chloride			0.005 U						0.005 U		
MW-4D	Iron		0.657			0.686		1.2				0.806
MW-4D	Manganese		0.583			0.799		0.406				0.859
MW-4D	Sodium		7.12			8.24		8.28				7.98
MW-4D	cis-1,2-Dichloroethene		0.3			0.73 D		0.42 D				3 E
MW-4D	Trichloroethene		0.02			0.03		0.02				0.05 U
MW-4D	Vinyl chloride		0.17			0.41 D		0.2				0.68
MW-5D	Iron		0.545				0.595	0.71				0.531
MW-5D	Manganese		1.41				1.37	1.51				1.41
MW-5D	Sodium		6.9				6.97	7.03				7.68
MW-5D	cis-1,2-Dichloroethene		1.5				1.4	1.8				1.4
MW-5D	Trichloroethene		0.087				0.075	0.081				0.066
MW-5D	Vinyl chloride		0.31				0.19	0.28				0.24

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/28/2006	3/29/2006	3/30/2006	3/31/2006	9/27/2006	9/28/2006	3/27/2007	3/28/2007	3/29/2007	3/30/2007	9/25/2007
MW-5S	Iron		3.67				1.28	8.01				0.794
MW-5S	Manganese		1.1				0.161	0.257				0.18
MW-5S	Sodium		5.13				7.94	7.11				7.92
MW-5S	cis-1,2-Dichloroethene		0.29				0.47 D	0.44				0.49
MW-5S	Trichloroethene		0.042				0.075	0.064				0.071
MW-5S	Vinyl chloride		0.059				0.089	0.08				0.09
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene				0.56	0.54					0.5	
MW-11S	Trichloroethene				3.1	3					2.9	
MW-11S	Vinyl chloride				0.1 U	0.1 U					0.1 U	
MW-17D	Iron								3.91			
MW-17D	Manganese								0.222			
MW-17D	Sodium								33.1			
MW-17D	cis-1,2-Dichloroethene								0.005 U			
MW-17D	Trichloroethene								0.005 U			
MW-17D	Vinyl chloride								0.005 U			
MW-17S	Iron								0.468			
MW-17S	Manganese								0.394			
MW-17S	Sodium								50.2			
MW-17S	cis-1,2-Dichloroethene								0.056			
MW-17S	Trichloroethene								0.0077			
MW-17S	Vinyl chloride								0.005 U			
MW-18D	Iron	5.08							4.15			
MW-18D	Manganese	0.583							0.349			
MW-18D	Sodium	24.6							23.1			
MW-18D	cis-1,2-Dichloroethene	0.005 U							0.005 U			
MW-18D	Trichloroethene	0.005 U							0.005 U			
MW-18D	Vinyl chloride	0.005 U							0.005 U			
MW-18S	Iron	1.35				0.622			2.51			0.753
MW-18S	Manganese	0.0359				0.0339			0.0621			0.0567
MW-18S	Sodium	16.6				17.6			17.3			31.6
MW-18S	cis-1,2-Dichloroethene	0.053				0.087			0.058			0.005 U
MW-18S	Trichloroethene	0.046				0.065			0.039			0.0052
MW-18S	Vinyl chloride	0.005 U				0.005 U			0.005 U			0.005 U

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/26/2007	3/24/2008	3/25/2008	3/26/2008	9/16/2008	9/17/2008	12/11/2008	4/27/2009	4/28/2009	4/29/2009
CW-3A	Iron			0.15			0.1 U				0.13
CW-3A	Manganese			0.018			0.12				0.08
CW-3A	Sodium			51.2			67.4				51.6
CW-3A	cis-1,2-Dichloroethene			0.03			0.018				0.02
CW-3A	Trichloroethene			0.16			0.1				0.13
CW-3A	Vinyl chloride			0.005 U			0.005 U				0.005 U
CW-3B	Iron			0.205			0.193				0.17
CW-3B	Manganese			0.0356			0.0386				0.044
CW-3B	Sodium			22.6			22				21.1
CW-3B	cis-1,2-Dichloroethene			0.078			0.078				0.083
CW-3B	Trichloroethene			0.22			0.27 D				0.18 D
CW-3B	Vinyl chloride			0.01 U			0.005 U				0.005 U
CW-4A	Iron			5.14							0.73
CW-4A	Manganese			0.49							0.262
CW-4A	Sodium			17.9							16.1
CW-4A	cis-1,2-Dichloroethene			0.005							0.005 U
CW-4A	Trichloroethene			0.005 U							0.005 U
CW-4A	Vinyl chloride			0.005 U							0.005 U
CW-4B	Iron			0.1 U		0.124					0.13
CW-4B	Manganese			0.844		1.06					0.583
CW-4B	Sodium			18.8		17.7					17.5
CW-4B	cis-1,2-Dichloroethene			0.005 U		0.005 U					0.005 U
CW-4B	Trichloroethene			0.005 U		0.005 U					0.005 U
CW-4B	Vinyl chloride			0.005 U		0.005 U					0.005 U
MW-3D	Iron			0.1 U					0.1 U		
MW-3D	Manganese			0.0183					0.011		
MW-3D	Sodium			15.1					16.7		
MW-3D	cis-1,2-Dichloroethene			0.027					0.018		
MW-3D	Trichloroethene			0.0085					0.0057		
MW-3D	Vinyl chloride			0.005 U					0.005 U		
MW-3S	Iron			0.196					0.34		
MW-3S	Manganese			0.01 U					0.01		
MW-3S	Sodium			30.4					37.4		
MW-3S	cis-1,2-Dichloroethene			0.005 U					0.005 U		
MW-3S	Trichloroethene			0.005 U					0.005 U		
MW-3S	Vinyl chloride			0.005 U					0.005 U		
MW-4D	Iron		1.98			0.706				0.93	
MW-4D	Manganese		0.614			0.613				0.534	
MW-4D	Sodium		8.48			7.86				8.3	
MW-4D	cis-1,2-Dichloroethene		0.75			2.5 D		1.8		0.9 D	
MW-4D	Trichloroethene		0.025 U			0.025 U		0.05 U		0.025 U	
MW-4D	Vinyl chloride		0.31			0.83		0.5		0.35	
MW-5D	Iron				2.24		0.455			0.49	
MW-5D	Manganese				1.29		1.22			1.26	
MW-5D	Sodium				6.78		7.04			6.5	
MW-5D	cis-1,2-Dichloroethene				1.6 D		1.2			1.5	
MW-5D	Trichloroethene				0.091		0.069			0.099	
MW-5D	Vinyl chloride				0.24 D		0.2			0.18	

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/26/2007	3/24/2008	3/25/2008	3/26/2008	9/16/2008	9/17/2008	12/11/2008	4/27/2009	4/28/2009	4/29/2009
MW-5S	Iron				3.17		0.452		2.88		
MW-5S	Manganese				0.3		0.144		0.307		
MW-5S	Sodium				5.32		7.22		6.4		
MW-5S	cis-1,2-Dichloroethene				0.29		0.39		0.29		
MW-5S	Trichloroethene				0.045		0.041		0.042		
MW-5S	Vinyl chloride				0.056		0.081		0.043		
MW-11S	Iron										
MW-11S	Manganese										
MW-11S	Sodium										
MW-11S	cis-1,2-Dichloroethene	0.52	0.45				0.41				
MW-11S	Trichloroethene	3.2	2.6				2.8				
MW-11S	Vinyl chloride	0.13 U	0.1 U				0.1 U				
MW-17D	Iron			13.4						6.21	
MW-17D	Manganese			1.18						0.997	
MW-17D	Sodium			29.6						29.4	
MW-17D	cis-1,2-Dichloroethene			0.005 U						0.005 U	
MW-17D	Trichloroethene			0.005 U						0.005 U	
MW-17D	Vinyl chloride			0.005 U						0.005 U	
MW-17S	Iron			2.85						0.64	
MW-17S	Manganese			0.0716						0.342	
MW-17S	Sodium			8.22						51.4	
MW-17S	cis-1,2-Dichloroethene			0.005 U						0.022	
MW-17S	Trichloroethene			0.005 U						0.005 U	
MW-17S	Vinyl chloride			0.005 U						0.005 U	
MW-18D	Iron				7.07					13	
MW-18D	Manganese				0.454					0.574	
MW-18D	Sodium				22.4					21.3	
MW-18D	cis-1,2-Dichloroethene				0.005 U					0.005 U	
MW-18D	Trichloroethene				0.005 U					0.005 U	
MW-18D	Vinyl chloride				0.005 U					0.005 U	
MW-18S	Iron				1.59	3.49				0.89	
MW-18S	Manganese				0.393	0.341				0.634	
MW-18S	Sodium				52.8	18.5				11.5	
MW-18S	cis-1,2-Dichloroethene				0.064	0.0069				0.005 U	
MW-18S	Trichloroethene				0.01	0.0072				0.005 U	
MW-18S	Vinyl chloride				0.005 U	0.005 U				0.005 U	

Please see page 18 for notes.

Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	4/30/2009	9/9/2009	9/10/2009	9/14/2009	3/24/2010	3/25/2010	9/13/2010	9/14/2010
CW-3A	Iron				0.13				0.1 U
CW-3A	Manganese				0.014				0.088
CW-3A	Sodium				55.6				51.2
CW-3A	cis-1,2-Dichloroethene				0.02				0.029
CW-3A	Trichloroethene				0.12				0.17
CW-3A	Vinyl chloride				0.005 U				0.005 U
CW-3B	Iron				0.15				0.1 U
CW-3B	Manganese				0.034				0.035
CW-3B	Sodium				20.9				20.2
CW-3B	cis-1,2-Dichloroethene				0.071				0.09
CW-3B	Trichloroethene				0.22				0.29 D
CW-3B	Vinyl chloride				0.01 U				0.005 U
CW-4A	Iron				0.32			0.53	
CW-4A	Manganese				0.735			0.731	
CW-4A	Sodium				16.9			16.3	
CW-4A	cis-1,2-Dichloroethene				0.0052			0.0051	
CW-4A	Trichloroethene				0.005 U			0.005 U	
CW-4A	Vinyl chloride				0.005 U			0.005 U	
CW-4B	Iron				0.2			0.1 U	
CW-4B	Manganese				0.592			0.573	
CW-4B	Sodium				16.8			15.8	
CW-4B	cis-1,2-Dichloroethene				0.005 U			0.005 U	
CW-4B	Trichloroethene				0.005 U			0.005 U	
CW-4B	Vinyl chloride				0.005 U			0.005 U	
MW-3D	Iron		0.1 U						0.1 U
MW-3D	Manganese		0.017						0.016
MW-3D	Sodium		14.8						13.8
MW-3D	cis-1,2-Dichloroethene		0.019						0.017
MW-3D	Trichloroethene		0.0051						0.005 U
MW-3D	Vinyl chloride		0.005 U						0.005 U
MW-3S	Iron		0.1 U						0.12
MW-3S	Manganese		0.01 U						0.01
MW-3S	Sodium		30.9						31.5
MW-3S	cis-1,2-Dichloroethene		0.005 U						0.005 U
MW-3S	Trichloroethene		0.005 U						0.005 U
MW-3S	Vinyl chloride		0.005 U						0.005 U
MW-4D	Iron		1.18						0.84
MW-4D	Manganese		1.12						0.54
MW-4D	Sodium		8.4						8.2
MW-4D	cis-1,2-Dichloroethene		0.67			0.56			0.61
MW-4D	Trichloroethene		0.025 U			0.025 U			0.025 U
MW-4D	Vinyl chloride		0.26			0.24			0.26
MW-5D	Iron		0.45					0.39	
MW-5D	Manganese		1.31					1.19	
MW-5D	Sodium		7.1					7	
MW-5D	cis-1,2-Dichloroethene		1.6			1.6		1.1	
MW-5D	Trichloroethene		0.11			0.099		0.071	
MW-5D	Vinyl chloride		0.18			0.18		0.13	

Please see page 18 for notes.

