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DRAFT
GROUNDWATER MONITORING REPORT FOR 2008 AND 2009
OMEGA CHEMICAL CORPORATION SUPERFUND SITE
OPERABLE UNIT 2

LOS ANGELES COUNTY, CALIFORNIA

EPA CONTRACT NO. EP-S9-08-04
EPA WORK ASSIGNMENT NO. 038-RICO-09BC
CH2M HILL PROJECT NO. 386743

Prepared for
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, California 94105

Prepared by
CH2M HILL
3550 Vine Street, Suite 320
Riverside, California 92507

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Contents

Section **Page**

Acronyms and Abbreviations ..... **ix**

1. Introduction **1-1**
1.1 Background 1-1
1.2 Monitoring Wells 1-2
1.3 Report Organization 1-2

2. Sampling Approach **2-1**
2.1 Sample Collection Methods 2-1
2.1.1 EPA Well Sampling 2-1
2.1.2 Field Parameters Measurement 2-1
2.1.3 Depth to Water Measurement 2-2
2.2 Sample Analysis and Laboratory Assignments 2-2
2.3 Quality Assurance/Quality Control 2-2

3. Results and Discussion **3-1**
3.1 Groundwater Levels 3-1
3.1.1 Hydrographs 3-1
3.1.2 Water Table Contours 3-1
3.1.3 Vertical Gradients 3-2
3.2 Analytical Results 3-2
3.2.1 Volatile Organic Compounds 3-2
3.2.2 Quality Assurance/Quality Control 3-11
3.3 Trend Analysis 3-12

4. Summary of Findings **4-1**
4.1 Groundwater Flow 4-1
4.2 VOC Detections 4-1
4.3 Plume Extent for Main Contaminants 4-2
4.4 Freon Ratios 4-3
4.5 Temporal Concentration Trends 4-3
4.6 Other Facility-Specific Data 4-4

5. Recommendations **5-1**

6. References **6-1**

Tables

1-1 Monitoring Well Construction Details
3-1 OPOG and EPA Historical Groundwater Elevations
3-2 Summary of 2009 First Quarter and Third Quarter Vertical Gradients of OPOG and EPA Cluster Wells
3-3a Summary of Detections- First Quarter 2008
3-3b Summary of Detections- First Quarter 2009
3-3c Summary of Detections- Third Quarter 2009
3-4 Statistics of Freon 113/Freon 11 Ratios
3-5 Summary Matrix of Trend Analysis

Figures

1-1 Facility Location Map
1-2 Monitoring Well Locations
3-1 Monitoring Well Hydrographs
3-2 City of Whittier Annual Rainfall Totals
3-3 Water Table Contours, First Quarter 2008
3-4 Water Table Contours, First Quarter 2009
3-5 Water Table Contours, Third Quarter 2009
3-6a Composite PCE Distribution, First Quarter 2008
3-6b Composite PCE Distribution, First Quarter 2009
3-6c Composite PCE Distribution, Third Quarter 2009
3-7a Composite TCE Distribution, First Quarter 2008
3-7b Composite TCE Distribution, First Quarter 2009
3-7c Composite TCE Distribution, Third Quarter 2009
3-8a Composite Freon 11 Distribution, First Quarter 2008
3-8b Composite Freon 11 Distribution, First Quarter 2009
3-8c Composite Freon 11 Distribution, Third Quarter 2009
3-9a Composite Freon 113 Distribution, First Quarter 2008
3-9b Composite Freon 113 Distribution, First Quarter 2009
3-9c Composite Freon 113 Distribution, Third Quarter 2009
3-10a Composite 1,2-DCA Distribution, First Quarter 2008
3-10b Composite 1,2-DCA Distribution, First Quarter 2009
3-10c Composite 1,2-DCA Distribution, Third Quarter 2009
3-11a Composite 1,4-Dioxane Distribution, First Quarter 2008
3-11b Composite 1,4-Dioxane Distribution, First Quarter 2009
3-11c Composite 1,4-Dioxane Distribution, Third Quarter 2009
3-12 Freon 113 to Freon 11 Ratios
3-13 PCE Temporal Trend Distribution
3-14 TCE Temporal Trend Distribution
3-15 Freon 11 Temporal Trend Distribution
3-16 Freon 113 Temporal Trend Distribution
3-17 Trichloromethylene Temporal Trend Distribution
3-18 1,1-DCE Temporal Trend Distribution
3-19 1,4-Dioxane Temporal Trend Distribution
3-20 cis-1,2-DCE Temporal Trend Distribution

Appendixes

A Monitoring Well Purge Forms (on CD only)

B Chain-of-Custody Forms (on CD only)

C Data Needs and Uses (on CD only)

D OU2 Shallow Groundwater Gradient Calculations

E VOC Detection Summary: 1Q2008, 1Q2009, and 3Q2009
- E.1 1Q2008
- E.2 1Q2009
- E.3 3Q2009

F OU1 and OU2 Lab Reports (on CD only)

G VOC Time Series Plots

H Statistical Plots

Acronyms and Abbreviations

µg/L	micrograms per liter
°C	degrees Celsius
1,1,1-TCA	1,1,1-trichloroethane
1,1,2-TCA	1,1,2-trichloroethane
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2,3-TCP	1,2,3-trichloropropane
1,2-DCA	1,2-dichloroethane
AMK	former Angeles Chemical Company and former McKesson Corporation
B	(soil) boring
bgs	below ground surface
BOD	biological oxygen demand
CDM	Camp Dresser & McKee
CENCO	former refinery
cis-1,2-DCE	cis-1-2-dichloroethene
CLP	Contract Laboratory Program
COD	chemical oxygen demand
CPT	cone penetrometer test
DHS	California Department of Health Services
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
F11	trichlorofluoromethane [Freon 11]
F113	1,1,2-trichloro-1,2,2-trifluoroethane [Freon 113]
F12	dichlorodifluoromethane [Freon 12]
FSP	field sampling plan
ft/ft	foot per foot
HPLC	high-performance liquid chromatography
L	liter

MCL	maximum contaminant level
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl tertiary butyl ether
MW	EPA monitoring wells
NAVD	North American Vertical Datum
ND	nondetect
NDMA	n-nitrosodimethylamine
ng/L	nanograms per liter
NTU	nephelometric turbidity unit
OFRP	Oil Field Reclamation Project
Omega	Omega Chemical Corporation
OPOG	Omega Chemical Site PRP Organized Group
ORP	oxidation-reduction potential
OU	operable unit
OW	OPOG monitoring wells
PCE	perchloroethylene (tetrachloroethylene)
PHG	public health goal
PID	photoionization detector
PP	push-probe sampling
PRP	potentially responsible party
PVC	polyvinyl chloride
QA	quality assurance
QAMS	Quality Assurance Management Section
QAPP	Quality Assurance Project Plan
QC	quality control
RCRA	Resource Conservation and Recovery Act of 1978
RI/FS	remedial investigation/feasibility study
SAP	sampling and analysis plan
STL	Severn Trent Laboratory

SVOC	semivolatile organic compound
TCE	trichloroethene
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
trans-1,2-DCE	trans-1,2-dichloroethene
USACE	U.S. Army Corps of Engineers
VOA	volatile organic analysis
VOC	volatile organic compound
WA	Work Assignment
WDI	Waste Disposal, Inc.
Weston	Weston Solutions, Inc.

1. Introduction

This groundwater monitoring report has been prepared to support the U.S. Environmental Protection Agency (EPA) in conducting a remedial investigation/feasibility study (RI/FS) at the Omega Chemical Superfund site (Omega Site), located in Whittier, California (Figure 1-1). The report summarizes the results of the March 2008 (1Q2008), March 2009 (1Q2009), and September 2009 (3Q2009) groundwater sampling events performed by CH2M HILL for Operable Unit 2 (OU2) of the Omega Site. In addition, sampling data for Operable Unit 1 (OU1) of the Omega Site, and other non-EPA, facility-specific well data for the facilities located with OU2 were included in the analyses conducted to evaluate water level and water quality trends at the Omega Site.

1.1 Background

This section briefly describes the operational history of the Omega facility and the past investigations and remediation activities conducted at the Omega Site. Detailed discussions regarding the Omega Site are provided in the Final Remedial Investigation (RI) Report for the site (CH2M HILL, 2010).

The Omega Chemical Corporation (Omega) is a former refrigerant/solvent recycling operation located in Whittier, California, a community of approximately 85,000 people. The Omega property occupies Los Angeles County Assessor Tract Number 13486 (Lots 3 and 4). It covers an area of approximately 41,000 square feet (200 feet wide by 205 feet long) and contains two structures: a 140-foot by 50-foot warehouse, and an 80-foot by 30-foot administrative building. A loading dock is attached to the rear of the warehouse. The Omega property is paved with concrete and secured with a 7-foot-high perimeter fence topped with razor wire, and locking gate. The facility operated as a Resource Conservation and Recovery Act (RCRA) solvent and refrigerant recycling and treatment facility from approximately 1976 to 1991, handling primarily chlorinated hydrocarbons and chlorofluorocarbons. Drums and bulk loads of waste solvents and chemicals from various industrial activities were processed at the former Omega facility to form commercial products. Chemical, thermal, and physical treatment processes were reportedly used to recycle the waste materials. Wastes generated from these treatment and recycling activities included distillation column (still) bottoms, aqueous fractions, and nonrecoverable solvents. Prior to constructing the buildings at the Omega property in July 1951, the property was used for agriculture.

The Omega Site was placed on the National Priorities List (NPL) in January 1999. EPA currently manages the Omega Site as three operable units (OU1, OU2, and OU3). OU1 includes the soil and groundwater contamination at the former Omega facility, located at 12504 and 12512 East Whittier Boulevard, and approximately 100 feet west-southwest of Putnam Street.

OU2 generally includes the groundwater-contaminated area that extends from the former Omega facility to approximately 4.5 miles south-southwest of the site. A site map showing the approximate boundaries of OU1 and OU2 is presented in Figure 1-2.

EPA created OU3 to address indoor air impacts at the former Omega Chemical property, as well as adjacent and nearby properties where the underlying vadose zone has been affected by contamination derived from the former Omega Chemical property.

Groundwater at the Omega Site is found to be primarily affected by volatile organic compounds (VOCs). Chlorinated hydrocarbons (for example, tetrachloroethylene [PCE], trichloroethene [TCE], and others), freons (trichlorofluoromethane [F11] and 1,1,2-trichloro-1,2,2-trifluoroethane [F113]), and emergent compound 1,4-dioxane are among the contaminants with the highest concentrations.

1.2 Monitoring Wells

The groundwater monitoring well network at the Omega Site consists of the monitoring wells installed by EPA and the Omega Chemical Site PRP Organized Group (OPOG):

- **OPOG** installed monitoring wells OW1 through OW10 at OU1 and OU2. Boring logs, downhole geophysical logs, and well completion diagrams for wells OW1 to OW8 can be found in the Final RI report (CH2M HILL, 2010). Wells OW9 and OW10 were installed in December 2008 as part of the OU1 interim groundwater extraction system.
- **EPA installed** monitoring wells MW1 through MW31. Boring logs, geophysical logs, and well completion diagrams are also included in the Final RI report (CH2M HILL, 2010).

The groundwater monitoring wells installed by Camp Dresser & McKee (CDM) on behalf of OPOG are collectively referred to as "OPOG wells." These wells are sampled by CDM on a biannual basis. When CDM performs this sampling, CH2M HILL collects split samples concurrently on behalf of the EPA.

The EPA monitoring wells are generally located downgradient of OU1. CH2M HILL samples the EPA wells on a biannual basis.

The convention used for the well identifications includes "OW" for the OPOG monitoring wells, a sequential number, and a suffix "A" (shallow well) or "B" (deep well). EPA monitoring wells are designated as "MW" plus a sequential number and a suffix "A" (shallowest well) through "D" (deepest well).

Figure 1-2 is a well location map for all monitoring wells. Well survey and construction information is provided in Table 1-1.

1.3 Report Organization

This report is organized into sections that describe the activities and analytical results of the sampling events stated above. An overview of this document is provided below:

- Section 1 — Introduces the groundwater investigation, including background information, monitoring well information, and report organization.
- Section 2 — Describes the sampling approach and chronology.
- Section 3 — Provides a discussion of the analytical data collected during the OU1 oversight sampling. Also provides a discussion of the water level and analytical data collected at OU2.
- Section 4 — Summary of Findings
- Section 5 —Recommendations
- Section 6 —List of all references.

The appendixes to this document include the following:

A – Monitoring Well Purge Forms (on CD only)
B – Chain-of-Custody Forms (on CD only)
C – Data Needs and Uses (on CD only)
D – OU2 Shallow Groundwater Gradient Calculations
E – VOC Detection Summary: 1Q2008, 1Q2009, and 3Q2009
F – OU1 and OU2 Lab Reports (on CD only)
G – VOC Time Series Plots
H – Statistical Plots

2. Sampling Approach

CH2M HILL collected groundwater samples from the EPA monitoring wells in March 2008, March 2009, and September 2009. An overview of sampling methods and analysis, laboratory assignments, and quality assurance/quality control (QA/QC) is presented in this section. Groundwater samples were collected and analyzed in accordance with the protocols outlined in the field sampling plan (FSP) (CH2M HILL, 2004a and 2004c) and Quality Assurance Project Plan (QAPP) (CH2M HILL, 2004b and 2004d), and the 2006 sampling and analysis plan (SAP) Addendum 1 (CH2M HILL, 2006a and 2006b).

2.1 Sample Collection Methods

The following subsections describe the general sample collection procedures for groundwater sampling at the OU2 monitoring well network. Monitoring well purge forms are provided in Appendix A and chain-of-custody forms in Appendix B.

2.1.1 EPA Well Sampling

EPA monitoring wells are equipped with dedicated pump tubing and bladder pumps to allow sampling using low-flow sampling techniques. During well purging, careful continuous measurements of field parameters including specific conductance, pH, temperature, dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity were used to assess when purged water had reached equilibrium. A flow-through cell was used to check that the purge water was continuously monitored. Each well was pumped until the measured field parameters stabilized within 10 percent over three successive readings prior to collecting samples.

If wells do not produce enough water for purging with a pump, the dedicated bladder pump is manually removed from the well, a disposable polyethylene bailer and new polyethylene string is used to collect samples, and the bladder pump is manually lowered down to the same depth in the well. During 2009 first quarter sampling events, wells MW8A, MW9A, MW11, and MW19 were sampled with bailers, and wells MW13A, MW16A, and MW17A were not sampled because of dry conditions. During 2009 third quarter sampling events, several wells were either dry or not enough groundwater was present for bailer samplings. These included wells MW8A, MW9A, MW11, MW13A, MW16A, MW17A, MW19, MW20C, and MW25D.

2.1.2 Field Parameters Measurement

A digital combination conductivity-pH-temperature-DO-ORP meter was used for specific conductance, pH, temperature, DO, and ORP measurements. Turbidity measurements were made with a digital readout turbidity meter (readout in nephelometric turbidity units [NTUs]). A photoionization detector (PID) was used to measure organic vapor measurements (headspace) inside the well immediately after opening the well caps. Equipment used to measure field parameters was maintained and calibrated daily according to the manufacturer's specifications.

2.1.3 Depth to Water Measurement

Depth to groundwater was measured at monitoring wells immediately prior to well purging and sampling activities to establish a static water level. Water levels were measured with a decontaminated electronic water level indicator (sounder) to the nearest 0.01-foot. Water levels were also measured at regular intervals during purging activities to check that a constant drawdown was maintained during pumping. A final water level was recorded after sample collection. The reference point for water level measurement was the top of the casing. For wells with both inner and outer (conductor) casing, the top of the inner casing was used as the reference point.

2.2 Sample Analysis and Laboratory Assignments

Monitoring wells were sampled for VOCs (including methyl tertiary butyl ether [MTBE]) and 1,4-dioxane.

A summary of the above analytical parameters and applicable regulatory limits is provided in the Data Needs and Uses table of the QAPP (CH2M HILL, 2004d), which is also included in Appendix C.

The groundwater samples were analyzed using the EPA-approved methods described in SAP Addendum 1 (CH2M HILL, 2006a and 2006b).

2.3 Quality Assurance/Quality Control

QA/QC samples were collected in accordance with the protocols outlined in the FSP and QAPP. QC samples include ambient blanks, equipment blanks, field duplicates, laboratory QC samples (for matrix spike and matrix spike duplicates [MS/MSDs]), and temperature blanks. Ambient and equipment blanks were analyzed for VOCs and 1,2,3-trichloropropane (1,2,3-TCP). Field duplicates and laboratory QC samples were analyzed for the standard list of parameters as presented in Section 2.2. Twice the normal volume of sample was collected for laboratory QC samples. Equipment blanks were collected only during OPOG well sampling.

Provided below is a brief description of the QA/QC samples collected during this investigation.

- **Ambient Blanks.** Ambient blanks were collected to verify that contamination was not introduced to samples during collection, handling, or shipping. They were prepared by pouring high-performance liquid chromatography (HPLC) water directly into the sample bottles in the field. Ambient blanks were prepared and labeled in the same manner as the field samples and sent "blind" to the laboratory. Ambient blanks were collected at a frequency of 1 in every 10 consecutively collected samples or 1 per week, whichever was greater.
- **Equipment Blanks**. Equipment blanks are collected to verify whether or not contamination was introduced to samples through the repeated use of sampling equipment at different sample locations. One equipment blank per sampling event was collected during biannual sampling of OPOG wells. The OPOG wells have dedicated

pump tubing, but not dedicated pumps. Equipment blanks were prepared by pouring HPLC water directly into the pump inlet, through the pump, and into sample containers. These samples are not included in this report. Equipment blanks are not collected for EPA well sampling.

- **Field Duplicates.** The field duplicate is an independent sample collected as close as possible to the original sample from the same source and is used to document sampling precision. Field duplicates were labeled and packaged in the same manner as other samples so that the laboratory cannot distinguish between samples and duplicates. Each duplicate was taken using the same sampling and preservation method as other samples. An attempt was made to collect duplicate samples from monitoring wells that are known or suspected to contain the chemicals that are being analyzed. Field duplicates were collected at a frequency of 1 in every 10 consecutively collected samples or 1 per week, whichever was greater.
- **Laboratory QC Samples**. Laboratory QC samples were collected to perform MS and MSD analyses. An MS is an aliquot of a sample spiked with a known concentration of target analyte and provides a measure of the method accuracy. The MSD is a laboratory split sample of the MS, and is used to determine the precision of the method. Twice the normal water volume was collected for laboratory QC samples. Laboratory QC samples were collected at a frequency of 1 in every 20 consecutively collected samples or 1 per week, whichever was greater.
- **Temperature Blanks**. Temperature blanks were included with each cooler shipment containing samples sent to the laboratory (regardless of targeted analysis). A temperature blank consists of a VOC sample vial filled in the field with deionized water, handled like an environmental sample, and returned to the laboratory for analysis. The temperature blank provides a means of verifying that samples have been maintained at the proper temperature (4 degrees Celsius [°C]) following collection and during transport to the laboratory.

3. Results and Discussion

3.1 Groundwater Levels

Depth to water measurements were collected during each sampling event to evaluate the direction and gradient of groundwater flow underlying the Omega Site, and to help characterize the interactions between the shallow and deep aquifers. Groundwater elevations were calculated by subtracting the depth to static water level from the surveyed top of casing elevation of the corresponding monitoring wells. Top of casing elevations for EPA wells are consistent with the North American Vertical Datum (NAVD) 1988 (2000 adjusted) datum. The top of well casing elevations for the OPOG wells were increased by 2.2 feet to match the NAVD 1988 (2000 adjusted) datum in this report. The 2.2 feet elevation adjustment resolved the differences in elevations between the EPA and OPOG wells.

It is noted that the water table dropped below the bottoms of some water table wells during each sampling event. Water levels for those dry wells are therefore not available.

Table 3-1 presents historical groundwater elevation data for OPOG and EPA monitoring wells.

3.1.1 Hydrographs

Figure 3-1 presents hydrographs for Omega monitoring wells. As shown in the figures, fluctuations of water levels at OPOG and EPA monitoring wells display a similar pattern over time. Groundwater elevations generally decreased between 2002 and 2004 followed by a fairly quick recovery in the first half of 2005 in response to high precipitation; remained relatively steady during the period of mid-2005 to mid-2007; and declined again after mid-2007. Slightly steeper decreases in groundwater elevations were observed between June 2003 and December 2004 and between mid-2007 and September 2009 at most wells. Figure 3-2 presents annual rainfall in Whittier. The recent (2008-2009) decline in water levels in the monitoring wells coincides with the below-average annual rainfall during this period.

3.1.2 Water Table Contours

Groundwater contour maps were prepared for the three sampling events using the water levels measured at the shallow monitoring wells to show the general groundwater flow regime in the water table aquifer at the Omega Site. Figures 3-3, 3-4, and 3-5 show the water table contours for 1Q2008, 1Q2009 and 3Q2009, respectively. Although the overall groundwater flow direction is to the southwest in the vicinity of the Omega Site, the hydraulic gradient varies slightly with locations. Horizontal gradients were calculated at three selected locations: the upper (between Slauson Avenue and Whittier), middle (between Florence Avenue and Los Nietos Road), and lower (Imperial Hwy and Landland Road) OU2 for the shallow aquifer, and the results are presented on Figures 3-3, 3-4, and 3-5. Calculations of shallow groundwater horizontal gradients are included in Appendix D. Generally, water level measurements from the same set of wells were used to calculate the

horizontal gradients; however, nearby wells were selected to replace dry wells when dry conditions occurred during any sampling events.

Although there were some temporal variations in the calculated horizontal gradients for the upper, middle, and lower OU2 areas, the flow directions in the shallow aquifer at the Omega Site remained relatively constant for the three sampling events.

3.1.3 Vertical Gradients

Vertical gradients were calculated at locations where wells screened in different depth intervals are co-located. The calculations of vertical gradients were conducted for the two sampling events in 2009 (Table 3-2).

In general, a downward gradient was observed at most locations (indicated by a positive vertical gradient value), with a few exceptions where the water levels at the well screened in the deeper intervals were slightly higher than those screened in the shallow intervals (indicated by negative vertical gradient values). The generally downward gradient is mostly attributed to the areal recharges from precipitation and surface water bodies such as rivers and spreading basins, production pumping from deep aquifers throughout the basin, and the absence of major groundwater pumping in the shallow aquifer at OU2.

3.2 Analytical Results

This section discusses the analytical results of the three sampling events. Tables 3-3a, 3-3b, and 3-3c summarize the analytical results for those groundwater samples with detectable contaminant concentrations. Appendix E presents the entire analytical results, including the nondetects, and also includes summary tables for QC samples.

The "Lab QC" data listed in Tables 3-3a, 3-3b, and 3-3c and in Appendix E should be considered primary data. The "Lab QC" sample type indicates that MS/MSDs and primary samples were collected at that sample location.

3.2.1 Volatile Organic Compounds

The most frequently detected compounds are summarized below, followed by a discussion of individual compounds.

Laboratory Results for 1Q2008

PCE was detected in 66 wells. The maximum PCE concentration detected was 170,000 micrograms per liter (µg/L) in well OW1A. TCE was detected in 62 wells. The maximum TCE concentration detected was 3,800 µg/L in well OW1A. 1,1-Dichloroethene (1,1-DCE) was detected in 50 wells. The maximum 1,1-DCE concentration detected was 1,000 µg/L in well OW1A. Chloroform was detected in 44 wells. The maximum chloroform concentration detected was 1,100 µg/L in EW-2. F113 was detected in 44 wells. The maximum F113 concentration detected was 5,000 µg/L in well OW8A. Well OW1A had the highest number of maximum detects in 1Q2008.

Laboratory Results for 1Q2009

PCE was detected in 61 wells. The maximum PCE concentration detected was 150,000 µg/L in well OW1A. TCE was detected in 57 wells. The maximum TCE concentration detected

was 11,000 µg/L in well OW1B. 1,1-Dichloroethene (1,1-DCE) was detected in 49 wells. The maximum 1,1-DCE concentration detected was 1,500 µg/L in well OW9. Chloroform was detected in 37 wells. The maximum chloroform concentration detected was 1,100 µg/L in OW9. F113 was detected in 43 wells. The maximum F113 concentration detected was 1,700 µg/L in well OW8A.