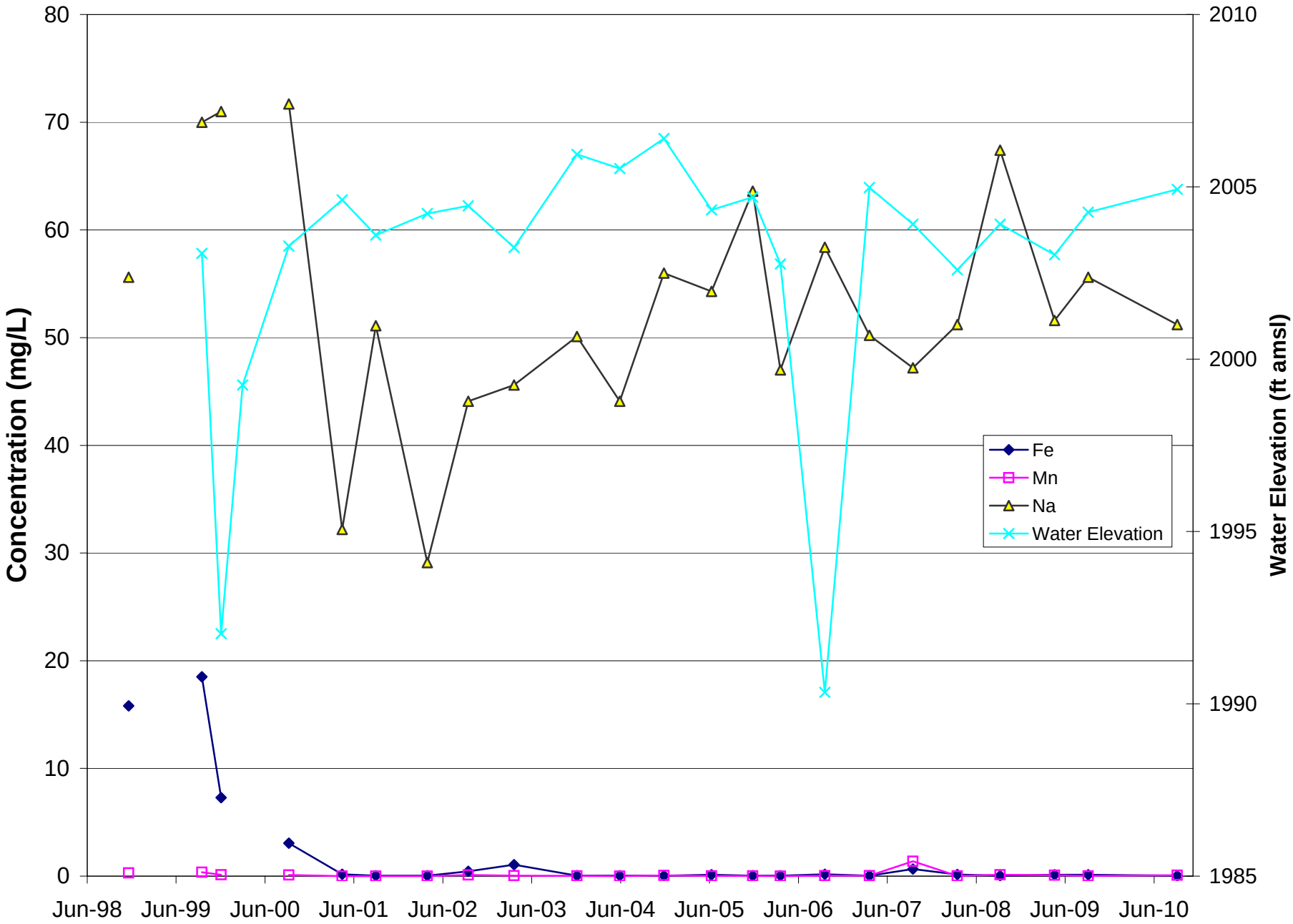
Table D-1

Analytical Results for Time Trend Graphs
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	4/30/2009	9/9/2009	9/10/2009	9/14/2009	3/24/2010	3/25/2010	9/13/2010	9/14/2010
MW-5S	Iron			0.25				0.55	
MW-5S	Manganese			0.127				0.125	
MW-5S	Sodium			6.9				6.6	
MW-5S	cis-1,2-Dichloroethene			0.35		0.077		0.35	
MW-5S	Trichloroethene			0.058		0.013		0.041	
MW-5S	Vinyl chloride			0.064		0.012		0.06	
MW-11S	Iron			0.38					0.18
MW-11S	Manganese			1.44					1.26
MW-11S	Sodium			19.8					18.6
MW-11S	cis-1,2-Dichloroethene	0.31		0.018			0.35 D		0.4 D
MW-11S	Trichloroethene	2.3 D		0.12			3 D		2.8 D
MW-11S	Vinyl chloride	0.022		0.005 U			0.027		0.029
MW-17D	Iron			8.33				3.82	
MW-17D	Manganese			0.469				0.305	
MW-17D	Sodium			31.5				32.2	
MW-17D	cis-1,2-Dichloroethene			0.005 U				0.005 U	
MW-17D	Trichloroethene			0.005 U				0.005 U	
MW-17D	Vinyl chloride			0.005 U				0.005 U	
MW-17S	Iron			0.23				0.26	
MW-17S	Manganese			0.134				0.233	
MW-17S	Sodium			56.5				51.8	
MW-17S	cis-1,2-Dichloroethene			0.065				0.058	
MW-17S	Trichloroethene			0.014				0.012	
MW-17S	Vinyl chloride			0.005 U				0.005 U	
MW-18D	Iron			7.05				13.4	
MW-18D	Manganese			0.565				0.326	
MW-18D	Sodium			21.5				20.9	
MW-18D	cis-1,2-Dichloroethene			0.005 U				0.005 U	
MW-18D	Trichloroethene			0.005 U				0.005 U	
MW-18D	Vinyl chloride			0.005 U				0.005 U	
MW-18S	Iron			1.58				0.77	
MW-18S	Manganese			0.073				0.026	
MW-18S	Sodium			14				11.3	
MW-18S	cis-1,2-Dichloroethene			0.005 U				0.0059	
MW-18S	Trichloroethene			0.0052				0.0057	
MW-18S	Vinyl chloride			0.005 U				0.005 U	

Notes:
U - Concentration not detected at specified detection limit
E - Concentration exceeded calibration range associated with analysis
B - Analyte detected in associated method blank
D - Diluted sample
J - Estimated value

CW-3A Metals

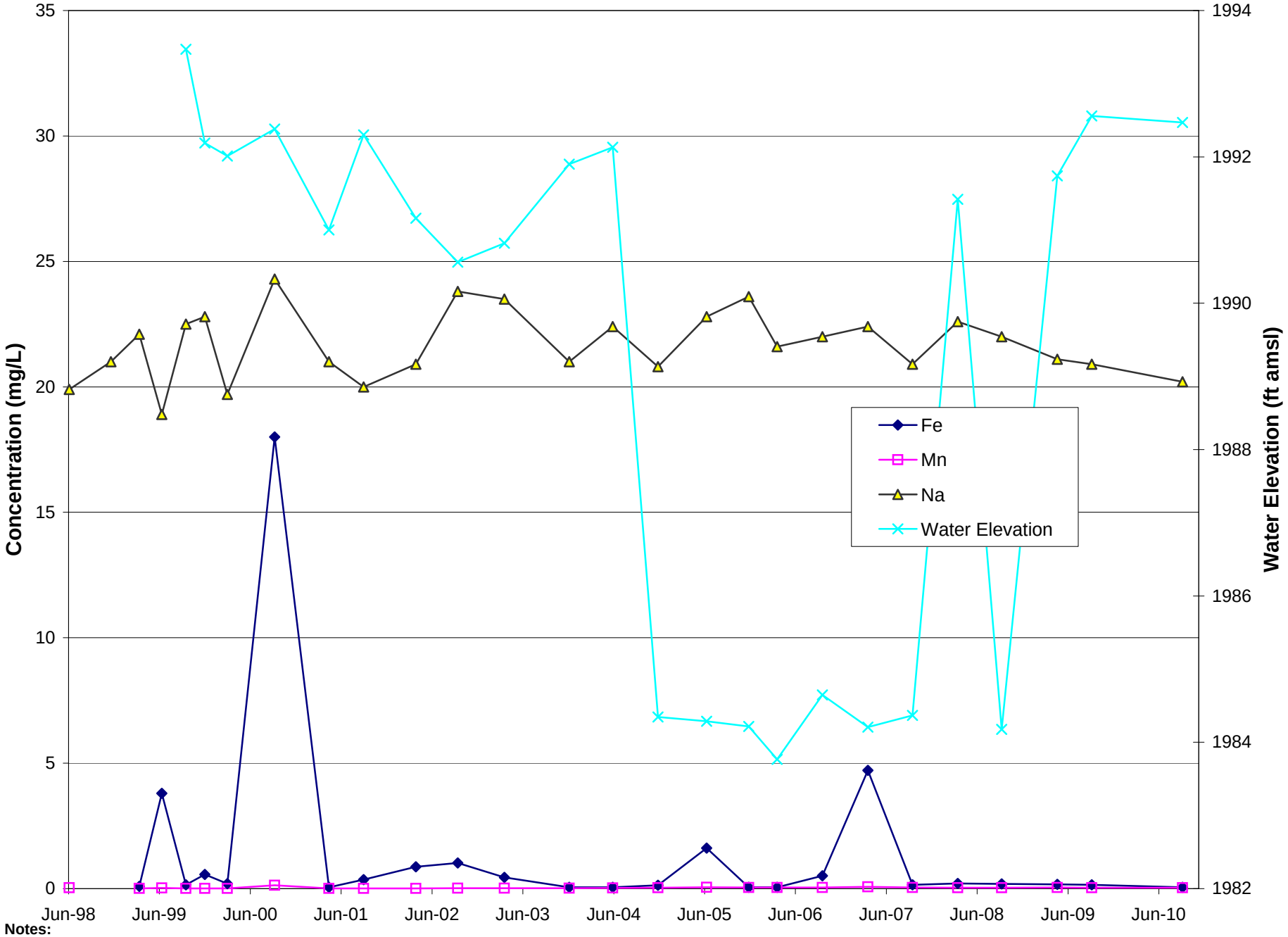


Notes:

1. The majority of results for Manganese and Iron are non detect.
2. 1/2 Detection limit used for non-detects.

Date

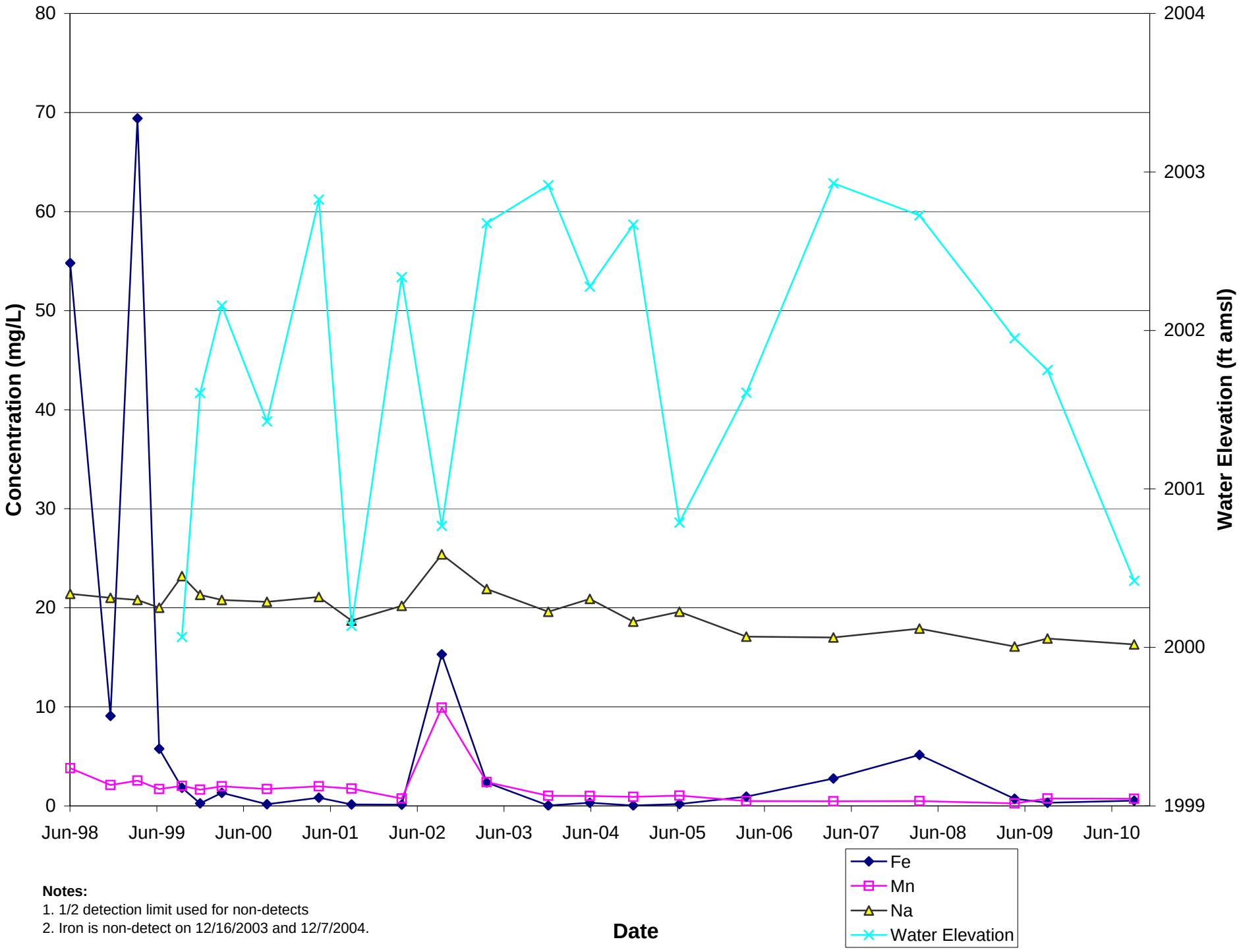
CW-3B Metals



Notes:

1. A majority of results for Manganese and Iron are non-detects.
2. 1/2 detection limit used for non-detects.

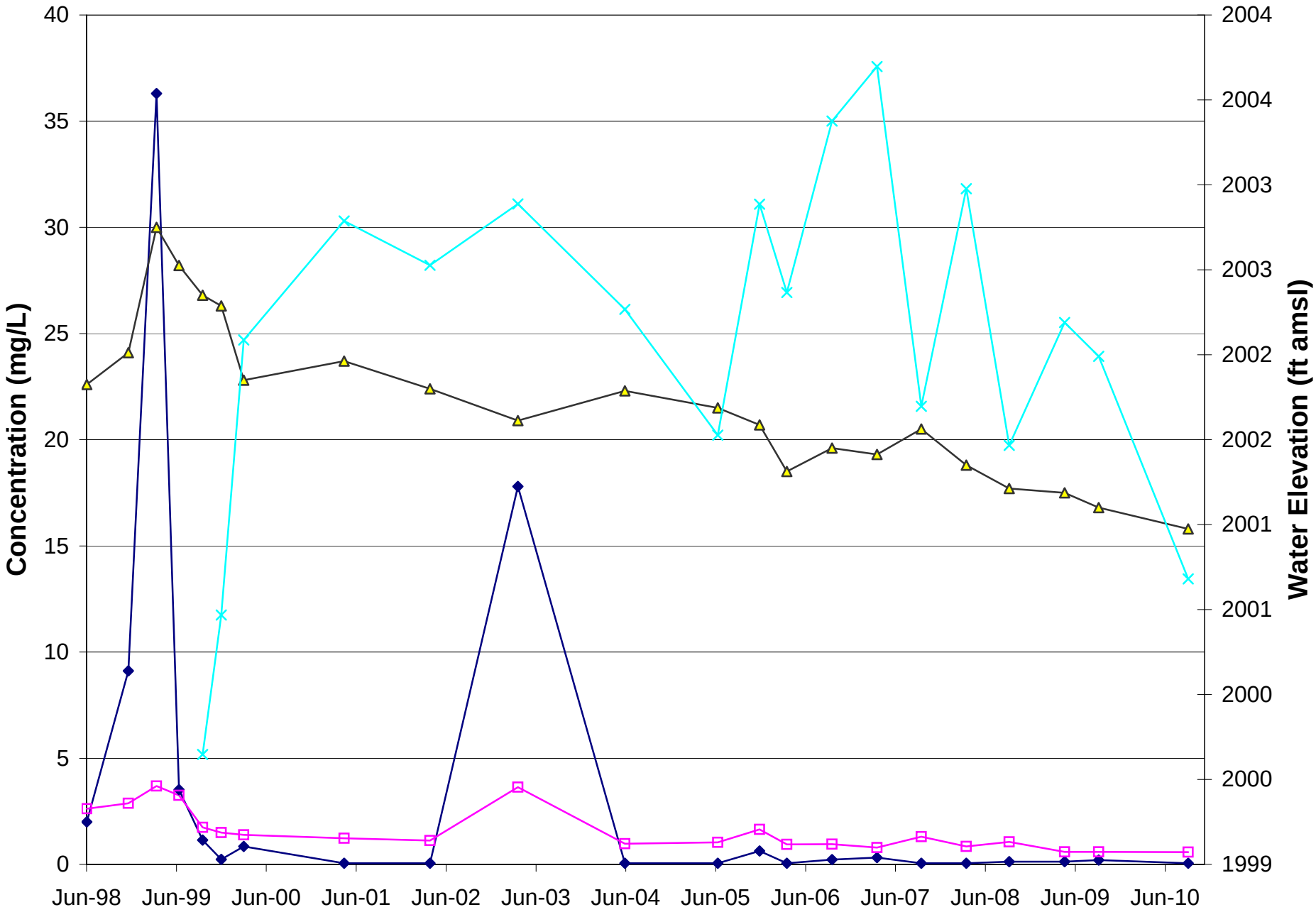
CW-4A Metals



Notes:

1. 1/2 detection limit used for non-detects
2. Iron is non-detect on 12/16/2003 and 12/7/2004.