Laboratory Results for 3Q2009

PCE was detected in 61 wells. The maximum PCE concentration detected was 24,000 µg/L in well OW1A. TCE was detected in 61 wells. The maximum TCE concentration detected was 2,300 µg/L in well OW1A. 1,1-Dichloroethene (1,1-DCE) was detected in 45 wells. The maximum 1,1-DCE concentration detected was 1,600 µg/L in well OW9. Chloroform was detected in 46 wells. The maximum chloroform concentration detected was 1,100 µg/L in OW9. F113 was detected in 48 wells. The maximum F113 concentration detected was 710 µg/L in well OW9.

The well-by-well results for 1Q2008, 1Q2009, and 3Q2009 are shown in Appendixes E1, E2, and E3, respectively. In addition, statistical summaries for the respective quarters are shown in Tables 3-3a, 3-3b, and 3-3c.

Sample dilutions were necessary in order to analyze several of the OPOG well samples (for example, OW1A, OW3, OW5 and OW8A), because the undiluted sample concentration exceeded the laboratory instrument calibration range. The dilutions raised the reporting limits for all VOC analytes included in the analytical method, resulting in estimated or nondetect results for lower concentration analytes.

3.2.1.1 Chlorinated Volatile Organic Compounds

Chlorinated VOCs were the most frequently detected compounds.

Tetrachloroethene (PCE)

PCE was detected at all monitoring wells at concentrations above the California Primary maximum contaminant level (MCL) of 5 µg/L. Detections greater than 1,000 µg/L were reported at wells OW1A (240,000 µg/L, 3Q2009), OW2 (4,000 µg/L, 1Q2009), OW3A (3,200 µg/L, 3Q2009), OW5 (1,400 µg/L, 1Q2008), and OW8A (33,000 µg/L, 1Q2009). The maximum PCE detection was reported at well OW1A in the 3Q2009 sampling event. Detections were generally lower at EPA monitoring wells. Other than OPOG and EPA detections, Techni Braze, Inc. has reported concentrations ranging from nondetection to 6,100 µg/L in the 3Q2008 sampling event (LFR, 2008), Pilot Chemical Company has reported concentrations ranging from 2.9 to 140 µg/L in the December 2009 semi-annual groundwater monitoring report (URS, 2010), Phibro-Tech, Inc. has reported concentrations ranging from nondetection to 130 µg/L in the 3Q2009 sampling event (Iris, 2010), Site C has reported concentrations ranging from nondetection to 110 µg/L in 2007 annual groundwater monitoring report (URS, 2008), Mission Linen Supply has reported concentrations ranging from nondetection to 460 µg/L in the 1Q2009 sampling event (CGC, 2009), former Angeles Chemical Co. has reported concentrations ranging from nondetection to 344 µg/L in the 1Q2009 sampling event and to 76.5 µg/L in the 3Q2009 sampling event (Clean Soil Inc., 2009a and 2009b), and McKesson Corporation has reported concentrations ranging from nondetection to 1,100 µg/L in the 1Q2009 sampling event (Geosyntec, 2009). PCE plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-6a, 3-6b, and

3-6c, respectively. The PCE plume is continuous over OU2. The distribution of PCE for these three quarters remained generally the same. PCE concentrations greater than 5 µg/L extend west-southwest downgradient from the former Omega Chemical property to near EPA monitoring well MW29. Concentrations exceeding 500 µg/L are associated with the Omega property and with another source area identified as the former Angeles Chemical Company and the former McKesson Chemical properties.

Trichloroethene (TCE)

TCE was detected at most monitoring wells at concentrations above the California Primary MCL of 5 µg/L. Detections greater than 1,000 µg/L were reported at wells OW1A (3,300 µg/L, 1Q2008) and OW8A (1,400 µg/L, 1Q2008), OW9 (1,200 µg/L, 1Q2009), and MW31 (1,000 µg/L, 3Q2009). The maximum detection was reported at well OW1A in the 1Q2008 sampling events. Other than OPOG and EPA detections, Techni Braze, Inc. has reported concentrations ranging from nondetection to 150 µg/L in the 3Q2008 sampling event (LFR, 2008), Pilot Chemical Company has reported concentrations ranging from 4.5 to 89 µg/L in the December 2009 semi-annual groundwater monitoring report (URS, 2010), Phibro-Tech, Inc. has reported concentrations ranging from nondetection to 98 µg/L in the 3Q2009 sampling event (Iris, 2010), Site C has reported concentrations ranging from nondetection to 85 µg/L in 2007 annual groundwater monitoring report (URS, 2008), Mission Linen Supply has reported concentrations ranging from nondetection to 11 µg/L in the 1Q2009 sampling event (CGC, 2009), former Angeles Chemical Co. has reported concentrations ranging from nondetection to 233 µg/L in the 1Q2009 sampling event and to 44.2 µg/L in the 3Q2009 sampling event (Clean Soil Inc., 2009a and 2009b), and McKesson Corporation has reported concentrations ranging from nondetection to 820 µg/L in the 1Q2009 sampling event (Geosyntec, 2009). TCE plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-7a, 3-7b, and 3-7c, respectively. The TCE plume is continuous over OU2. The distribution of TCE for these three quarters generally remained the same and is similar to the distribution of PCE.

F11 and F113

F11 was detected at a few wells in each sampling event. Detections were reported above the California Primary MCL (150 µg/L) at wells OW2 (190 µg/L, 1Q2008), OW5 (180 µg/L, 1Q2008), OW8A (360 µg/L, 1Q2008), OW9 (280 µg/L, 1Q2009), MW1A (150 µg/L, 1Q2009 and 3Q2009), MW5 (210 µg/L, 1Q2008), MW14 (150 µg/L, 1Q2008), MW15 (370 µg/L, 1Q2008), MW23A (170 µg/L, 1Q2008), and MW23C (160 µg/L, 3Q2009). The maximum detection was reported at well MW15 in the 1Q2008 sampling events. Other than OPOG and EPA detections, Phibro-Tech, Inc. has reported concentrations ranging from nondetection to 16 µg/L in the 3Q2009 sampling event (Iris, 2010), and McKesson Corporation has reported concentrations ranging from nondetection to 84 µg/L in the 1Q2009 sampling event (Geosyntec, 2009). F11 plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-8a, 3-8b, and 3-8c, respectively. F11 does not cover the same large area as the PCE or TCE plumes. Changes of 5 µg/L plume distribution are minor; however, distribution of concentrations greater than 150 µg/L successively reduce covered areas over time. F113 was detected in samples from a few wells in each sampling event. The maximum detection was reported at well OW8A (1,700 µg/L) in 1Q2009. Detections greater than 500 µg/L were also reported at wells OW2 (1,100 µg/L, 1Q2009), OW5 (540 µg/L, 1Q2008), OW9 (930 µg/L, 1Q2008), MW5 (580 µg/L, 1Q2008), MW15 (1,000 µg/L, 1Q2008), and MW23A (750 µg/L,

1Q2008). Only OW8A exceeds the California Primary MCL of 1,200 µg/L. Phibro-Tech, Inc. also has reported concentrations ranging from nondetection to 34 µg/L in the 3Q2009 sampling event (Iris, 2010). F113 plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-9a, 3-9b, and 3-9c, respectively. The Freon plumes are continuous over OU2. The distribution of F113 is similar to the distribution of F11. Both F113 and F11 are stable compounds in groundwater. The ratio of F113 to F11 can be assumed to remain constant (within a narrow range) once they are released to groundwater. Omega OU1 is the only known source of Freons; therefore, an analysis of the ratio of F113 and F11 can provide an indication as to whether multiple sources exist in OU2. Discussion of the ratio of F113 and Freon is presented in Section 3.2.1.3.

1,2-Dichloroethane (1,2-DCA)

1,2-DCA was detected at 20 wells in 1Q2008, 11 wells in 1Q2009, and 9 wells in 3Q2009 sampling events. The California Primary MCL is 0.5 µg/L and detections greater than 100 µg/L were reported at wells OW8A and OW9. Maximum 1,2-DCA detection was reported at well OW8A (310 µg/L) in the 1Q2009 sampling event. Other than OPOG and EPA detections, Techni Braze, Inc. has reported concentrations ranging from nondetection to 0.64 µg/L in the 3Q2008 sampling event (LFR, 2008), Pilot Chemical Company has reported concentrations ranging from nondetection to 43 µg/L in the December 2009 semi-annual groundwater monitoring report; it is noted that Pilot Chemical Company well MW-1 was not sampled in December 2009, but in April 2009 it had 500 µg/L of 1,2-DCA and historical concentrations above 1,000 µg/L (URS, 2010). Phibro-Tech, Inc. has reported concentrations ranging from nondetection to 19 µg/L in the 3Q2009 sampling event (Iris, 2010), Site C has reported concentrations ranging from nondetection to 26 µg/L in the 2007 annual groundwater monitoring report (URS, 2008), former Angeles Chemical Co. has reported concentrations ranging from nondetection to 2.8 µg/L in the 1Q2009 sampling event and to 29 µg/L in the 3Q2009 sampling event (Clean Soil Inc., 2009a and 2009b), and McKesson Corporation has reported concentrations ranging from nondetection to 530 µg/L in the 1Q2009 sampling event (Geosyntec, 2009). 1,2-DCA plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-10a, 3-10b, and 3-10c, respectively. The 1,2-DCA plume is narrow and follows the main contaminant transport pathway from the former Omega property; the plume is collocated with the zone of high PCE and TCE concentrations. The plume appears to be continuous over OU2.

1,1-Dichloroethane (1,1-DCA)

1,1-DCA was detected at more than 20 wells in each sampling event. The California Primary MCL is 5 µg/L and the maximum concentrations were detected at well MW17A in 1Q2008 (100 µg/L), well OW8A in 1Q2009 (74J µg/L), and well OW9 in 3Q2009 (46J µg/L) sampling events. The "J" qualifier indicates that the detection is an estimated value.

1,1-Dichloroethene (1,1-DCE)

1,1-DCE was detected at most wells in each sampling event, generally at concentrations above the California Primary MCL (6 µg/L). The maximum detection was reported at well OW9 (1,600 µg/L) in 3Q2009. Detections greater than 500 µg/L were also reported at wells OW8A (750 µg/L, 1Q2009), OW1A (730 µg/L, 1Q2008), OW3A (600 µg/L, 3Q2009), and OW2 (550 µg/L, 1Q2009).

1,1,1-Trichloroethane (1,1,1-TCA)

1,1,1-TCA was mainly detected above the California Primary MCL (200 µg/L) at well OW1A in 3Q2009 (1,900 µg/L), 1Q2009 (1,900 µg/L), and 1Q2008 (2,600 µg/L, 1Q2008), and at well OW1B in 1Q2009 (820 J µg/L). Detections were also reported at wells OW3A, MW1A, MW15, MW17A, MW17B, MW21, MW23A, MW25A, MW26A, MW26B, MW27A, MW5, MW8C, and MW8D, but at concentrations below the MCL.

1,1,2,2-Tetrachloroethane

1,1,2,2-Tetrachloroethane (R-130) was only detected at three wells in the 1Q2009 sampling event. Detections were reported at wells MW1A (0.5 J µg/L), MW8C (0.5 J µg/L), and MW8D (0.5 J µg/L). The detections are below the California Primary MCL of 1 µg/L.

1,1,2-Trichloroethane (1,1,2-TCA)

1,1,2-TCA was detected at a few wells in each sampling event. The California/EPA Primary MCL is 5 µg/L and the maximum detection was reported at well OW8A (90 J µg/L, 1Q2009). Detections were also reported at wells MW1A, MW 2, MW5, MW6, MW8C, MW8D, MW15, MW17A, MW17B, MW23A, MW23C, MW25A, MW27A, and OW1B, but at concentrations below the MCL.

1,2-Dibromoethane

1,2-Dibromoethane was detected at three wells in the 1Q2009 sampling event. The California Primary MCL is 0.05 µg/L and detections were reported at wells MW1A (0.5 J µg/L), MW8C (0.5 J µg/L), and MW8D (0.5 J µg/L).

1,2-Dichlorobenzene

1,2-Dichlorobenzene was detected at a few wells and the maximum concentration was reported at well MW1A (18 µg/L, 3Q2009). This detection was below the California Notification Level of 600 µg/L. The second highest concentration was reported at well OW1B (11 J µg/L, 1Q2009). The "J" qualifier indicates that the detection is an estimated value. The remaining detections were equal to or less than 0.5 µg/L with a "J" qualifier.