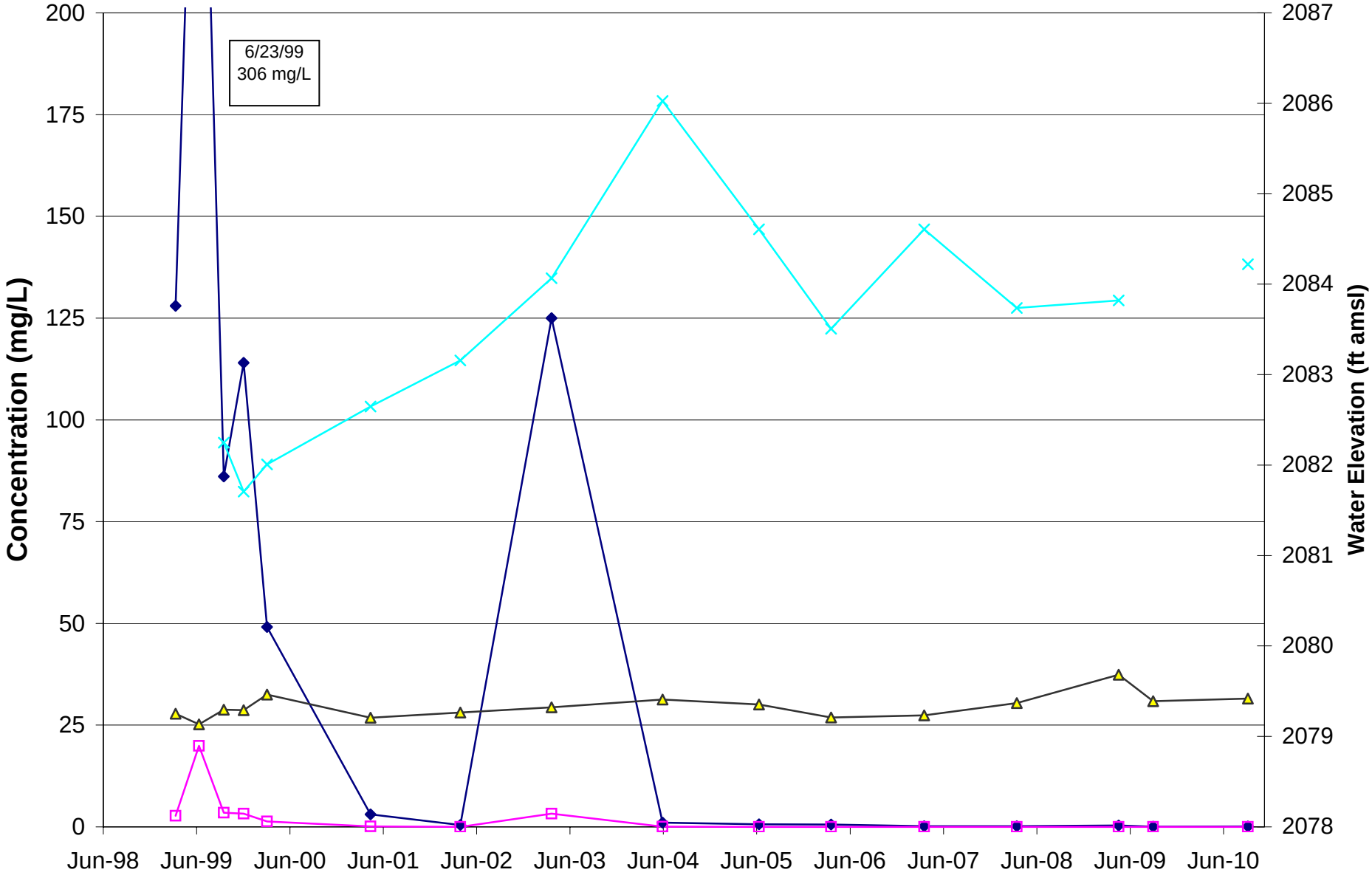
CW-4B Metals



Notes:

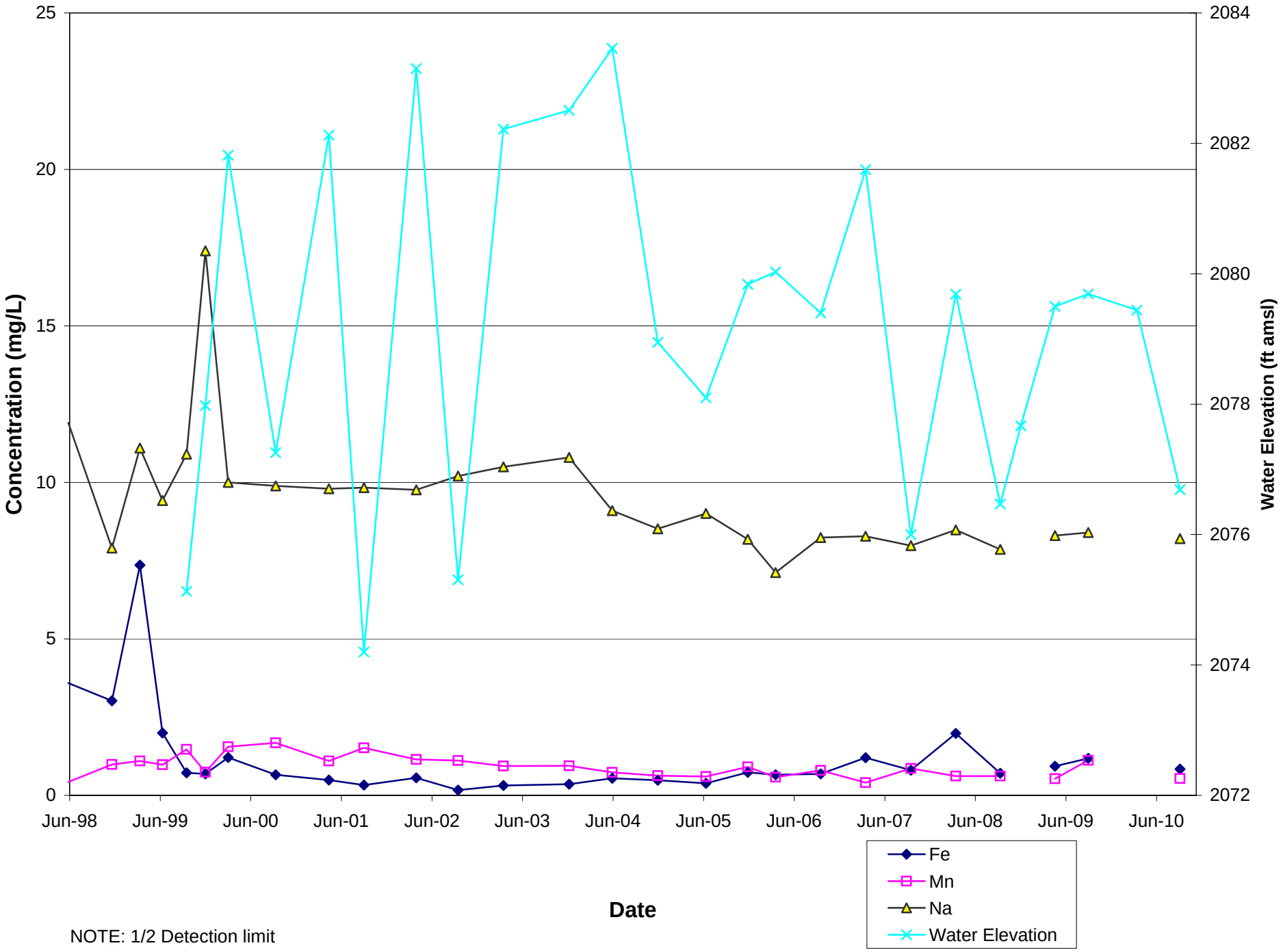
1. 1/2 detection limit used for non-detects
2. Iron is non-detect on 4/25/2001, 4/9/2002, 6/8/2004, 6/20/2005, 3/28/2006, 9/25/2007 and 3/25/2008

MW-3S Metals



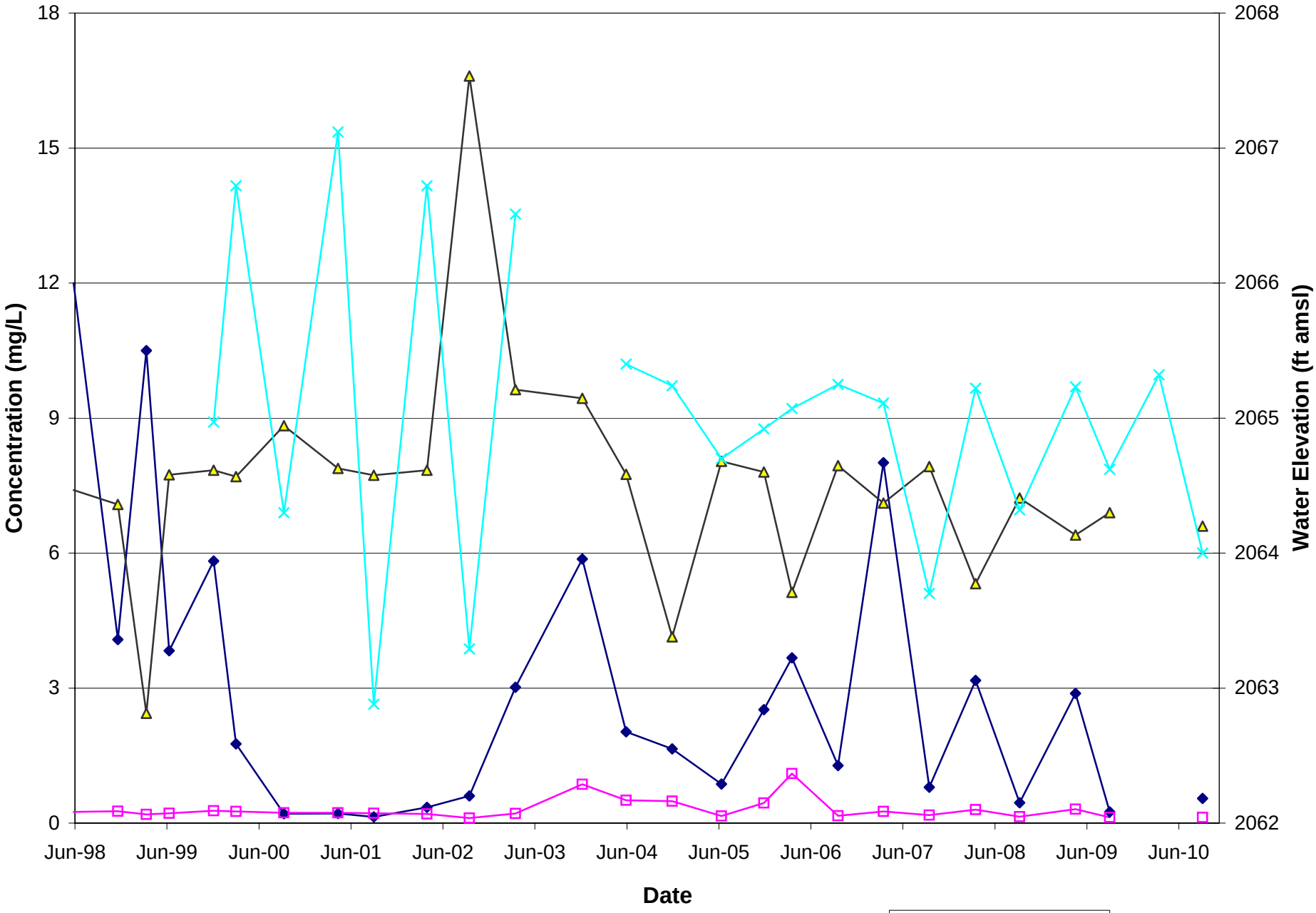
Notes:
1. 1/2 detection limit used for non-detects.
2. Manganese results were non-detect on 3/29/2007 and 3/25/2008.

MW-4D Metals



NOTE: 1/2 Detection limit
used for non-detects

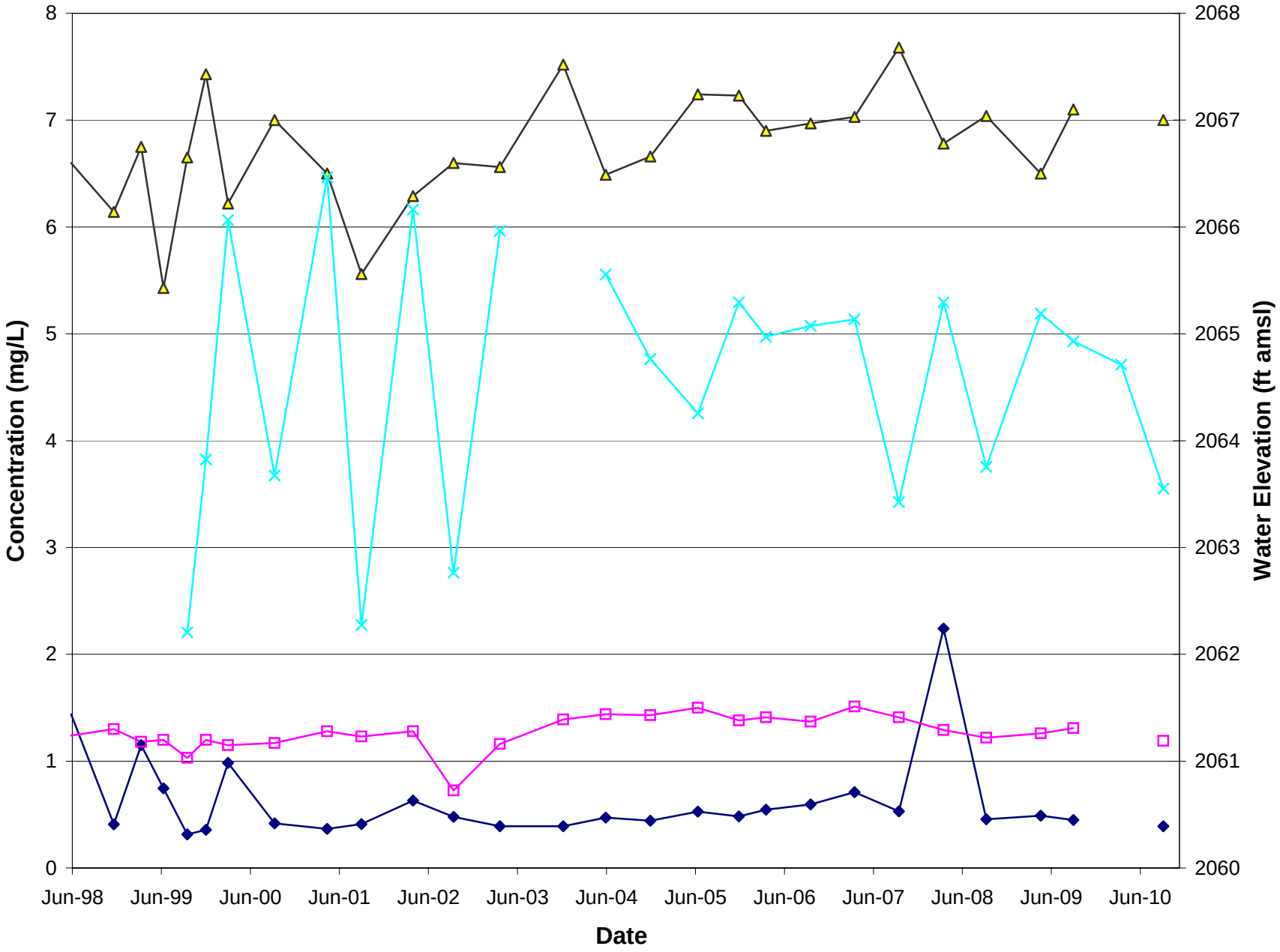
MW-5S Metals



Note:

1. 1/2 detection limit used for non-detects.
2. No water elevation available for December 2003.