1,2-Dichloropropane

1,2-dichloropropane was detected in 1Q2009 and 3Q2009. Detections were reported at wells MW1A, MW20A, MW20B, MW8C, MW8D, and OW1B. No detection exceeded the California Primary MCL of 5 µg/L except MW20A, at 5.1 µg/L in 3Q2009.

1,2,3-Trichlorobenzene

1,2,3-Trichlorobenzene was only detected in the 1Q2009 sampling event. Detection was reported at well MW1A (0.5 J µg/L), MW6 (0.5 J µg/L), MW8B (0.5 J µg/L), MW8C (0.5 J µg/L), MW8D (0.5 J µg/L), MW10 (0.5 J µg/L), and MW24A (0.13 J µg/L). EPA and California currently do not have a screening level for this compound.

1,2,4-Trichlorobenzene

1,2,4-Trichlorobenzene was detected at six wells: MW1A, MW8B, MW 8C, MW8D, MW6, and MW10, at a concentration below the California Primary MCL of 5 µg/L. The detections were all reported in the 1Q2009 sampling event, with the same 0.5 J µg/L concentration. The "J" qualifier indicates the result is estimated below the detection limit.

1,2-Dibromo-3-Chloropropane (DBCP)

1,2-Dibromo-3-Chloropropane (DBCP) was detected at five wells in the 1Q2009 sampling event. The California Primary MCL is 0.2 µg/L and detections were reported at wells MW1A (0.5 J µg/L), MW8B (0.5 J µg/L), MW8C (0.5 J µg/L), MW8D (0.5 J µg/L), and MW6 (0.5 J µg/L).

1,4-Dichlorobenzene

1,4-Dichlorobenzene was only detected at wells MW1A, MW6, MW8B, MW8C, MW8D, MW10, and OW1B in the 1Q2009 sampling event. The maximum concentration was reported at OW1B (1.4 J µg/L) and was below the California Primary MCL of 5 µg/L.

Bromochloromethane

Bromochloromethane was detected at a few wells in 1Q2009 and 3Q2009 sampling events. The maximum concentration was detected at well OW7 (1.2 µg/L, 3Q2009) and was below the EPA Primary MCL of 80 µg/L.

Bromodichloromethane

Bromodichloromethane was only detected at two wells in the 1Q2009 sampling event. Detections were reported at wells MW8C (0.5 J µg/L) and MW8D (0.5 J µg/L). EPA and California currently do not have a screening level for this compound.

Carbon Tetrachloride

Carbon tetrachloride was detected at a few wells in each sampling event. The maximum detection was reported at wells MW1A (0.5 J µg/L) and MW8C (0.5 J µg/L) in the 1Q2009 sampling event. The remaining detections were below the California Primary MCL of 0.5 µg/L.

Chlorobenzene

Chlorobenzene was only detected in the 2009 sampling events. Wells MW1A (0.5 J µg/L), OW8A (2.7 J µg/L), MW8C (0.5 J µg/L) and MW8D (0.5 J µg/L) were detected in the 1Q2009 sampling event. 3Q2009 has only one detection, at OW1A, of 6.8 J µg/L. All detections were below the California Primary MCL of 70 µg/L.

Chloroethane

Chloroethane was detected in 1Q2009 and 3Q2009 sampling events. Only wells MW12 (0.31 J µg/L, 3Q2009), MW8C (0.5 J µg/L, 1Q2009), and MW8D (0.5 J µg/L, 1Q2009) were detected and all detections were below the California Primary MCL of 16 µg/L.

Chloroform

Chloroform was detected at most wells in each sampling event. The maximum detection was reported at well OW9 (1,100 µg/L, 3Q2009 and 1Q2009). The other detections greater than 100 µg/L were also reported at wells OW8A (770 µg/L, 1Q2009), MW1A (210 µg/L, 3Q2009), and OW5 (120 µg/L, 1Q2008). These values exceed the EPA Primary MCL of 80 µg/L, which applies to total trihalomethanes (these include bromoform, bromodichloromethane, chloroform and dibromochloromethane).

Cis-1,2-Dichloroethene (Cis-1,2-DCE)

Cis-1,2-DCE was detected at most EPA wells in each sampling event. The California Primary MCL is 6 µg/L and detections greater than 100 µg/L were reported at wells

MW1A (170 J µg/L, 1Q2009), MW17A (170 J µg/L, 1Q2008), and MW12 (110 µg/L, 3Q2009). The remaining detections were generally less than 40 µg/L.

Cis-1,3-Dichloropropene

Cis-1,3-Dichloropropene was either non-detected or detected at a few wells in each sampling event. The California Primary MCL is 0.5 µg/L and the maximum concentrations were reported at wells MW1A (0.5 J µg/L) and MW8D (0.5 J µg/L) in the 1Q2009 sampling event. There was no detection in the 3Q2009 sampling event.

Dibromochloromethane

Dibromochloromethane was detected at a few wells in 1Q2009 and 3Q2009 sampling events. The maximum concentration was detected at well OW7 (1.2 µg/L, 3Q2009) and was below the EPA Primary MCL of 80 µg/L.

Dichlorodifluoromethane (F12)

Dichlorodifluoromethane (F12) was detected at a few wells in each sampling event. The maximum concentration was reported at well MW15 (2.9 µg/L) in the 1Q2009 sampling event. No detections exceeded the California Notification Level of 1,000 µg/L.

Methylene Chloride

Methylene chloride was detected at a few wells in each sampling event. Maximum concentrations were reported at well OW8A (1,200 BD µg/L) in the 1Q2009 sampling event. Detections greater than 100 µg/L were also reported at wells OW1A (480 J µg/L, 1Q2008) and OW8A (140 µg/L, 1Q2008). Detections at remaining wells were at or below 100 µg/L. Detections exceeding the California Primary MCL (5 µg/L) were reported at wells OW1B (16 µg/L), OW1A (33 J µg/L, 3Q2009), and MW3A (5 J µg/L, Q801).

Trans-1,2-DCE

Trans-1,2-DCE was detected at a few wells in each sampling event. Detections exceeding the California Primary MCL (10 µg/L) were reported at wells MW2 (20 J µg/L, 1Q2008), MW23A (56 J µg/L, 1Q2008), MW23C (53 J µg/L, 1Q2008), MW24A (34 J µg/L, 1Q2008), MW27B (21 J µg/L, 1Q2008), OW1A (11 µg/L, 3Q2009), and OW8A (49 J µg/L, 1Q2009).

Trans-1,3-Dichloropropene

Trans-1,3-Dichloropropene was detected at three wells in the 1Q2009 sampling event. Detections were reported at estimated values of MW1A (0.5 J µg/L), MW8C (0.5 J µg/L), and MW8D (0.5 µg/L). The California Primary MCL is 0.5 µg/L.

Dichlorotrifluoroethane

Dichlorotrifluoroethane was detected at one well in the 1Q2008 sampling event. Detection was reported at well OW1B (4.2 J µg/L) and EPA and California currently do not have a screening level for this compound.

Vinyl Chloride

Vinyl chloride was detected at two or three wells in each sampling event. Detections were reported at MW27 and MW8 cluster wells, with the maximum detection at well MW27A (2.8 µg/L, 3Q2009). The California Primary MCL is 0.5 µg/L.

3.2.1.2 Other Volatile Organic Compounds

1,4-Dioxane was detected at one or more wells in each quarterly sampling event. The California Notification Level is 3 µg/L and the concentrations higher than 1,000 µg/L were reported at wells OW8A (1,000 J µg/L, 1Q2009) and OW9 (1000 µg/L, 1Q2009). Other than OPOG and EPA detections, Phibro-Tech, Inc. has reported concentrations ranging from nondetection to 63 µg/L in the 3Q2009 sampling event (Iris, 2010), former Angeles Chemical Co. has reported concentrations ranging from nondetection to 12,200 µg/L in the 1Q2009 sampling event and to 31,000 µg/L in the 3Q2009 sampling event (Clean Soil Inc., 2009a and 2009b), and McKesson Corporation has reported concentrations ranging from nondetection to 120 µg/L in the 1Q2009 sampling event (Geosyntec, 2009). 1,4-Dioxane plume maps of 1Q2008, 1Q2009, and 3Q2009 are presented in Figures 3-11a, 3-11b, and 3-11c, respectively. The 1,4-Dioxane plume is continuous over OU2.

Nonchlorinated VOCs detected at OU2 include 2-Hexanone, benzene, bromoform, carbon disulfide, ethylbenzene, isopropylbenzene, m,p-Xylenes, methyl cyclohexane, methyl isobutyl ketone, methyl tert-butyl ether (MTBE), o-Xylene, styrene, and toluene. Detections of nonchlorinated VOCs were all below screening levels except benzene at OW1A (6.2 µg/L, 3Q2009) and OW1B (21 J µg/L, 1Q2009). Screening levels for 2-Hexanone and methyl cyclohexane have not been set.

2-Hexanone was only detected at wells MW1A (5 J µg/L), MW8C (5 J µg/L), and MW1D (5 J µg/L) in the 1Q2009 sampling event. No MCL has been established for 2-Hexanone.

Benzene was detected at a few wells in each sampling event. Maximum detections were reported at well OW1B (21 J µg/L, 1Q2009), and another detection that exceeded the California Primary MCL (1 µg/L) was at well OW1A (6.2 µg/L). The remaining detections were all below the California Primary MCL and included MW5, MW8C, MW8D, MW15, MW23A, MW25B, MW26A, MW26B, MW27A, MW27B, and OW3A.

Bromoform was detected from nondetection to trace in a few wells in each sampling event. The maximum concentration was reported at well OW7 (0.99 J µg/L, 1Q2009) and no detections exceeded the EPA Primary MCL of 80 µg/L.

Carbon disulfide was detected at wells MW1A (7.3 J µg/L, 3Q2009), MW8C (0.5 J µg/L, 1Q2009), and MW8D (0.5 J µg/L, 1Q2009). No detections exceeded the California Notification Level of 160 µg/L.

Ethylbenzene was detected at a trace level in the 1Q2009 sampling event. Detections were reported at wells MW1A, MW8C, MW8D and OW1B. The maximum reported concentration was 1.5 J µg/L (well OW1B), which is below the California Primary MCL of 300 µg/L.

Isopropylbenzene was detected at a trace level in the 1Q2009 sampling event. Detections were reported at wells MW1A, MW8C, MW8D and OW1B. The maximum reported concentration was 2.3 J µg/L (well OW1B), which is below the California Notification Level of 770 µg/L.

m,p-Xylene was detected at a trace level in the 1Q2009 sampling event. Detections were reported at wells MW1A, MW8C, MW8D and OW1B. The maximum reported concentration was 1.1 J µg/L (well OW1B), which is below the California Primary MCL of 1,750 µg/L.

Methyl cyclohexane was detected at well MW27A (0.31 J µg/L, 1Q2009), MW27B (1.1 µg/L, 1Q2009), MW1A (0.5 J µg/L, 1Q2009), MW8C (0.5 J µg/L, 1Q2009), MW8D (0.5 J µg/L, 1Q2009), and MW27A (13 µg/L, 3Q2009). No MCL has been established for methyl cyclohexane.

Methyl isobutyl ketone was detected at a trace level in the 1Q2009 sampling event. Detections of 5J µg/L were reported at wells MW1A, MW8C, and MW8D. This is below the California Notification Level of 120 µg/L.

MTBE was detected at trace levels in each sampling event. All detected concentrations were below the California Secondary MCL (13 µg/L). The maximum concentration was reported at well MW30 (3.9 µg/L).

o-Xylene was detected at a trace level in the 1Q2009 sampling event. Detections were reported at wells MW1A, MW8C, MW8D and OW1B. The maximum reported concentration was 1.2 J µg/L (well OW1B), which is below the California Primary MCL of 1,750 µg/L.

Styrene was detected at trace levels in the 1Q2009 sampling event. Detections were reported at wells MW1A, MW8C, and MW8D at a concentration of 1.2 J µg/L for these three wells, which is below the California Primary MCL of 100 µg/L.

Toluene was detected at a few wells in each sampling event. No detections exceeded the California Primary MCL (150 µg/L), and the maximum concentration was reported at well OW1B (38 J µg/L) in the 1Q2009 sampling event. The remaining toluene detections were below 10 µg/L except well OW8A (37 J µg/L, 1Q2009).

3.2.1.3 Ratios of F113 and F11

The ratios of concentrations of F113 and F11 were evaluated to identify indications of potential sources of Freons other than the former Omega facility.

The calculated narrow ratio range seems to be indicative of Omega OU1 being a single source of the two Freons found at OU2. It is noted, though, that because of the limitations of this analysis, only a substantial change in F113/F11 ratio resulting from a substantial release of Freon(s) to groundwater could be detected. The results are summarized below and the limitations of the analysis are discussed in Appendix H.

Both F11 and F113 are stable compounds that do not degrade in groundwater. Their sorption characteristics are similar; furthermore, sorption is not substantial in the sandy aquifer materials present at OU2. These characteristics support the expectation of a (relatively) constant F113/F11 ratio in a plume resulting from a single source at OU2. The ratio of their concentrations would be expected to remain constant in the absence of sampling, analytical, and any other variation.

It can be reasonably expected that the source at Omega OU1 is well-mixed and the Freon ratio at OU1 was fairly uniform over time as a result of the release of mixed waste into soil. If there is another substantial source of either F11 or F113 somewhere at OU2 downgradient from OU1, the ratio of F113/F11 in groundwater is expected to be different downgradient of that source. A source of both F11 and F113 but with a different mix than OU1 would have a similar effect.

Table 3-4 summarizes the statistics for the F113/F11 ratios calculated for each well using the entire historical record (with nondetects [NDs] removed). Wells with insufficient records (for example, MW31, MW30, and MW29) are not included in the table.

The median ratios calculated from historical concentration data are shown in Figure 3-12. The spatial pattern does not indicate clustering or trends in the ratios over OU2. The variability in the ratios may be entirely attributable to the limitations listed in Appendix H.

3.2.2 Quality Assurance/Quality Control

The results for QA samples are tabulated in Appendix E.

3.2.2.1 Ambient and Trip Blanks

The summary tables in Appendix E list only the blank samples with detected compounds.

Ambient blanks are collected to verify that contamination is not introduced to samples during collection, handling, or shipping of the samples. The ambient blanks provide a measure of the contamination of samples during sampling (from the air). Ambient blanks are prepared at a sample collection location, and therefore they also could reveal potential ambient contamination of samples during sampling (from the air) in the field. In ambient blank samples, trace concentrations of chloroform, and methylene chloride were detected in 1Q2008; no VOCs were detected in 1Q2009; and acetone, methylene chloride, toluene, chloromethane, 1,4-dioxane, m,p-xylenes, and o-xylene were detected in 3Q2009.

The purpose of trip blanks is to verify that volatile contamination is not introduced to samples during transportation or through transportation materials. In trip blank samples, trace concentrations of, chloromethane were detected in 1Q2008; chloroform, and PCE were detected in 1Q2009; and no VOCs were detected in 3Q2009.

The validation process qualifies sample results as non-detect based on equipment blank contamination when the concentration of the analyte in the sample is less than five times the amount in the associated equipment blank or 10 times for common laboratory contaminants (e.g., methylene chloride, chloroform, and phthalates). The field blank qualifications do not impact project decisions and do not affect the representativeness. There were no chloromethane results that were qualified due to the contamination detected in the trip blanks collected in 1Q2008. There were no chloroform and PCE results that were qualified due to the contamination detected in the trip blanks collected in 1Q2009.

3.2.2.2 Field Duplicates

The comparison between primary and field duplicate samples shows the repeatability of the sampling results; they are used to document sampling precision.

The comparison results are categorized as disagreement (D) if the results differ by a factor of two or more (factor of three if one result is below the reporting limit), major disagreement (MD) if the results differ by a factor of three or more (factor of five if one result is below the reporting limit), and agreement (A) otherwise.

The collection frequency of field duplicate samples achieved the project goal of 10 percent of the number of field samples. The calculated relative percent difference (RPD) and the field duplicate results are provided in Appendix E. Overall, the analytical data met project

precision criteria listed above and there were no significant biases. Of the 810 pairs of field duplicate results (the number of comparable pairs of results), the RPDs for the following 12 pairs exceeded the evaluation criterion.

For 1Q2008, major disagreements between the primary and duplicate samples were for Freon 11 in the sample from MW1A and trans-1,2-dichloroethene in the sample from MW25A.

For 1Q2009, disagreements between the primary and duplicate samples were for PCE in the sample from MW15, Freon 113 in the sample from MW23C, cis-1,2-DCE in the sample from MW26D, and PCE in the sample from MW8B, and major disagreements between the primary and duplicate samples were for PCE, TCE, Freon 11, Freon 113, bromoform, and 1,1-DCE in the sample from MW26D.

For 3Q2009, a major disagreement between the primary and duplicate samples was for chloromethane in the sample from MW23D.

The exceedances occurred in different wells and during different sampling events. Reporting limits agreed for all analytes that were reported as not detected in pairs of field duplicate samples. Overall, 98 percent of the field duplicate results satisfied the evaluation criteria, indicating acceptable overall sampling and analysis precision. Thus, the evaluation noted no systematic field errors or biases.

3.3 Trend Analysis

Statistical trend analyses were conducted to help in assessing the temporal concentration changes of the various contaminants in groundwater at the Omega Site. All historical concentration measurements taken from the 64 Omega monitoring wells were included in the analysis. All contaminants of concern with sufficient detectable values were included in the trend analysis. Table 3-5 shows the matrix of the trend analysis conducted on concentration data collected from the 64 Omega monitoring wells for 37 detected VOCs. A total of 2,368 well and chemical compound concentration pairs were analyzed. Trends could not be statistically analyzed for 1,833 data pairs mainly because of the presence of nondetects and short monitoring records. Of the 535 monitoring well and chemical compound concentration pairs with sufficient data to perform trend analysis, 119 pairs showed significant decreasing trends, 51 showed significant increasing trends, and the remaining 365 exhibited no significant trend.

Figures 3-13 through 3-20 show the spatial distribution of the trends for selected chemical compounds including PCE, TCE, F11, F113, chloroform, 1,1-DCE, 1,4-dioxane, and cis-1,2 DCE, respectively:

- PCE (Figure 3-13): among the 64 wells, 13 showed an increasing trend, 9 showed a decreasing trend, 38 exhibited no significant trend, and the other 4 had insufficient data. Wells with increasing trend appear randomly distributed in the northern portion of OU2 (upgradient of well cluster MW17); wells with decreasing trend are concentrated in an area downgradient of the Omega facility and upgradient of the former Angeles Chemical Company and former McKesson Corporation (AMK); and wells with no significant trends appear to be randomly scattered throughout OU2.

- TCE (Figure 3-14): among the 64 wells, 12 showed an increasing trend, 10 showed a decreasing trend, 38 exhibited no significant trend, and the other 4 had insufficient data. Both wells with increasing trend and wells with decreasing trend appear randomly distributed in the northern portion of OU2 (upgradient of well cluster MW17); and wells with no significant trends appear to randomly scattered throughout the entire OU2.
- F11 (Figure 3-15): among the 64 wells, 5 showed an increasing trend, 9 showed a decreasing trend, 22 exhibited no significant trend, and the other 28 had insufficient data. Increasing trends were detected at 4 wells situated at two locations away from the Omega Site: MW1A and MW1B, and MW16B and MW25A. OW1B also showed an increasing PCE trend. This well is located on the Omega facility but it is screened in the aquifer unit beneath the water table aquifer. Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to be randomly scattered throughout the entire OU2 area.
- F113 (Figure 3-16): among the 64 wells, 7 showed an increasing trend, 11 showed a decreasing trend, 28 exhibited no significant trend, and the remaining 18 had insufficient data. Increasing trends were detected at three locations away from the Omega Site: MW1A and MW1B, MW8B and MW8C and MW23B, and MW16B and MW25A. Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to be randomly scattered throughout OU2.
- Trichloromethylene (Figure 3-17): among the 64 wells, 6 showed an increasing trend, 7 showed a decreasing trend, 31 exhibited no significant trend, and the other 20 had insufficient data. Increasing trends were detected at several locations away from the Omega Site: MW4C, MW23B, MW16B and MW17B, and one well located on the Omega facility (OW2). Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to be randomly scattered throughout OU2.
- 1,1-DCE (Figure 3-18): among the 64 wells, 5 showed an increasing trend, 8 showed a decreasing trend, 36 exhibited no significant trend, and the other 15 had insufficient data. Increasing trends were detected at several locations away from the Omega Site: MW4C, MW23B, MW16B and MW17B, and one well located on the Omega facility (OW2). Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to be randomly scattered throughout OU2.
- 1,4-DCE (Figure 3-19): among the 64 wells, 3 showed an increasing trend, 10 showed a decreasing trend, 16 exhibited no significant trend, and the other 35 had insufficient data. Increasing trends were detected at three wells located at two locations away from the Omega Site: MW1A and MW1B, and MW4C. Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to randomly scattered throughout OU2.

- cis-1,2-DCE (Figure 3-20): among the 64 wells, none of the wells showed an increasing trend, 9 showed a decreasing trend, 32 exhibited no significant trend, and the other 23 had insufficient data. Wells with decreasing concentrations are concentrated in a relatively small area between the Omega facility and Slauson Avenue. Wells with no significant trends appear to be randomly scattered throughout OU2.

Overall, most compounds show a decreasing trend. A notable exemption is PCE, which shows an increasing trend at 13 wells and decreasing trend at 9 wells. There are only slightly more wells with decreasing than increasing trends for TCE and chloroform (12 and 10, and 7 and 6, respectively).

In general, a decreasing trend was observed for the majority of contaminants (except PCE, which showed an increasing trend at some locations) at the wells located in the close vicinity of and immediately downgradient of the Omega facility, including the following:

- MW2 has decreasing trends for seventeen chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- MW5 has decreasing trends for sixteen chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- MW4B has decreasing trends for twelve chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- MW15 has decreasing trends for eleven chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- OW6 has decreasing trends for eight chemical compounds including TCE, F11, F113, 1,1-DCE and 1,4-dioxane; PCE concentration has been relatively stable and showed no significant trend
- OW1A has decreasing trends for seven chemical compounds including F11, F113, 1,1-DCE and 1,4-dioxane; TCE concentration has been relatively stable and showed no significant trend; PCE is the only chemical compound that showed an increasing trend
- OW4A has decreasing trends for six chemical compounds including F11, F113, 1,1-DCE and 1,4-dioxane; TCE concentration has been relatively stable and showed no significant trend; PCE is the only chemical compound that showed an increasing trend
- OW3A has decreasing trends for five chemical compounds including F11, F113, 1,1-DCE and 1,4-dioxane; TCE and 1,4-dioxane concentrations have been relatively stable and showed no significant trends; PCE is the only chemical compound that showed an increasing trend
- OW8A has decreasing trends for five chemical compounds including F11, F113, 1,1-DCE and 1,4-dioxane; PCE, TCE, and 1,4-dioxane concentrations have been relatively stable and showed no significant trends

Increasing concentration trends were observed at several monitoring wells, most of which are located downgradient of the wells with decreasing trends and at locations closer to the AMK facilities:

- MW16B has increasing trends for six chemical compounds including PCE, TCE, F11, F113, and 1,1-DCE; no significant trend was observed for 1,4-dioxane
- MW1A has increasing trends for six chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- MW1B has increasing trends for six chemical compounds including PCE, TCE, F11, F113, 1,1-DCE, and 1,4-dioxane
- MW4C has increasing trends for five chemical compounds including PCE, TCE, 1,4-dioxane and 1,1-DCE; F11 and F113 showed no significant concentration trend
- MW25A has increasing trends for four chemical compounds including PCE, 1,1-DCE, F11 and F113; TCE showed no significant concentration trend and 1,4-dioxane data are not sufficient for trend analysis at this well
- MW8B has increasing trends for three chemical compounds including PCE, TCE, and F113; 1,1-DCE showed no significant concentration trend and 1,4-dioxane and F11 data are not sufficient for trend analyses at this well
- MW8C has increasing trends for three chemical compounds including PCE, TCE, and F113; 1,1-DCE showed no significant concentration trend and 1,4-dioxane and F11 data are not sufficient for trend analyses at this well
- MW8D has increasing trends for PCE and TCE; F113, F11, and 1,1-DCE showed no significant concentration trend and 1,4-dioxane does not have sufficient data for trend analyses at this well
- MW9A has increasing trends for PCE and TCE; F113, F11, and 1,1-DCE showed no significant concentration trend and 1,4-dioxane does not have sufficient data for trend analyses at this well

Wells situated in the southern portion of OU2 generally showed no significant concentration trend; these wells include well cluster MW17, MW20, MW26, and MW27, and monitoring wells MW29 and MW30. It is noted that these wells generally have shorter monitoring records than wells located in the northern portion of OU2, and future monitoring may reveal temporal concentration trends at these wells.