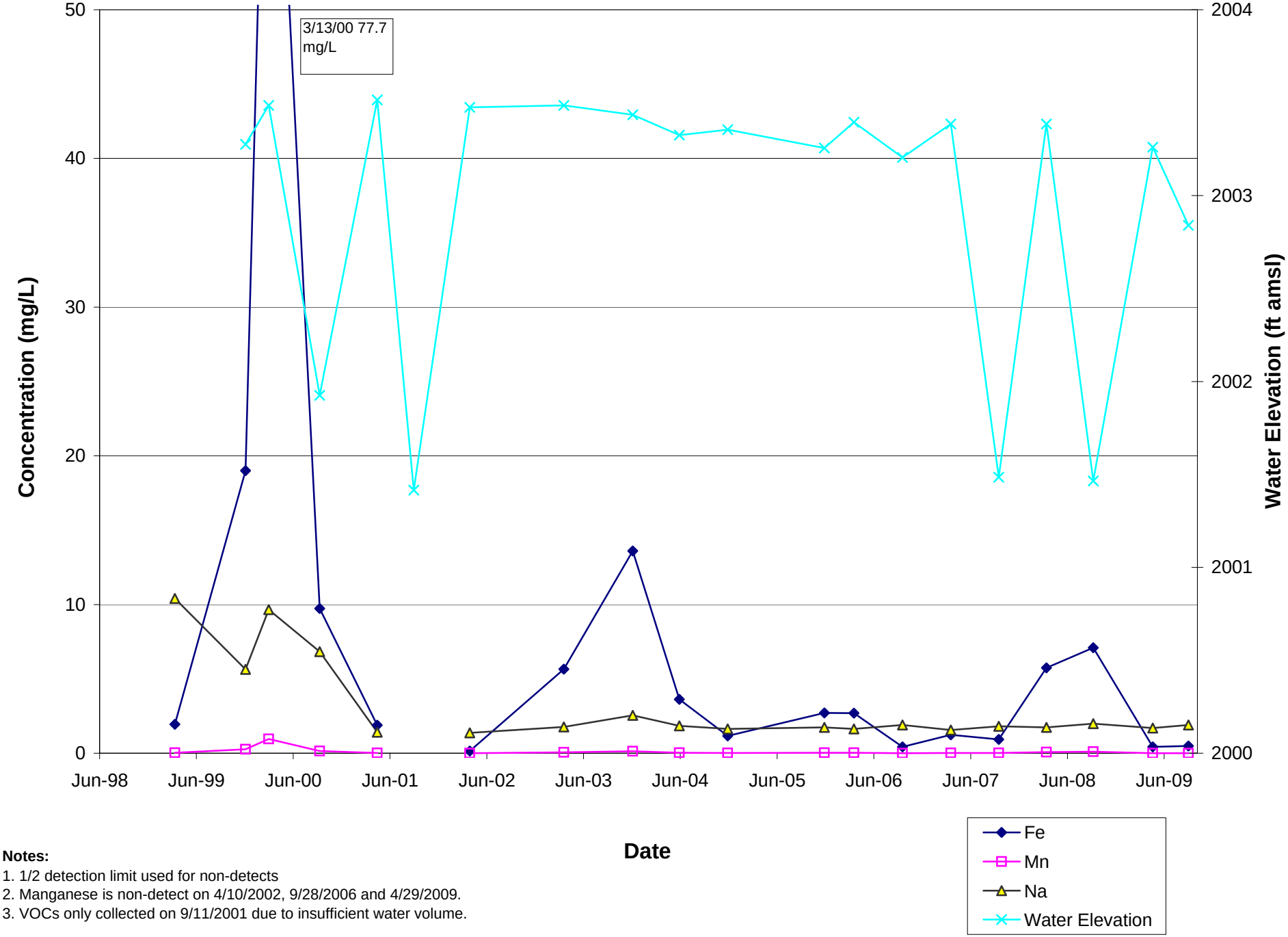
MW-5D Metals



Notes:

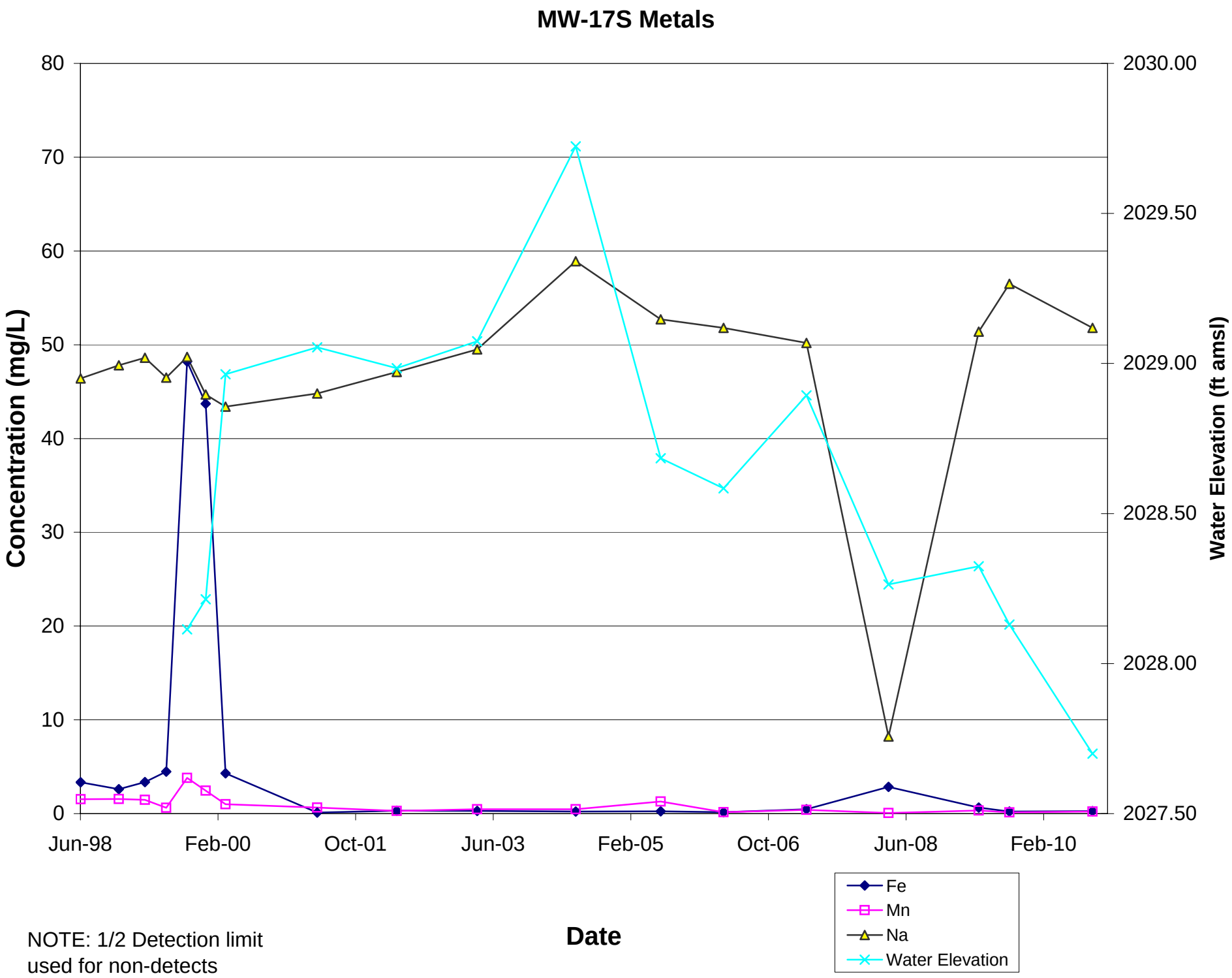
1. 1/2 Detection limit used for non-detects
2. No water elevation available December 2003.

MW-15S Metals



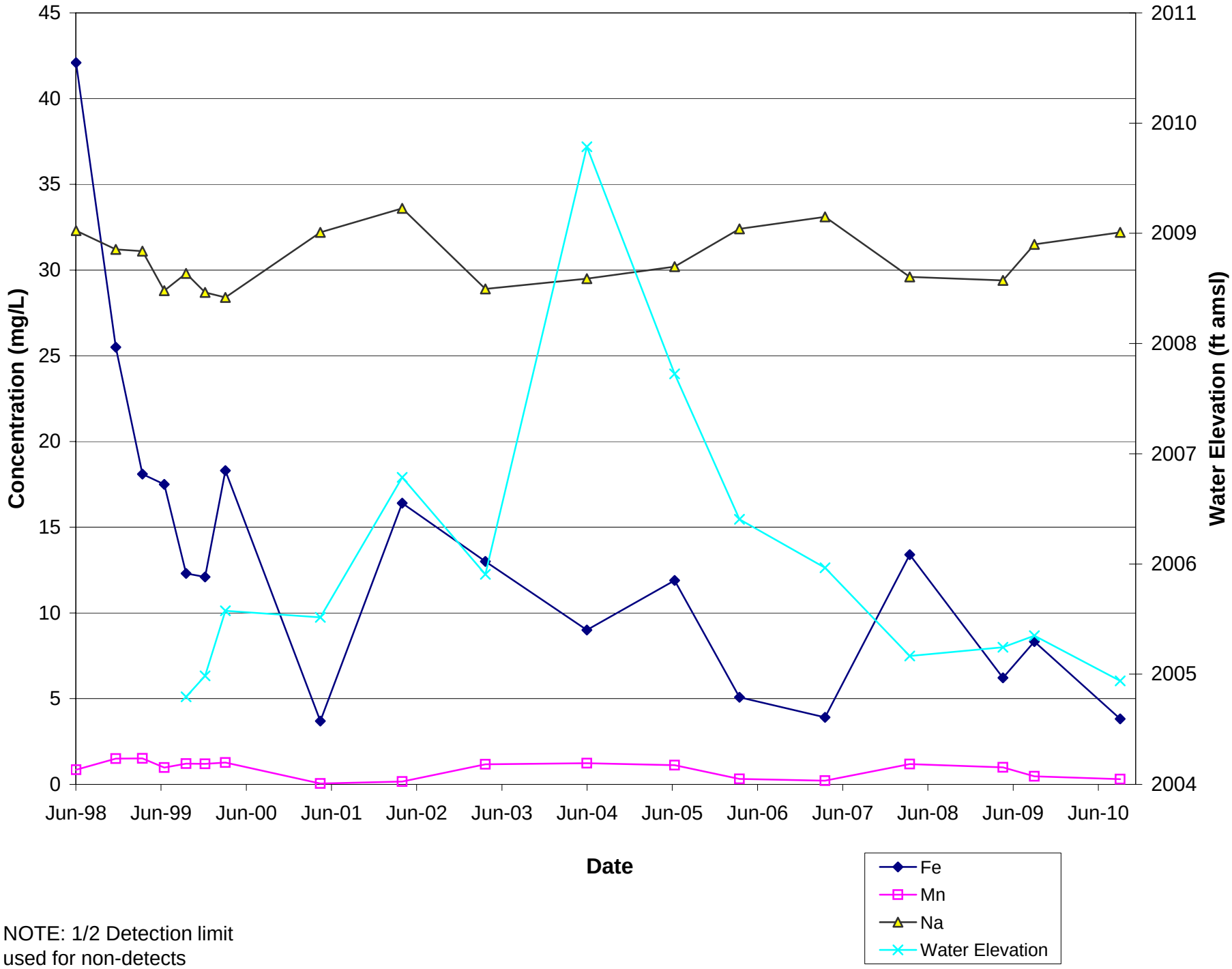
Notes:

1. 1/2 detection limit used for non-detects
2. Manganese is non-detect on 4/10/2002, 9/28/2006 and 4/29/2009.
3. VOCs only collected on 9/11/2001 due to insufficient water volume.