The trend analysis leads to the following interpretations:

- PCE showed increasing trend at multiple locations, including the Omega Site and other facilities, suggesting that the mass of PCE in groundwater at OU2 is increasing and/or moving with groundwater flow. TCE trends are similar although less pronounced.
- F11 and F113, in contrast to PCE and TCE, showed decreasing trend near the Omega facility and increasing trend downgradient of the wells, with decreasing trend between Slauson Avenue and AMK. These trends may suggest that there is currently no substantial release of Freons into the aquifer at OU1. The center of the mass of the Freon plume may currently be at the locations where the Freon concentrations are increasing.
- cis-1,2-DCE showed decreasing trend at all locations, suggesting degradation of PCE and TCE is not significant at OU2.

- Although MW23D data were not sufficient for statistical trend analysis or they resulted in no significant trend, visual inspection of the time series charts shows increasing apparent trends for most detected compounds. Such increasing trends at MW23D would be significant, suggesting that downward migration of contamination into the deeper aquifer units is currently occurring.

4. Summary of Findings

The following summarizes the major findings from the three sampling events conducted in 1Q2008, 1Q2009, and 3Q2009:

4.1 Groundwater Flow

- Depth to water measurements were collected at the OPOG and EPA monitoring wells during the three sampling events to calculate the water level elevations at these monitoring wells. Hydrographs of the OPOG and the EPA wells were prepared to reveal the temporal water level variations at the Omega Site. The hydrographs of these monitoring wells indicate that water levels at the Omega Site generally decreased between 2002 and 2004, followed by a fairly quick recovery in the first half of 2005 in response to high precipitation that year, then remained relatively constant during the period between mid-2005 and mid-2007, and declined again after mid- 2007. The water levels declined during the reporting period of 2008-2009.
- Vertical gradients were calculated at locations where wells screened in different depth intervals are collocated. Downward vertical gradients were observed at all but one location during the reporting period of 2008-2009.
- Water table contour maps were prepared for the three sampling events using the water levels measured at the water table wells. In addition, horizontal groundwater gradients were calculated at three locations to show the spatial variations in the shallow groundwater flow regime at the Omega Site. Although the horizontal gradients changed over time, the general shallow groundwater flow regime remained constant, as indicated by the similarities among the groundwater contours for the three sampling events.

4.2 VOC Detections

- PCE was detected at most monitoring wells at concentrations above the California Primary MCL of 5 μg/L in each sampling event. PCE concentrations over 1,000 μg/L were reported for wells OW1A (240,000 μg/L in 3Q2009), OW2 (4,000 μg/L in 1Q2009), OW3A (3,200 μg/L in 3Q2009), OW5 (1,400 μg/L in 1Q2008), and OW8A (33,000 μg/L in 1Q2009).
- TCE was detected at most monitoring wells at concentrations above the California Primary MCL of 5 μg/L in each sampling event. TCE concentrations over 1,000 μg/L were reported for wells OW1A (3,300 μg/L in 1Q2008) and OW8A (1,400 μg/L in 1Q2008), OW9 (1,200 μg/L in 1Q2009), and MW31 (1,000 μg/L in 3Q2009).
- F11 was detected at a few wells in each sampling event. Detections above the California Primary MCL (150 μg/L) were reported for wells OW2 (190 μg/L in 1Q2008), OW5 (180 μg/L in 1Q2008), OW8A (360 μg/L in 1Q2008), OW9 (280 μg/L in 1Q2009), MW1A

(150 μg/L in 1Q2009 & 3Q2009), MW5 (210 μg/L in 1Q2008), MW14 (150 μg/L in 1Q2008), MW15 (370 μg/L in 1Q2008), MW23A (170 μg/L in 1Q2008), and MW23C (160 μg/L in 3Q2009).

- F113 was detected in samples from a few wells in each sampling event. Detections over 500 μg/L were reported for wells OW2 (1,100 μg/L in 1Q2009), OW5 (540 μg/L in 1Q2008), OW9 (930 μg/L in 1Q2008), MW5 (580 μg/L in 1Q2008), MW15 (1,000 μg/L in 1Q2008), and MW23A (750 μg/L in 1Q2008).
- Cis-1,2-DCE was detected at most wells in each sampling event. The California Primary MCL is 6 μg/L and detections greater than 100 μg/L were reported at wells MW1A (170 J μg/L in 1Q2009), MW17A (170 J μg/L in 1Q2008), and MW12 (110 μg/L in 3Q2009). The remaining detections were generally less than 40 μg/L.
- 1,1-DCE was detected at most wells in each sampling event, generally at concentrations above the California Primary MCL (6 μg/L). 1,1-DCE concentrations over 500 μg/L were reported for wells OW9 (1,600 μg/L in 3Q2009), OW8A (750 μg/L in 1Q2009), OW1A (730 μg/L in 1Q2008), OW3A (600 μg/L in 3Q2009), and OW2 (550 μg/L in 1Q2009).
- 1,1-DCA was detected at more than 20 wells in each sampling event. The California Primary MCL for 1,1-DCA is 5 μg/L and the maximum concentrations were detected at well MW17A (100 μg/L in 1Q2008), well OW8A (74J μg/L in 1Q2009), and well OW9 (46J μg/L in 3Q2009).
- Chloroform was detected at most wells in each sampling event. Chloroform concentrations over 100 μg/L were reported for well OW9 (1,100 μg/L in 3Q2009 and 1Q2009), OW8A (770 μg/L in 1Q2009), MW1A (210 μg/L in 3Q2009), and OW5 (120 μg/L in 1Q2008). These values exceed the EPA Primary MCL of 80 μg/L, which applies to total trihalomethanes (these include bromoform, bromodichloromethane, chloroform, and dibromochloromethane).
- Other chemical compounds were detected at only a few monitoring wells, with generally lower concentrations.

4.3 Plume Extent for Main Contaminants

- For each sampling event, plume maps were prepared for PCE, TCE, F11, F113, 1,4-dioxane, and 1,2-DCA to show the lateral extent of contamination at the Omega Site for these chemical compounds.
- The PCE plume is continuous over OU2. The distribution of PCE for these three quarters remained generally the same. PCE concentrations greater than 5 μg/L extend west-southwest downgradient from the former Omega Chemical property to near EPA Well MW29. Concentrations exceeding 500 μg/L are associated with the Omega property and with another source area identified as the former Angeles Chemical Company and the former McKesson Chemical properties.

- The TCE plume is continuous over OU2. The distribution of TCE for these three quarters generally remained the same and is similar to the distribution of PCE.
- The Freon plumes are continuous over OU2. The distribution of F113 is similar to the distribution of F11.
- The distributions of 1,2-DCA were similar for the three sampling events. The 1,2-DCA plume is narrow and follows the main contaminant transport pathway from the former Omega Chemical property; the plume is collocated with the zone of high PCE and TCE concentrations. The plume appeared to be continuous over OU2 in 2008. In 2009, 1,2-DCA concentrations declined in the area between MW23 and OW9 to nondetect levels.
- The distributions of 1,4-dioxane were similar for the three sampling events. The plume appears to be continuous over OU2 but covers a smaller extent than PCE or TCE.

4.4 Freon Ratios

- The ratios of concentrations of F113 and F11 were evaluated to identify indications of potential sources of Freons other than the former Omega facility. The ratios fall within a narrow range of 1.1 to 4.1 with a few exceptions. The narrow ratio range of the Freon ratios is not indicative of another source of Freon contamination that is significantly different from that of the former Omega property. However, it is noted that because of the limitations of this analysis, only a substantial change in the F113/F11 ratio resulting from a substantial release of Freon(s) to groundwater could have been distinguished.

4.5 Temporal Concentration Trends

Statistical trend analyses were conducted to help in assessing the temporal concentration changes of the various contaminants in groundwater at the Omega Site, with the following findings:

- In general, a decreasing trend was observed for the majority of contaminants (except PCE, which showed increasing trend at some locations) at the wells located in the vicinity of and immediately downgradient of the Omega facility.
- Increasing VOC concentration trends were observed at several monitoring wells, most of which are located downgradient of the wells with decreasing trends, and at locations closer to the former Angeles Chemical Company and the former McKesson Chemical properties.
- Wells situated in the southern portion of OU2 generally showed no significant VOC concentration trend. It is noted, however, that these wells generally have shorter monitoring records than wells located in the northern portion of OU2, which affects the trend determination.
- PCE showed increasing trend at multiple locations, including the Omega Site and other facilities. TCE trends are similar although less pronounced.

- F11 and F113, in contrast to PCE and TCE, showed decreasing trend near the Omega facility and increasing trend downgradient of the wells with decreasing trend (between Slauson Avenue and AMK). These trends may suggest that there is currently no substantial release of Freons into the aquifer at OU1. The center of the mass of the Freon plume may currently be at the locations where the Freon concentrations are increasing.
- Although MW23D data were not sufficient for statistical trend analysis, or they resulted in no significant trend, visual inspection of the time series charts shows increasing apparent trends for most detected compounds. Such increasing trends at MW23D would be significant, suggesting that downward vertical migration of the contamination into the deeper aquifer units is currently occurring.

4.6 Other Facility-Specific Data

- Efforts were made to obtain analytical data from other facilities located within the Omega OU2 area. PCE and TCE were detected at the following facilities: Techni Braze, Inc. (PCE up to 6,100 µg/L, TCE up to 150 µg/L in 3Q2008), Pilot Chemical Company (PCE up to 140 µg/L, TCE up to 89 µg/L in 2009), Phibro-Tech, Inc. (PCE up to 130 µg/L, TCE up to 98 µg/L in 3Q2009), Site C (PCE up to 110 µg/L, TCE up to 85 µg/L in 2007), Mission Linen Supply (PCE up to 460, TCE up to 11 µg/L in 1Q2009), the former Angeles Chemical Co. (PCE up to 344 µg/L, TCE up 305 µg/L in 1Q2009), and the former McKesson facility (PCE up to 1,100 µg/L, TCE up to 820 µg/L in 1Q2009).
- F11 was detected at Phibro-Tech, Inc. (up to 16 µg/L in 3Q2009), and the former McKesson facility (up to 84 µg/L in 1Q2009); F113 was also detected at Phibro-Tech, Inc. (up to 34 µg/L in 3Q2009).
- 1,2-DCA was detected at the following facilities: Techni Braze, Inc. (up to 0.64 µg/L in 3Q2008), Pilot Chemical Company (up to 500 µg/L in 2009), Phibro-Tech, Inc. (up to 19 µg/L in 3Q2009), Site C (up to 26 µg/L in 2007), the former Angeles Chemical Co. (up 2.8 µg/L in 1Q2009), and the former McKesson facility (up to 5300 µg/L in 1Q2009).
- 1,4-DCE was detected at Phibro-Tech, Inc. (up to 63 µg/L in 3Q2009), the former Angeles Chemical Co. (up 12,200 µg/L in 1Q2009) and the former McKesson facility (up to 120 µg/L in 1Q2009).

5. Recommendations

CH2M HILL recommends the following actions in 2010:

- Continue sampling for VOCs, including 1,4-dioxane. Sample EPA wells every first and third quarter concurrently with OPOG sampling. Collect split samples only from OPOG wells. It is assumed that OPOG will provide EPA with the analytical results for their well sampling.
- The 2010 annual report should include plume maps for the same compounds as this report, temporal trends and trend maps, and Freon ratio analysis.
- The interpretation of Freon ratios should be discontinued if the results for 2010 are inconclusive.
- Future reports should evaluate the distribution of the PCE/TCE concentration ratio, which could be indicative of different sources of contamination, and the ratios of PCE and its daughter products, which could be indicative of degradation.
- Existing (remaining) former Oil Field Reclamation Project (OFRP) wells should be sampled and water levels measured.
- Former CENCO refinery (CENCO) wells MW101, MW105, MW201, MW603, MW605, and MW606 should be split-sampled, or analysis for F113 should be requested for these wells.
- Analytical results and water levels from groundwater monitoring at Ashland, CENCO, Waste Disposal, Inc. (WDI), McKesson Chemical, Angeles Chemical Company, Phibro-Tech, Inc., Techni Braze, Inc., Pilot Chemical Company, Foss Plating, Mission Linen, Site B, Site C, Site I, Site J, Site K, and water levels for Golden West Refinery should be obtained through interagency data sharing and included in future monitoring reports.
- Installation of deeper wells at well clusters MW8, MW23, and MW27 that started showing VOC detections at the deepest screen interval and also near the toe of the plume should be considered.
- Installation of deep cluster wells upgradient of the production wells identified in the RI report as possibly affected by the OU2 plume should be considered.