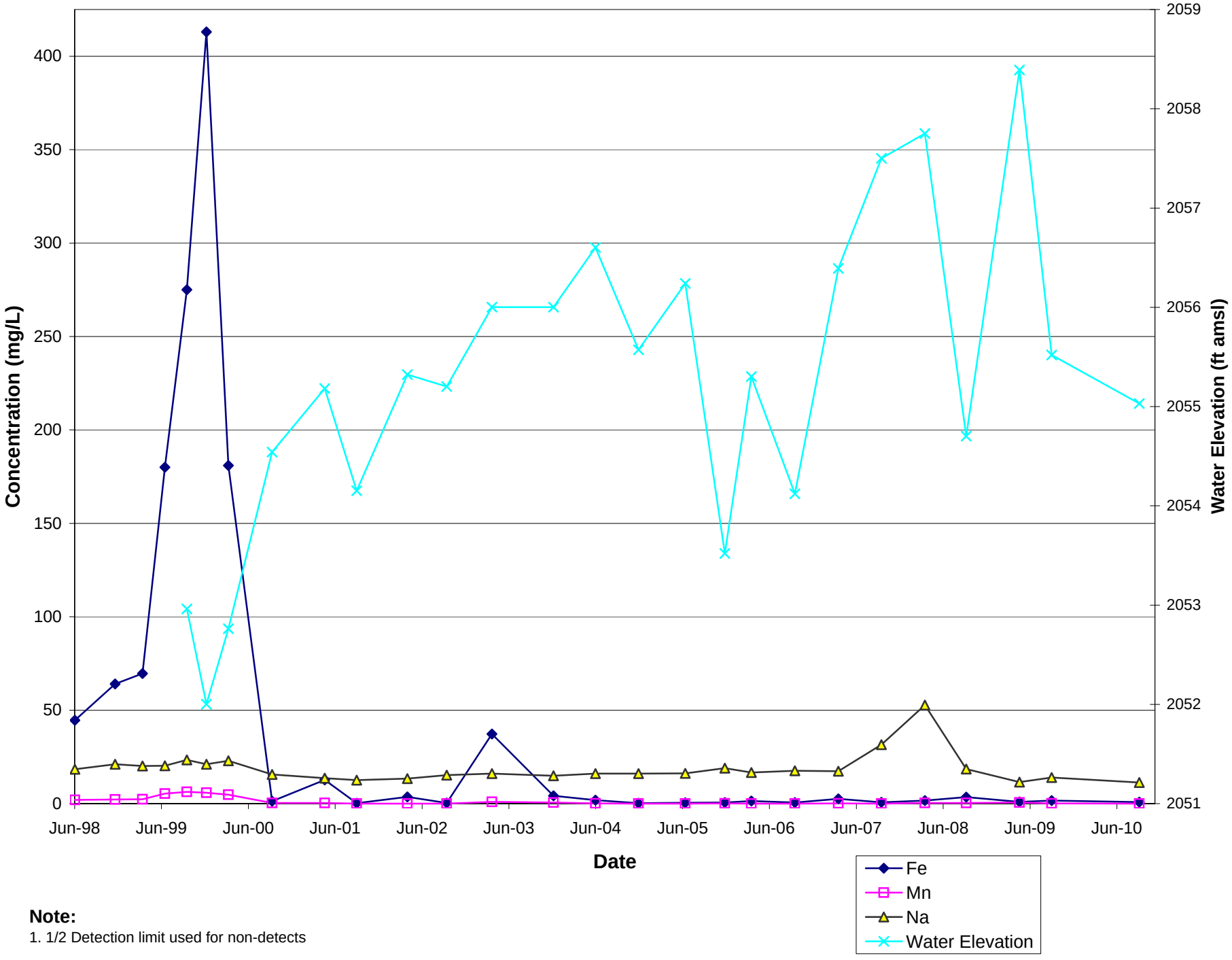
NOTE: 1/2 Detection limit
used for non-detects

MW-17D Metals



NOTE: 1/2 Detection limit
used for non-detects

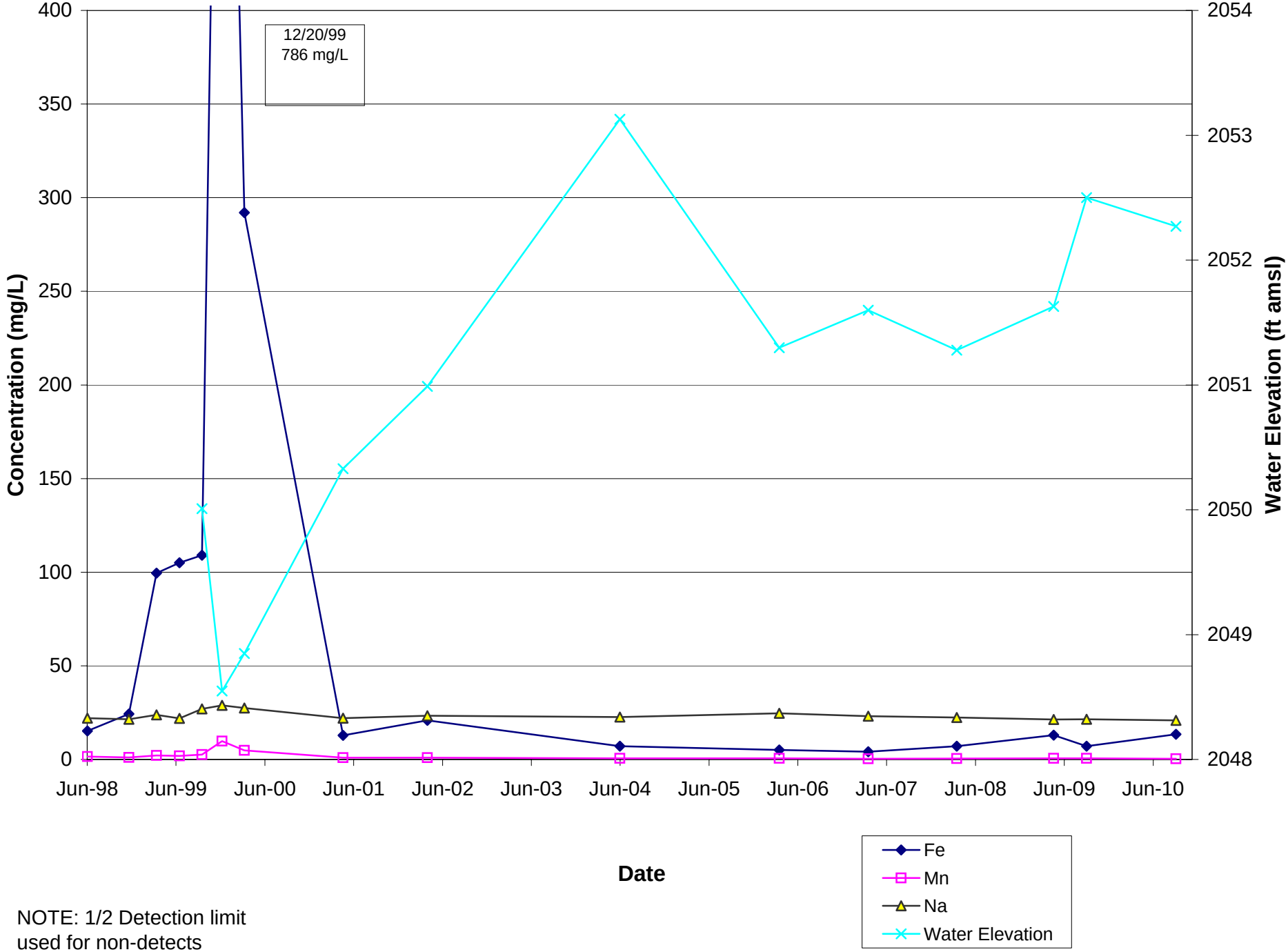
MW-18S Metals



Note:

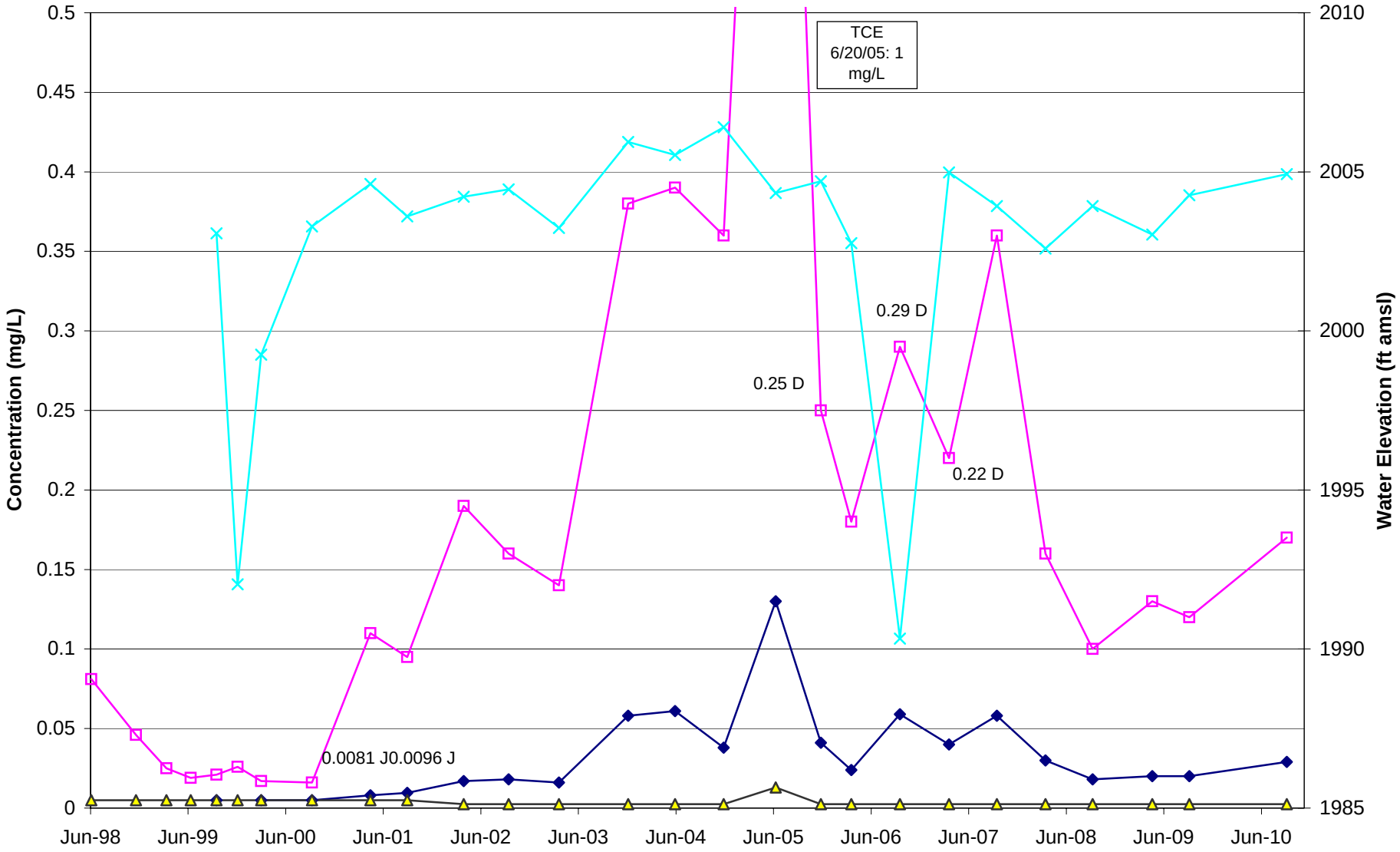
1. 1/2 Detection limit used for non-detects

MW-18D Metals



NOTE: 1/2 Detection limit
used for non-detects

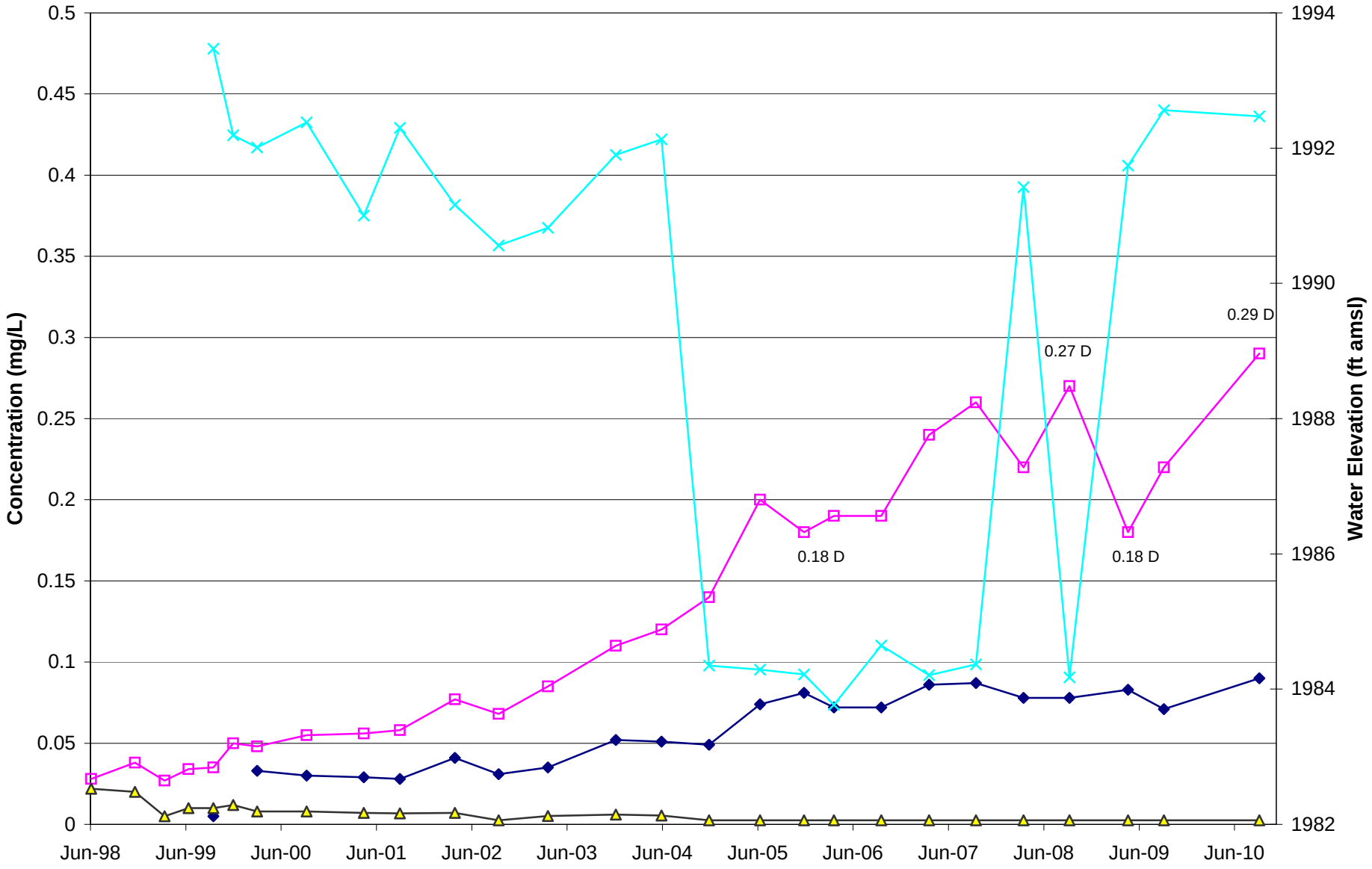
CW-3A VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. Vinyl choride results are non-detected except in June 2005.
4. Results for cis-1,2-Dichloroethene on 3/13/2000 and 9/19/2000 are non-detect and estimated on 4/26/2001 and 9/11/2001.
5. **D** - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

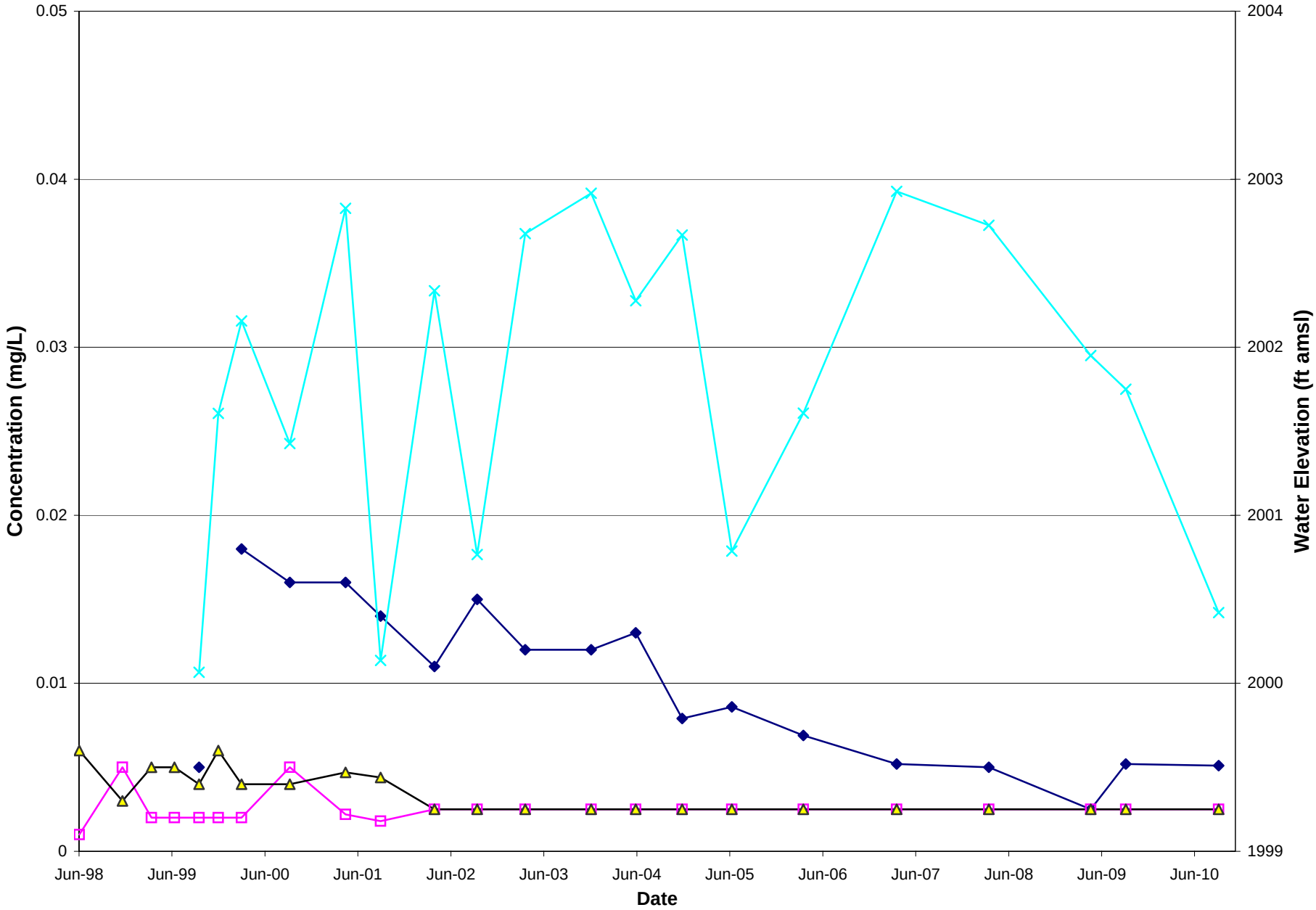
CW-3B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. The majority of Vinyl choride results are non-detect. Vinyl choride results on 3/13/2000, 9/19/2000,4/25/2001and on 9/11/2001 are estimated values.
4. Results for cDCE on 9/28/1999 are non-detect.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

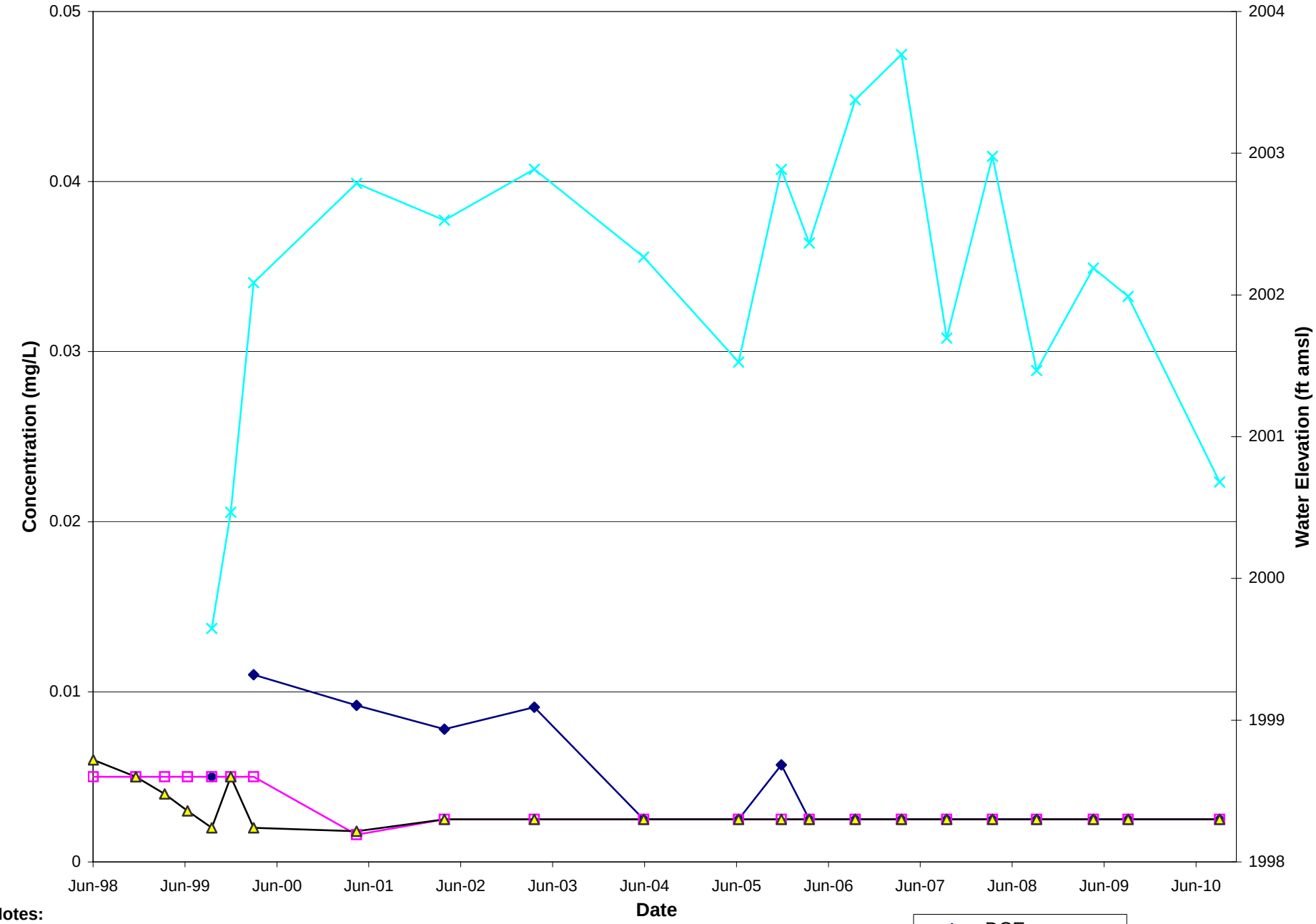
CW-4A VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl choride results are either non-detect or estimated values.
4. cDCE is non-detect on 9/28/1999 and 4/29/2009.

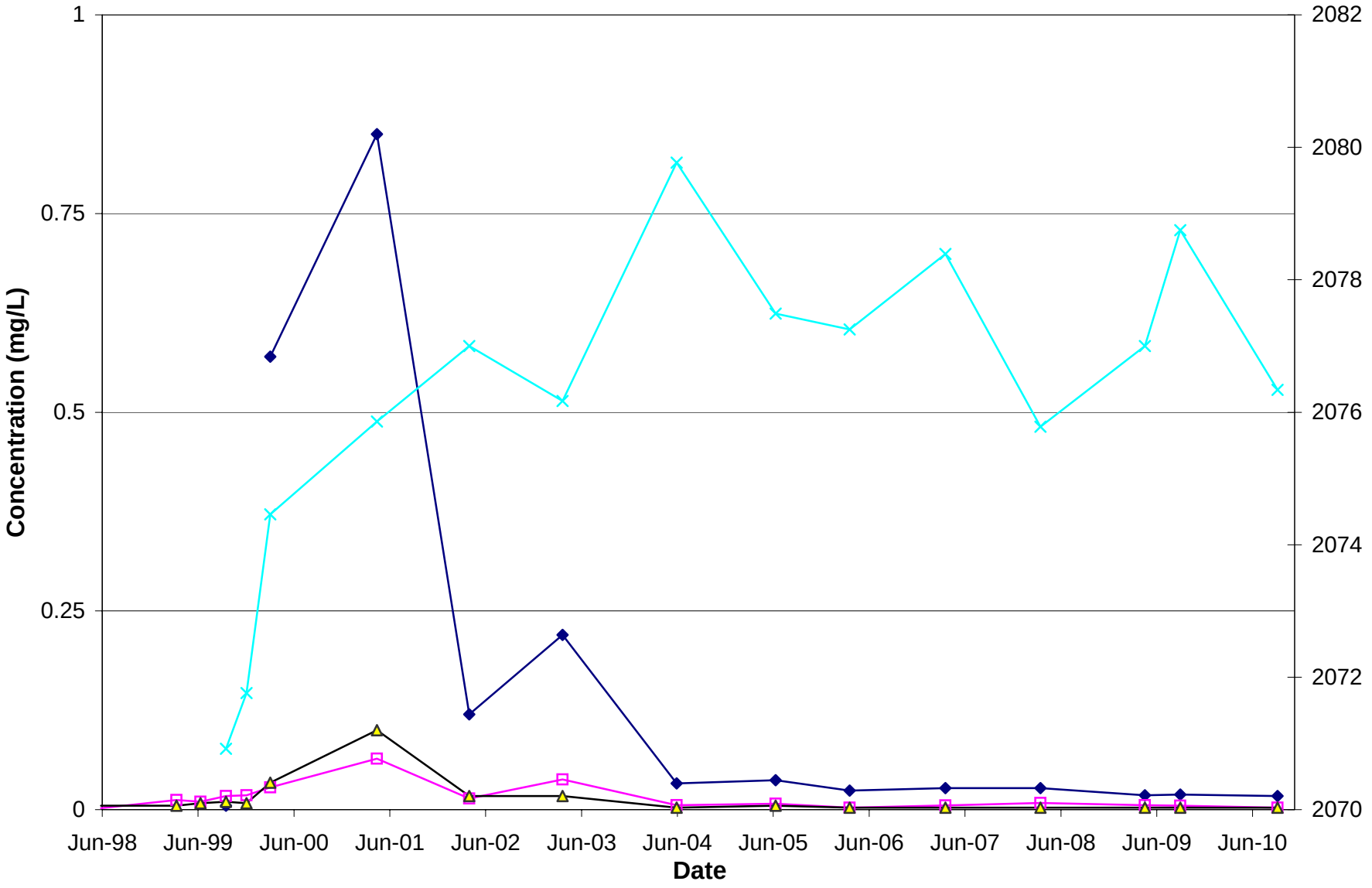
CW-4B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl choride results are either non-detect or estimated values.
4. A majority of cDCE results are non-detect.

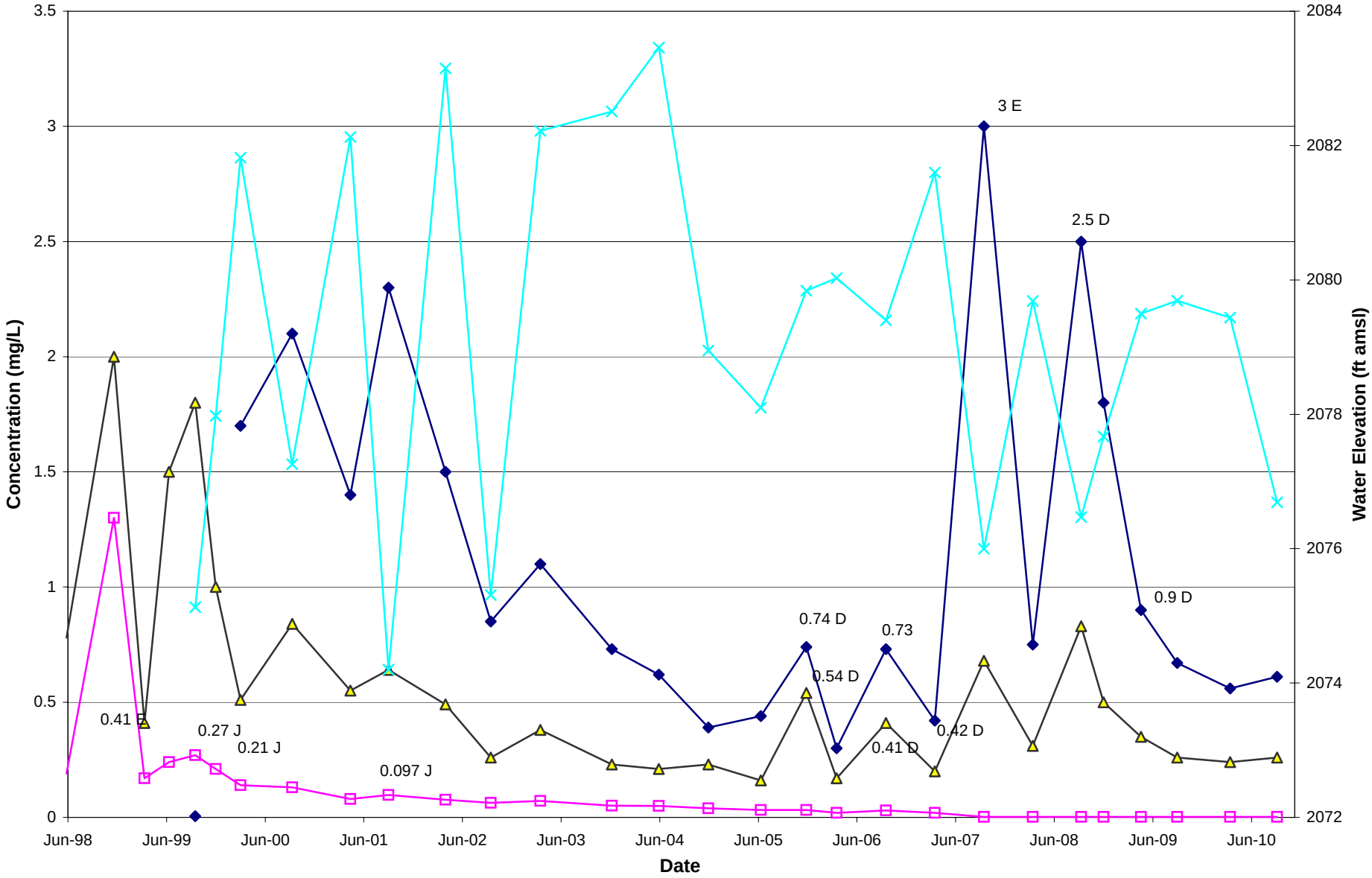
MW-3D VOCs



NOTE:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE on 6/9/1998 is estimated value and non-detect on 3/30/2006.
4. Vinyl chloride results on 6/9/1998, 3/24/1999, 6/9/2004, 3/30/2006, 3/29/2007, 3/25/2008 and 4/27/2009 are non-detect. Estimated results are shown on 6/23/1999 and 12/15/1999.
4. Results for cDCE on 9/28/1999 are non-detect.