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Tables

TABLE 1-1
Omega Well Construction Details
Omega Chemical Superfund Site

Well ID	X Coordinate (meters)	Y Coordinate (meters)	Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Screen Top (feet bgs)	Depth to Screen Bottom (feet bgs)	Total Depth (feet bgs)	Total Depth Drilled (feet bgs)	Borehole Diameter (inches)	Casing Diameter (inches)	Screen Material	Screen Slot Size (inches)	Casing Material	Filter Pack Grade	Filter Pack Top (feet bgs)	Filter Pack Bottom (feet bgs)	Drilling Method	Annular Seal Material	Annular Seal Top (feet bgs)	Annular Seal Bottom (feet bgs)
OW1A	403554.4000	3759242.1000	209.99	212.50	63	77.5	77.5	80	10	4	SST	0.02	SCH40 PVC	2/12	59	78	hollow stem auger	neat slurry	3.5	56.2
OW1B	403542.8490	3759236.7550	207.37	207.18	110	120	120	130	10	4	SST	0.02	Mild Steel	2/12	99	130	hollow stem auger	95/5 slurry bentonite pellets	0 96	96 99
OW2	403461.2000	3759246.6000	203.24	202.30	60	80	80	85	10	4	SST	0.02	Mild Steel	2/12	55	85	hollow stem auger	95/5 slurry bentonite pellets	0 50	50 55
OW3A	403503.4000	3759170.1000	199.08	198.53	63	83	83	85	10	4	SST	0.02	Mild Steel	2/12	58	85	hollow stem auger	95/5 slurry bentonite pellets	0 53	53 58
OW3B*	403522.0000	3759148.0000	197.77	197.06	112	122	122	139	10	4	SST	0.01	SCH40 PVC	2/12	106	126	mud rotary	95/5 slurry bentonite chips #30 transition sand	0 99 105	99 105 107
OW4A	403320.6000	3759071.9000	184.93	184.67	49.8	69.8	69.8	80	10	4	SST	0.02	Mild Steel	2/12	47.7	75.7	hollow stem auger	95/5 slurry bentonite pellets	2 42.5	42.5 47.7
OW4B	403317.0360	3759072.3480	184.95	184.50	112	122.3	122.3	132	10	4	SST	0.02	Mild Steel	2/12	109.5	132	hollow stem auger	95/5 slurry bentonite pellets	2 105	105 109.5
OW5	402744.6000	3758929.8000	154.88	154.16	30	50	50	52	10	4	SST	0.02	SCH40 PVC	2/12	25	51	hollow stem auger	95/5 slurry bentonite	0 20	20 25
OW6	403207.7000	3758942.3000	173.14	172.74	38	58	58	61.5	10	4	SST	0.02	Mild Steel	2/12	36	59	hollow stem auger	95/5 slurry bentonite chips	2 30.5	30.5 36
OW7	403600.4000	3759301.6000	215.54	214.21	70.9	90.9	90.9	92	10	4	SST	0.02	Mild Steel	2/12	65	92.5	hollow stem auger	95/5 slurry bentonite pellets	2 60.6	60.6 65
OW8A	403481.6370	3759209.4910	201.20	200.64	60.4	80	80	81	10	4	SST	0.02	Mild Steel	2/12	55	81	hollow stem auger	95/5 slurry bentonite pellets	2 51	51 55
OW8B	403480.0430	3759212.7890	201.43	200.82	116	126	126	143	10	4	SST	0.01	SCH40 PVC	2/12	111.3	128	mud rotary	95/5 slurry	2	110
MW1A	402749.8678	3759022.8370	157.81	157.71	45	60	60	60	10	4	SCH40 PVC	0.02	SCH40 PVC	3	41.5	60	hollow stem auger	95/5 slurry medium chips	1 35	35 42
MW1B	402749.9621	3759020.3187	158.10	158.05	75	85.4	85.4	95	10	4	SCH40 PVC	0.02	SCH40 PVC	3	72	86	hollow stem auger	95/5 slurry bentonite pellets	1 67	67 72
MW2	402799.4810	3758870.1561	154.24	154.21	45	60	60	60	10	4	SCH40 PVC	0.02	SCH40 PVC	3	42.5	60	hollow stem auger	95/5 slurry bentonite pellets	1 38	38 42
MW3	402931.5361	3758376.4901	151.86	151.48	38	48	48	51.3	10	4	SCH40 PVC	0.02	SCH40 PVC	3	35.5	48	hollow stem auger	95/5 slurry bentonite chips	1 32	32 36
MW4A	402537.1475	3758403.1393	147.02	146.80	42.7	53	53	53	10	4	SCH40 PVC	0.02	SCH40 PVC	3	38.5	53	hollow stem auger	95/5 slurry bentonite chips	1 36	36 38.5
MW4B	402539.6698	3758404.8988	147.00	146.84	69.7	80	80	125	10	2	SCH40 PVC	0.02	SCH40 PVC	3	67	80	mud rotary	95/5 slurry bentonite chips/pellets	1 61.5	61.5 67
MW4C	402539.8674	3758404.7150	147.39	147.10	88.7	99	99	125	10	2	SCH40 PVC	0.02	SCH40 PVC	3	85	99.5	mud rotary	bentonite pellets	80	85
MW5	402519.7145	3758707.9616	150.84	150.60	43.3	53.3	53.3	53	10	4	SCH40 PVC	10.00	SCH40 PVC	3	40.5	53.3	hollow stem auger	95/5 slurry bentonite chips	1 34	34 40.5
MW6	402213.7998	3758823.5521	150.39	150.28	37.1	47.5	47.5	47.5	10	4	SCH40 PVC	0.02	SCH40 PVC	3	35	47.5	hollow stem auger	95/5 slurry bentonite pellets	1 32	32 35
MW7	402772.1185	3757891.0470	143.59	143.28	35.8	46	46	46	10	4	SCH40 PVC	0.02	SCH40 PVC	3	31	46	hollow stem auger	95/5 slurry bentonite chips	1 28	28 31
MW8A	402025.0430	3758460.7972	150.44	150.14	30	45	45	45	10	4	SCH40 PVC	0.02	SCH40 PVC	3	27	45	hollow stem auger	95/5 slurry bentonite chips	1 22	22 27

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Omega Chemical Superfund Site

Well ID	X Coordinate (meters)	Y Coordinate (meters)	Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Screen Top (feet bgs)	Depth to Screen Bottom (feet bgs)	Total Depth (feet bgs)	Total Depth Drilled (feet bgs)	Borehole Diameter (inches)	Casing Diameter (inches)	Screen Material	Screen Slot Size (inches)	Casing Material	Filter Pack Grade	Filter Pack Top (feet bgs)	Filter Pack Bottom (feet bgs)	Drilling Method	Annular Seal Material	Annular Seal Top (feet bgs)	Annular Seal Bottom (feet bgs)
MW8B	402028.6156	3758457.7772	150.33	150.03	65	75	75	93	10	2	SCH40 PVC	0.02	SCH40 PVC	3	63	75	hollow stem auger	95/5 slurry bentonite pellets	1 59	59 63
MW8C	402028.4773	3758457.8119	150.33	150.03	86.7	91.7	91.7	93	10	2	SCH40 PVC	0.02	SCH40 PVC	3	84	93	hollow stem auger	bentonite pellets	75	83.5
MW8D	402021.5454	3758462.1309	150.09	149.91	110	120	120	150	10	4	SCH40 PVC	0.02	SCH40 PVC	3	108	122.5	mud rotary	95/5 slurry bentonite pellets	1 103	103 108
MW9A	401709.5798	3758510.4304	148.88	148.84	25	35	35	90	10	4	SCH40 PVC	0.02	SCH40 PVC	3	23	35	hollow stem auger	95/5 slurry bentonite chips	1 18	18 23
MW9B	401711.8963	3758510.1513	149.06	148.90	49.8	60	60	65	10	4	SCH40 PVC	0.02	SCH40 PVC	3	47	65	hollow stem auger	95/5 slurry bentonite pellets	1 44	44 47
MW10	402019.5356	3757645.7219	147.40	147.45	52	62	62	65	10	4	SCH40 PVC	0.02	SCH40 PVC	3	49	65	hollow stem auger	95/5 slurry bentonite pellets	1 45	45 49
MW11	402265.9120	3757445.4058	150.94	150.89	40	50	50	55	10	4	SCH40 PVC	0.02	SCH40 PVC	3	38	55	hollow stem auger	95/5 slurry bentonite chips	1 31	31 37
MW12	403349.1800	3759544.0500	220.53	220.87	82	97	102.18	102	6	2	SCH80 PVC	0.01	SCH80 PVC	30	80	102	sonic	95/5 slurry	1	80
MW13A	403429.2800	3759304.2900	206.33	206.02	56	66	72.2	71	10	2	SCH80 PVC	0.02	SCH80 PVC	2/16	54	69	mud rotary	95/5 slurry medium chips	1 52	52 54
MW13B	403429.2800	3759304.2900	206.33	205.88	123	133	138.4	138	10	2	SCH80 PVC	0.02	SCH80 PVC	2/16	121	139	mud rotary	medium chips 1:1 medium chips	69 71 119	71 119 121
MW14	403113.1900	3759053.8700	172.97	172.63	60	75	79.91	80	6	2	SCH80 PVC	0.02	SCH80 PVC	2/12	57	80	sonic	95/5 slurry medium chips	1 55	55 57
MW15	402532.6800	3758539.7300	148.65	148.28	50	70	74.95	75	6	2	SCH80 PVC	0.01	SCH80 PVC	2/12	48	75	sonic	95/5 slurry medium chips	1 46	46 48
MW16A	401492.7800	3757951.1300	153.47	153.19	45	60	65.93	65	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	43	60	mud rotary	95/5 slurry medium chips	1 40	40 43
MW16B	401492.7800	3757951.1300	153.47	153.19	106	116	120.19	121	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	104	118	mud rotary	1:1 medium chips	65 102	102 104
MW16C	401492.7800	3757951.1300	153.47	153.26	149	164	169.7	169	8.75	2	SCH80 PVC	0.02	SCH80 PVC	3	147	169	mud rotary	medium chips 1:1 medium chips	118 121 145	121 145 147
MW17A	401264.1800	3757463.4200	159.40	159.03	56	71	75.67	76	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	54	73	mud rotary	95/5 slurry medium chips	1 52	52 54
MW17B	401264.1800	3757463.4200	159.40	158.90	94	104	109.7	109	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	92	107	mud rotary	medium chips 1:1 medium chips	73 76 90	76 90 92
MW17C	401264.1800	3757463.4200	159.40	159.00	172	182	187.15	187	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	170	190	mud rotary	medium chips 1:1 medium chips	107 109 168	109 168 170
MW18A	402590.5500	3757631.0500	144.32	143.73	56	71	75.95	76	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	54	76	mud rotary	95/5 slurry medium chips	1 52	52 54
MW18B	402590.5500	3757631.0500	144.32	143.83	90	100	105.47	105	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	88	103	mud rotary	1:1 medium chips	76 86	86 88
MW18C	402590.5500	3757631.0500	144.32	143.83	146	161	166.6	166	8.75	2	SCH80 PVC	0.02	SCH80 PVC	2/16	144	164	mud rotary	medium chips 1:1 medium chips	103 105 142	105 142 144
MW19	401687.0600	3756760.8500	159.01	158.73	56	71	74.8	76	6	2	SCH80 PVC	0.02	SCH80 PVC	2/16	54	76	sonic	95/5 slurry medium chips	1 52	51 54
MW20A	400670.8400	3756601.7200	142.07	141.31	75	90	94.7	95	10	2	SCH80 PVC	0.02	SCH80 PVC	2/12	73	87	mud rotary	95/5 slurry medium chips	1 70	70 73