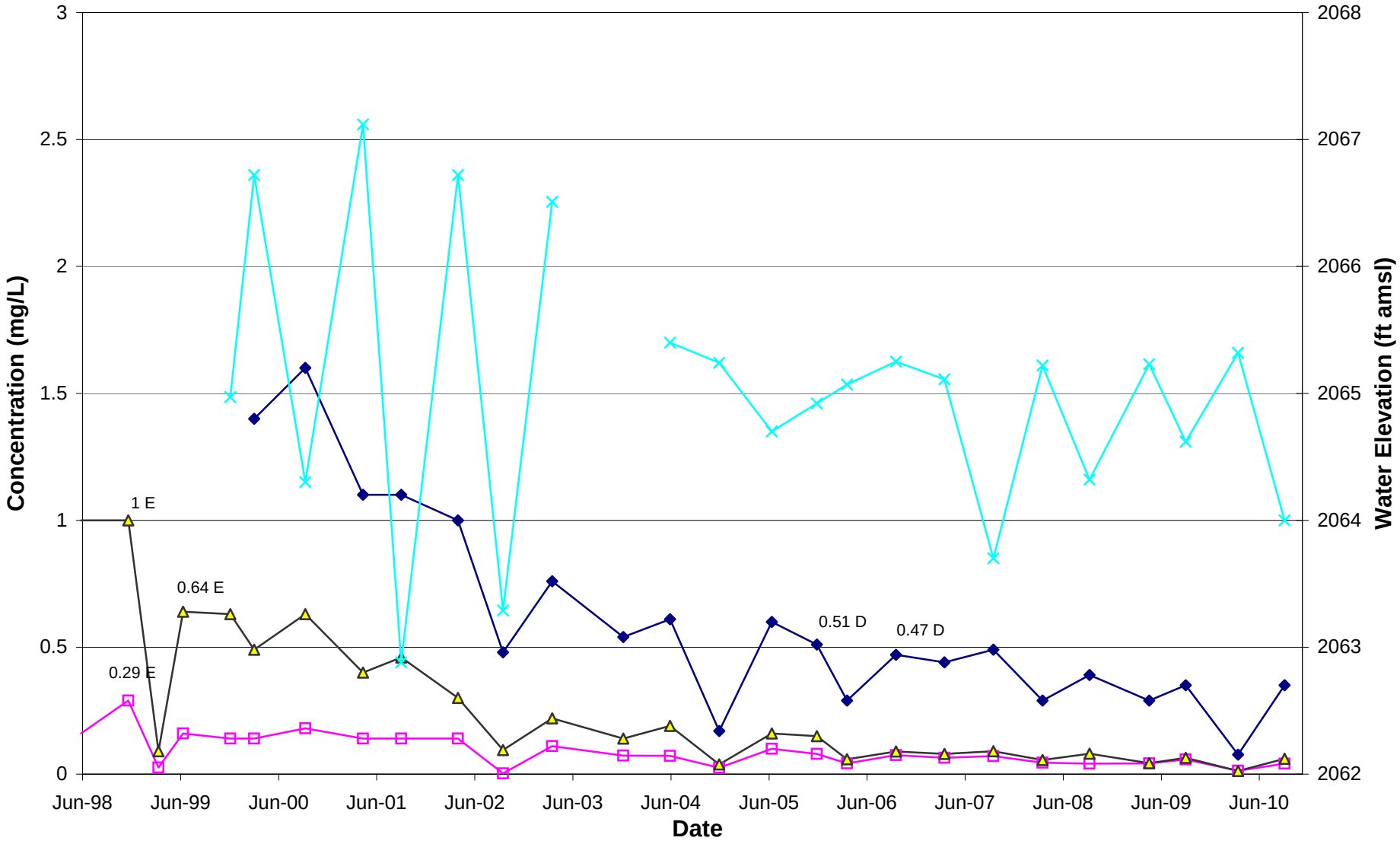
MW-4D VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. **E** - Results are greater than the calibration range of the instrument used for analysis
4. **J** - Estimated value.
5. **D** - This flag indicates a result from a diluted sample.
6. TCE is non-detect on 9/25/2007, 3/24/2008, 9/16/2008, 12/11/2008 and 4/28/2009.
7. Flagged data is labeled on the graph as appropriate.

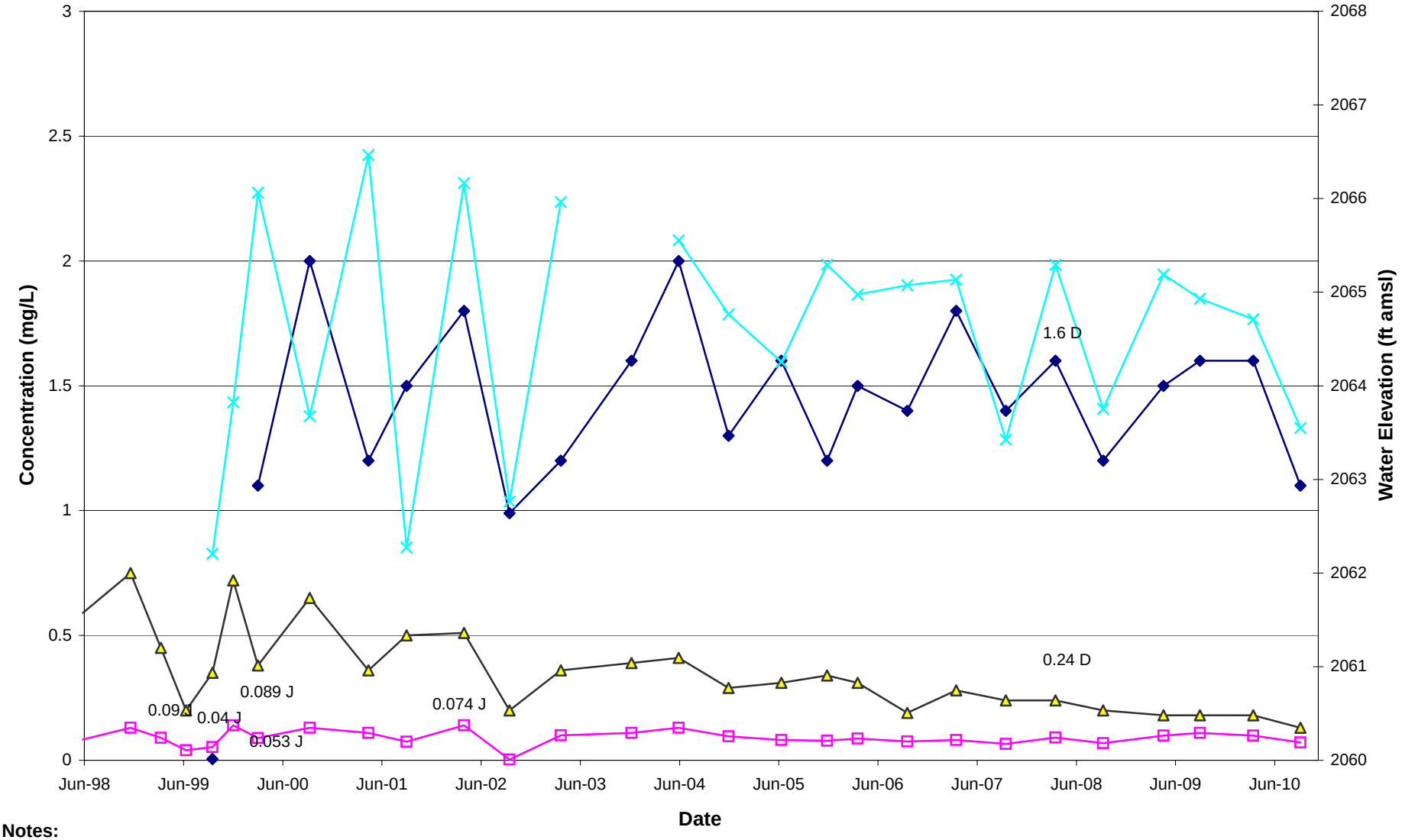
MW-5S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE result on 9/26/2002 is non-detect.
4. **E** - Results are greater than the calibration range of the instrument used for analysis.
5. **D** - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.
7. No water elevation available for December 2003.

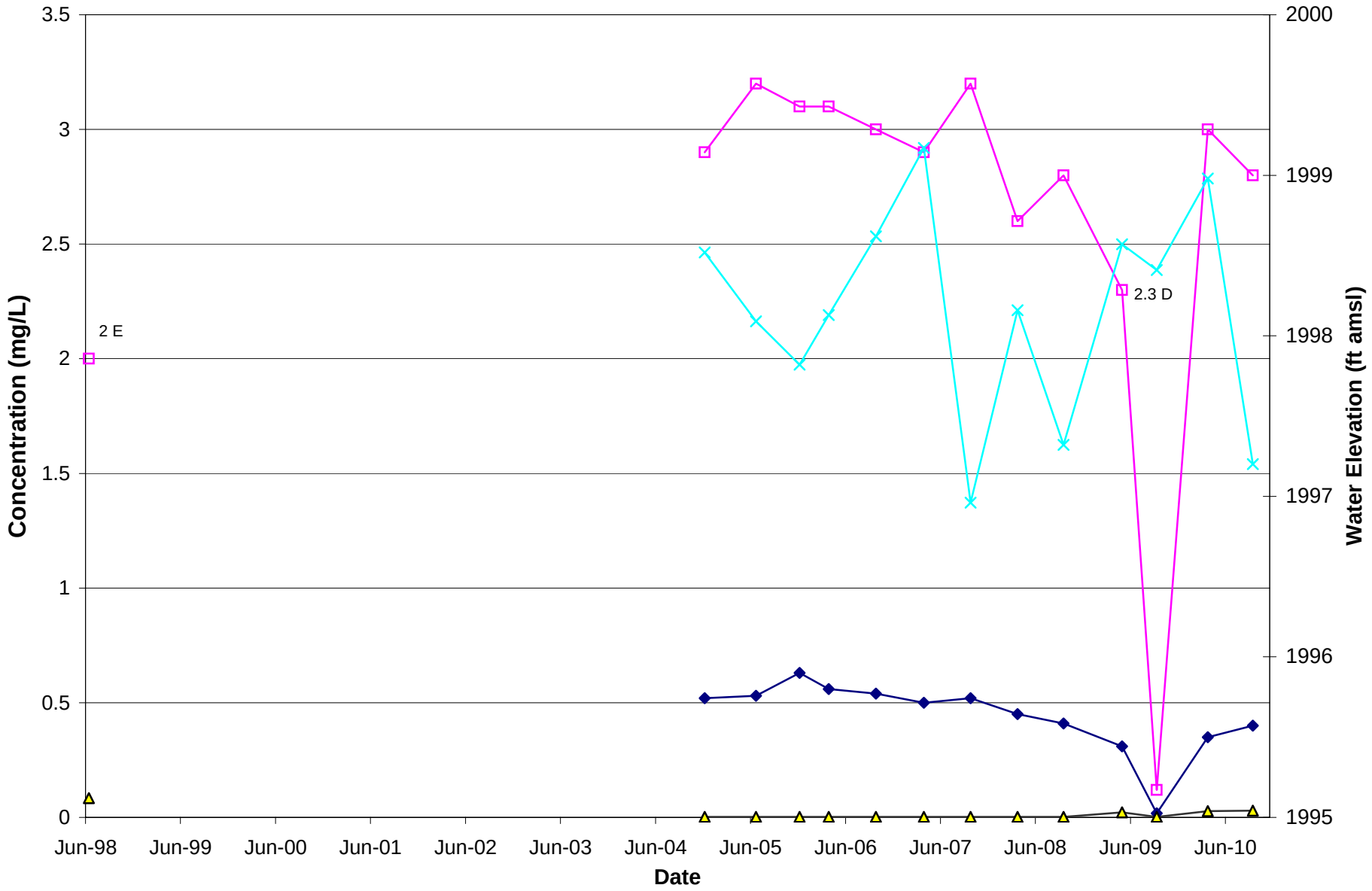
MW-5D VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/9/1998, 9/23/1999, 6/23/1999, 9/28/1999, 3/14/2000 and 9/12/2001 are estimated values.
4. Result for cDCE on 9/28/1999 is non-detect.
5. **J** - Estimated values.
6. **D** - This flag indicates a result from a diluted sample.
7. Data with flag labeled on graph as appropriate.
8. No water elevation available December 2003.

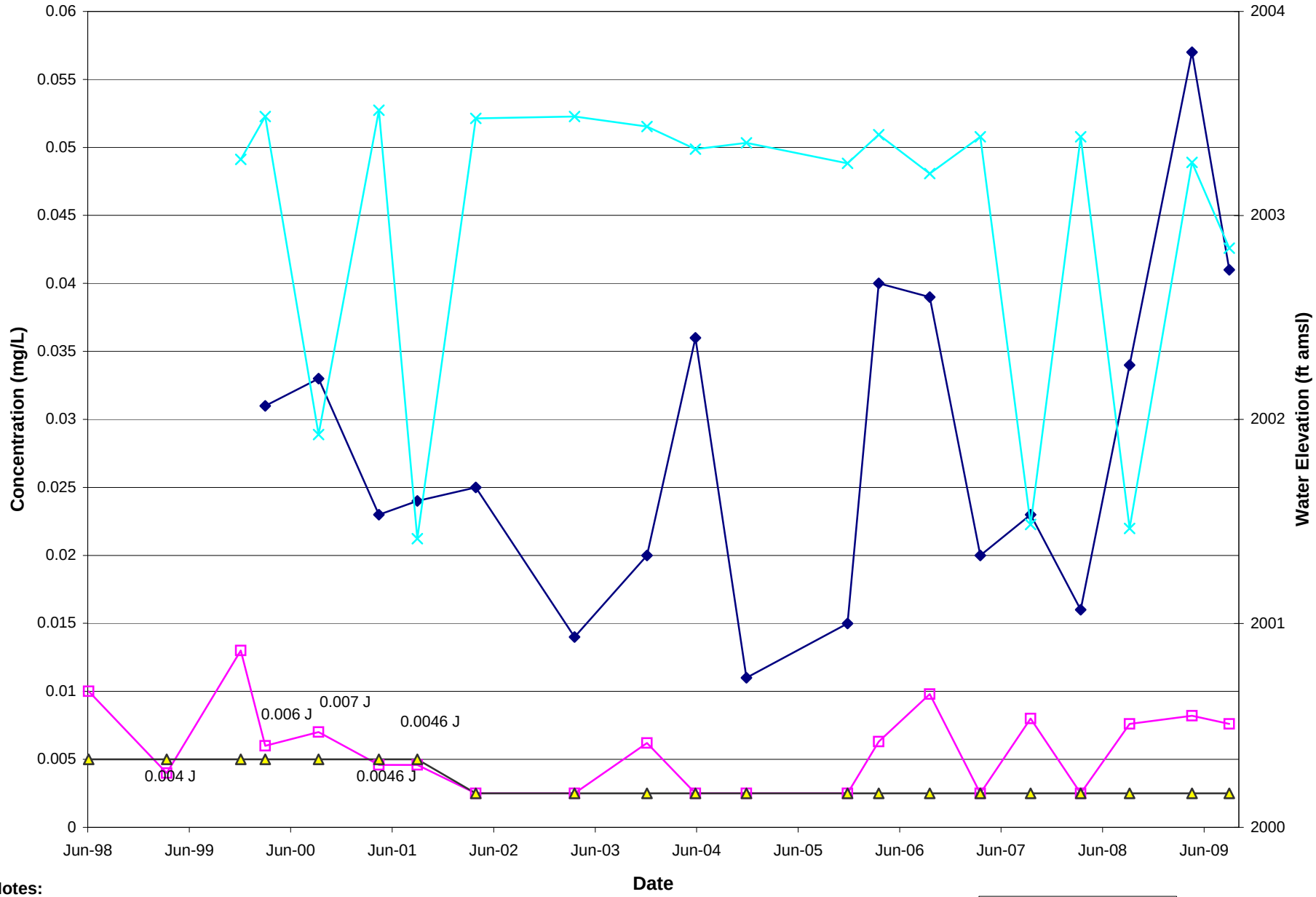
MW-11S VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. **E** - Results are greater than the calibration range fo the instrument used for analysis.
4. Vinyl chloride results are non-detect with an exception of 6/17/1998.
5. Flagged data is labeled on the graph as appropriate.

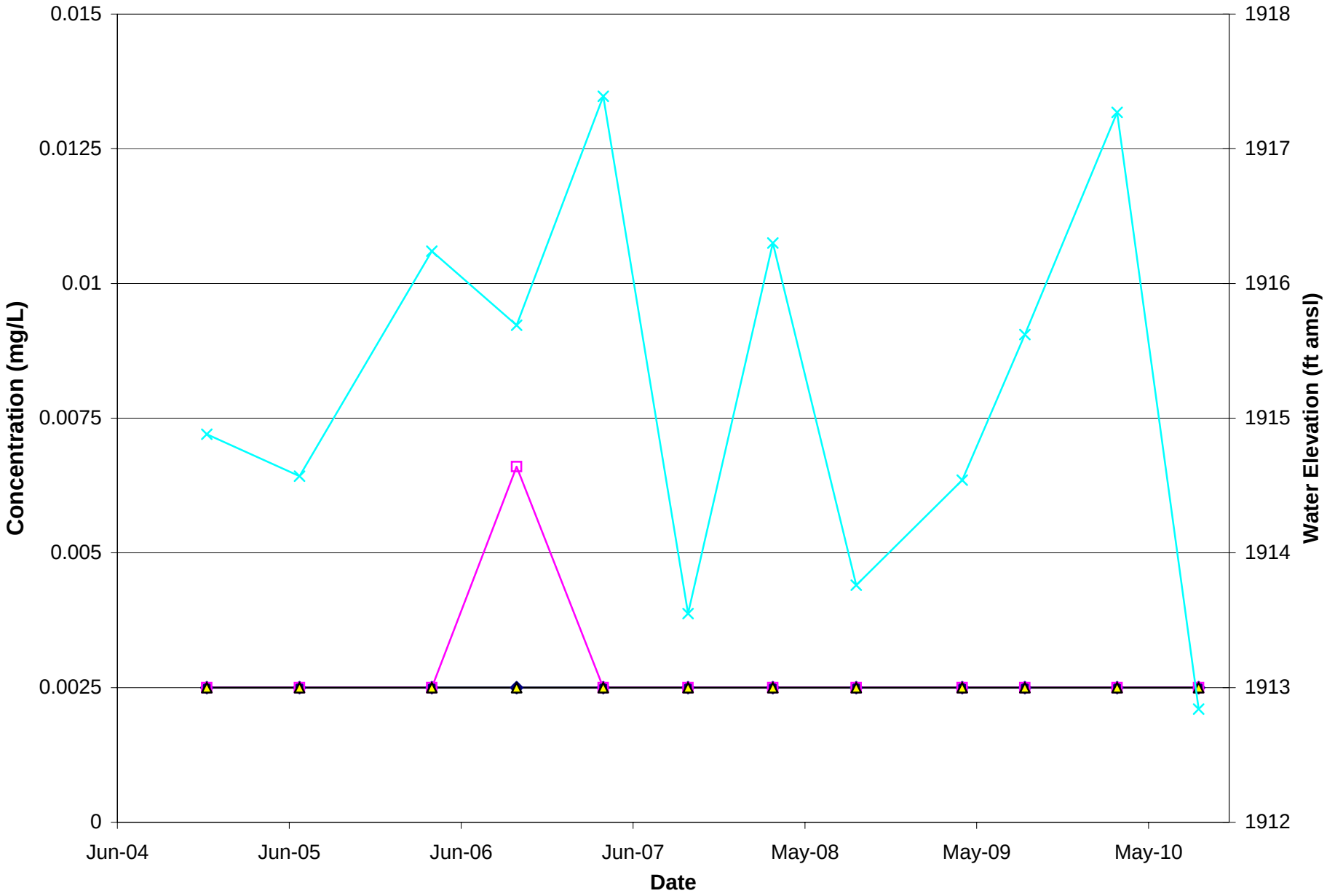
MW-15S VOCs



Notes:

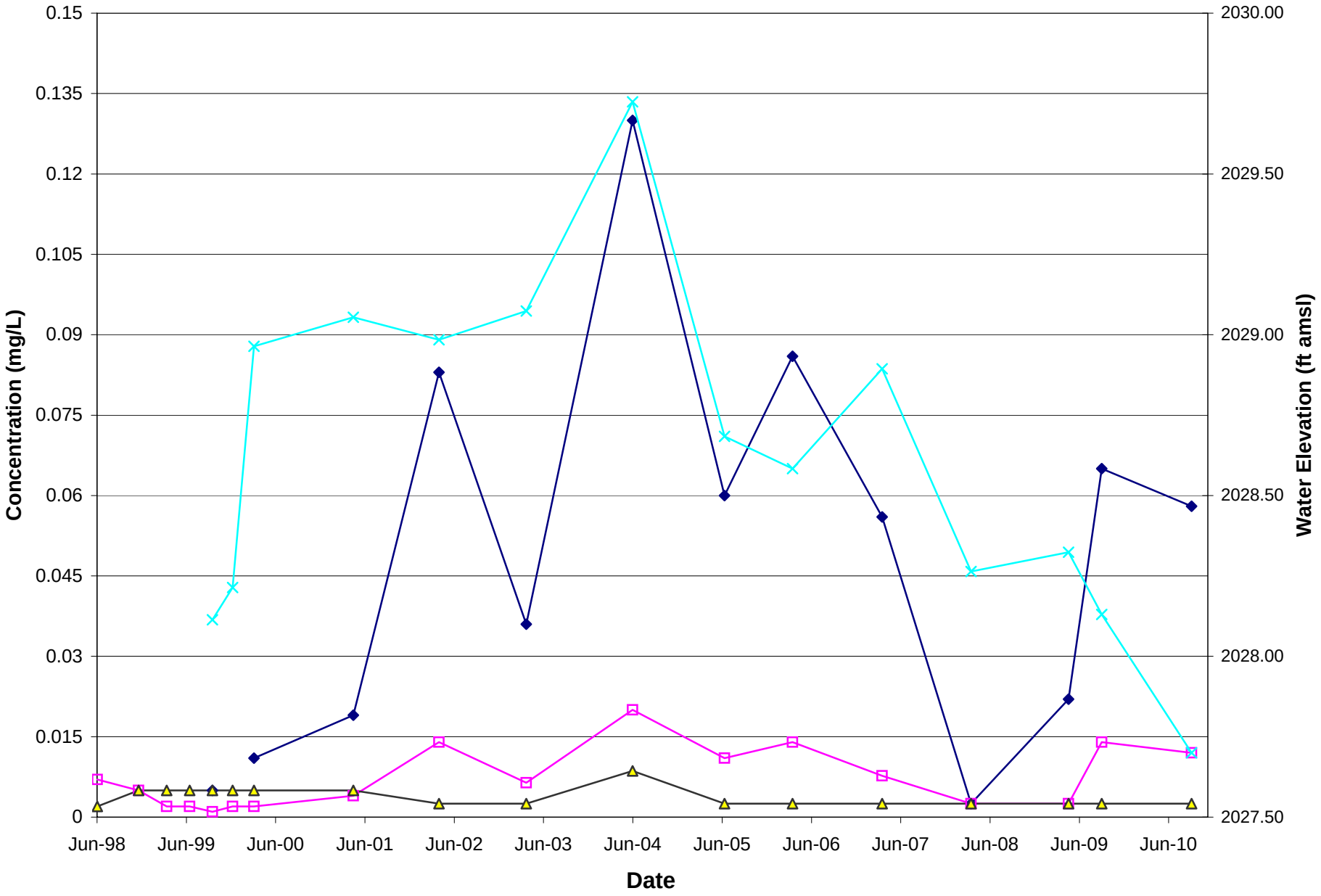
1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. **J** - Estimated value.
4. All Vinyl chloride and a majority of TCE results are non-detect.
5. Data with flag labeled on graph as appropriate.

MW-16S VOCs



Notes:
1. All values for cDCE, TCE and Vinyl chloride are non-detect with the exception of TCE on 9/27/2006.
2. There is no data available for MW-16S prior to December 2004.

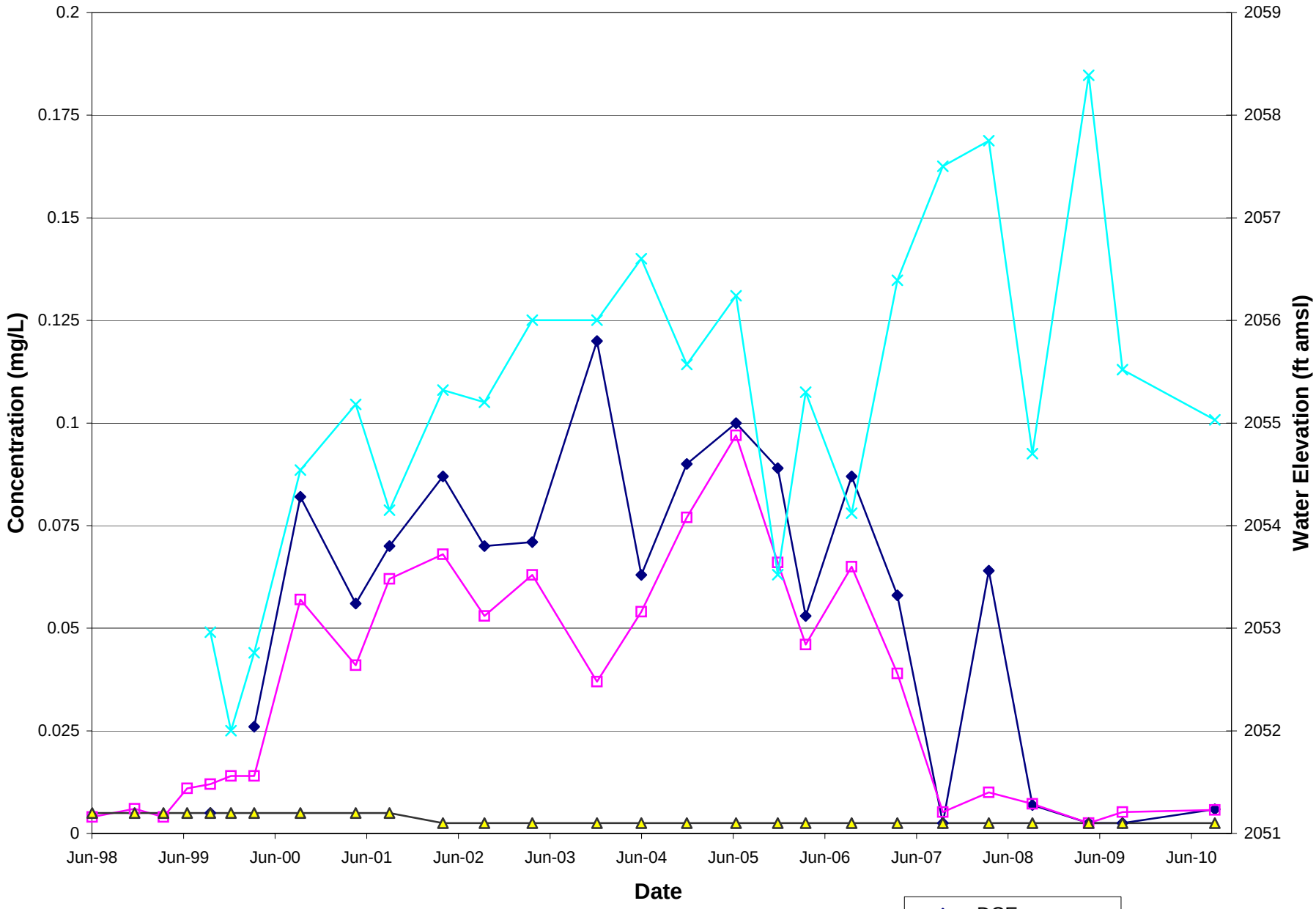
MW-17S VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl choride results are either non-detect and/or estimated values.
4. Results for cDCE on 9/29/1999 and 3/25/2008 are non-detect.

MW-18S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/15/1998, 12/1/1998 and 3/26/1999 are estimated values.
4. Vinyl chloride results are non-detect; cDCE is non-detect on 9/29/1999, 9/25/2007 and 4/28/2009.