TABLE 1-1
Omega Well Construction Details
Omega Chemical Superfund Site

Well ID	X Coordinate (meters)	Y Coordinate (meters)	Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Screen Top (feet bgs)	Depth to Screen Bottom (feet bgs)	Total Depth (feet bgs)	Total Depth Drilled (feet bgs)	Borehole Diameter (inches)	Casing Diameter (inches)	Screen Material	Screen Slot Size (inches)	Casing Material	Filter Pack Grade	Filter Pack Top (feet bgs)	Filter Pack Bottom (feet bgs)	Drilling Method	Annular Seal Material	Annular Seal Top (feet bgs)	Annular Seal Bottom (feet bgs)
MW20B	400670.8400	3756601.7200	142.07	141.32	122	132	137.7	137	10	2	SCH80 PVC	0.02	SCH80 PVC	2/12	120	137	mud rotary	medium chips 1:1 medium chips	87 89 118	89 118 120
MW20C	400670.8400	3756601.7200	142.07	141.35	180	190	195.2	195	10	2	SCH80 PVC	0.02	SCH80 PVC	2/12	178	196	mud rotary	medium chips 1:1 medium chips	132 134 176	134 176 178
MW21	400223.2600	3756893.9900	129.27	128.81	64	79	84.8	84	6	2	SCH80 PVC	0.02	SCH80 PVC	2/16	61	83	sonic	95/5 slurry medium chips	1 59	59 61
MW22	400466.1900	3757381.9000	151.47	150.82	74	89	93.83	94	6	2	SCH80 PVC	0.02	SCH80 PVC	2/16	71	94	sonic	95/5 slurry medium chips	1 68	68 71
MW23A	402207.2296	3758346.3553	149.07	148.76	35	55	60.00	62	8	4	SCH80 PVC	0.02	SCH80 PVC	3	32	62	sonic	95/5 slurry medium chips	1 26	26 32
MW23B	402203.7800	3758349.1800	149.36	149.06	82	97	101.6	102	10	2	SCH80 PVC	0.02	SCH80 PVC	2/16	86	99	mud rotary	95/5 slurry transitional sand	1 85	85 86
MW23C	402203.7800	3758349.1800	149.36	149.07	145	160	164.55	165	10	2	SCH80 PVC	0.02	SCH80 PVC	2/16	143	162	mud rotary	medium chips 1:1 transitional sand	99 102 142	102 142 143
MW23D	402203.7800	3758349.1800	149.36	148.04	175	185	189.8	190	10	2	SCH80 PVC	0.02	SCH80 PVC	2/16	173	190	mud rotary	medium chips 1:1 transitional sand	161 164 171	164 171 173
MW24A	402993.5009	3758908.7331	162.44	162.04	50	70	75	200	16	4	SCH80 PVC	0.02	SCH80 PVC	3	47	75	mud rotary	95/5 slurry medium chips	1 40	40 47
MW24B	402993.3534	3758908.7679	162.44	162.03	110	125	130	200	16	2	SCH80 PVC	0.02	SCH80 PVC	3	107	130	mud rotary	1:1 medium chips	75 100	100 107
MW24C	402993.4479	3758908.9665	162.44	162.02	140	160	165	200	16	4	SCH80 PVC	0.02	SCH80 PVC	3	137	163	mud rotary	medium chips	130	137
MW24D	402993.5391	3758908.8547	162.44	162.05	173	178	183	200	16	2	SCH80 PVC	0.02	SCH80 PVC	3	170	185	mud rotary	medium chips	163	170
MW25A	401814.5784	3757890.5951	148.25	147.90	45	65	70	220	14.5	4	SCH80 PVC	0.02	SCH80 PVC	3	41	71	mud rotary	95/5 slurry medium chips	1 35	35 41
MW25B	401814.5418	3757890.6288	148.25	147.84	90	110	115	220	14.5	2	SCH80 PVC	0.02	SCH80 PVC	3	85	116	mud rotary	1:1 medium chips	71 80	80 85
MW25C	401814.5418	3757890.6288	148.25	147.86	140	150	155	220	14.5	4	SCH80 PVC	0.02	SCH80 PVC	3	135	156	mud rotary	1:1 medium chips	116 130	130 135
MW25D	401814.5418	3757890.6288	148.25	147.87	194	209	214	220	14.5	2	SCH80 PVC	0.02	SCH80 PVC	3	189	220	mud rotary	1:1 medium chips	156 184	184 189
MW26A	401270.0608	3757125.1557	155.98	155.62	70	90	95	250	14.5	4	SCH80 PVC	0.02	SCH80 PVC	3	65	93	mud rotary	95/5 slurry medium chips	1 57	57 65
MW26B	401269.9123	3757125.0907	155.98	155.45	105	120	125	250	14.5	2	SCH80 PVC	0.02	SCH80 PVC	3	100	126.5	mud rotary	medium chips	93	100
MW26C	401270.0435	3757125.2668	155.98	155.41	145	160	165	250	14.5	2	SCH80 PVC	0.02	SCH80 PVC	3	140	166	mud rotary	1:1 medium chips	126.5 135	135 140
MW26D	401269.9045	3757125.2349	155.98	155.37	185	205	210	250	14.5	2	SCH80 PVC	0.02	SCH80 PVC	3	180	212	mud rotary	1:1 medium chips	166 175	175 180
MW27A	400902.9714	3755901.7834	139.47	139.24	90	110	115	225	14.5	4	SCH80 PVC	0.02	SCH80 PVC	2/12	87	115	mud rotary	95/5 slurry medium chips	1 78	78 87
MW27B	400903.0537	3755901.6938	139.47	139.18	144	164	169	225	14.5	4	SCH80 PVC	0.02	SCH80 PVC	2/12	141	168	mud rotary	1:1 medium chips	115 130	130 141
MW27C	400902.8870	3755901.6623	139.47	139.17	180	190	195	225	14.5	2	SCH80 PVC	0.02	SCH80 PVC	2/12	177	193	mud rotary	medium chips	168	177

TABLE 1-1
Omega Well Construction Details
Omega Chemical Superfund Site

Well ID	X Coordinate (meters)	Y Coordinate (meters)	Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Screen Top (feet bgs)	Depth to Screen Bottom (feet bgs)	Total Depth (feet bgs)	Total Depth Drilled (feet bgs)	Borehole Diameter (inches)	Casing Diameter (inches)	Screen Material	Screen Slot Size (inches)	Casing Material	Filter Pack Grade	Filter Pack Top (feet bgs)	Filter Pack Bottom (feet bgs)	Drilling Method	Annular Seal Material	Annular Seal Top (feet bgs)	Annular Seal Bottom (feet bgs)
MW27D	400902.9879	3755901.5947	139.47	139.13	200	210	215	225	14.5	2	SCH80 PVC	0.02	SCH80 PVC	2/12	197	225	mud rotary	medium chips	193	197
MW28	400066.1942	3755133.6448	120.40	119.91	85	105	110	112	8	4	SCH80 PVC	0.02	SCH80 PVC	3	80	112	sonic	95/5 slurry medium chips	1 74	74 80
MW29	400888.7643	3753618.8894	107.34	107.10	90	110	115	117	8	4	SCH80 PVC	0.02	SCH80 PVC	3	87	117	sonic	95/5 slurry medium chips	1 80	80 87
MW30	401820.1912	3753277.4081	107.24	106.70	95	115	120	130	8	4	SCH80 PVC	0.02	SCH80 PVC	3	91	120	sonic	95/5 slurry medium chips medium chips	1 85 120	85 91 130
MW31	403391.2061	3759680.342	233.00	232.67	106	121	126	126	8	2	SCH80 PVC	0.01	SCH80 PVC	2/16	103	126	hollow stem auger	95/5 slurry bentonite chips #60 transition sand	1 99.5 102.6	99.5 102.6 103
EW1	402022.7900	3758460.3700	150.02	149.51	65	75	80	80	8.75	4	SCH80 PVC	0.02	SCH80 PVC	2/12	63	78	mud rotary	95/5 slurry medium chips	1 60	60 63

Notes:
* Survey information for OW3B is not currently available. Coordinates are approximate.
X and Y coordinates surveyed in UTM meters, NAD 83, Zone 11
Surface and TOC elevations surveyed in NGVD 88 datum, benchmark of DYHS (Downey High School)

Abbreviations:
amsl = above mean sea level
bgs = below ground surface
SCH = schedule
PVC = polyvinyl chloride
SST = stainless steel
TOC = top of casing

TABLE 3-1

OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
MW1A	45-60	08/19/02	33.74	157.71	123.97	Weston
		11/18/02	35.65	157.71	122.06	Weston
		02/26/03	34.68	157.71	123.03	Weston
		05/21/03	32.33	157.71	125.38	Weston
		03/04/04	39.04	157.71	118.67	CH2M HILL
		06/23/04	39.77	157.71	117.94	CH2M HILL
		09/14/04	41.02	157.71	116.69	CH2M HILL
		12/07/04	42.65	157.71	115.06	CH2M HILL
		03/02/05	41.88	157.71	115.83	CH2M HILL
		06/21/05	34.91	157.71	122.80	CH2M HILL
		09/01/05	33.36	157.71	124.35	CH2M HILL
		03/08/06	33.84	157.71	123.87	CH2M HILL
		05/23/06	32.51	157.71	125.20	CH2M HILL
		09/08/06	33.08	157.71	124.63	CH2M HILL
		03/07/07	33.84	157.71	123.87	CH2M HILL
		07/25/07	33.55	157.71	124.16	CH2M HILL
		02/26/08	38.46	157.71	119.25	CH2M HILL
		03/04/09	44.32	157.71	113.39	CH2M HILL
		09/11/09	46.70	157.71	111.01	CH2M HILL
MW1B	75-85.4	08/28/02	34.05	158.05	124.00	Weston
		11/18/02	35.10	158.05	122.95	Weston
		02/26/03	34.56	158.05	123.49	Weston
		05/21/03	32.32	158.05	125.73	Weston
		03/04/04	38.93	158.05	119.12	CH2M HILL
		06/23/04	39.64	158.05	118.41	CH2M HILL
		09/14/04	40.91	158.05	117.14	CH2M HILL
		12/07/04	42.51	158.05	115.54	CH2M HILL
		03/02/05	41.73	158.05	116.32	CH2M HILL
		06/21/05	34.91	158.05	123.14	CH2M HILL
		09/01/05	33.22	158.05	124.83	CH2M HILL
		03/08/06	33.80	158.05	124.25	CH2M HILL
		05/23/06	32.39	158.05	125.66	CH2M HILL
		09/08/06	32.96	158.05	125.09	CH2M HILL
		03/07/07	33.68	158.05	124.37	CH2M HILL
		07/25/07	33.42	158.05	124.63	CH2M HILL
		02/26/08	38.33	158.05	119.72	CH2M HILL
		03/04/09	44.20	158.05	113.85	CH2M HILL
		09/11/09	46.57	158.05	111.48	CH2M HILL
MW2	45-60	08/19/02	30.05	154.21	124.16	Weston
		11/20/02	31.88	154.21	122.33	Weston
		03/03/03	31.18	154.21	123.03	Weston
		05/22/03	29.05	154.21	125.16	Weston
		03/04/04	35.20	154.21	119.01	CH2M HILL
		06/22/04	35.91	154.21	118.30	CH2M HILL
		09/14/04	37.20	154.21	117.01	CH2M HILL
		12/08/04	45.20	154.21	109.01	CH2M HILL
		03/02/05	37.98	154.21	116.23	CH2M HILL
		06/21/05	31.88	154.21	122.33	CH2M HILL
		09/02/05	30.17	154.21	124.04	CH2M HILL
		03/08/06	30.40	154.21	123.81	CH2M HILL
		05/24/06	29.02	154.21	125.19	CH2M HILL
		09/07/06	29.52	154.21	124.69	CH2M HILL
		03/05/07	30.31	154.21	123.90	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		07/26/07	30.08	154.21	124.13	CH2M HILL
		02/29/08	34.68	154.21	119.53	CH2M HILL
		03/06/09	40.27	154.21	113.94	CH2M HILL
		09/14/09	42.71	154.21	111.50	CH2M HILL
MW3	38-48	08/19/02	28.05	151.48	123.43	Weston
		11/13/02	29.51	151.48	121.97	Weston
		02/24/03	29.05	151.48	122.43	Weston
		05/16/03	27.85	151.48	123.63	Weston
		03/04/04	32.33	151.48	119.15	CH2M HILL
		06/24/04	33.30	151.48	118.18	CH2M HILL
		09/16/04	34.38	151.48	117.10	CH2M HILL
		12/08/04	35.42	151.48	116.06	CH2M HILL
		03/02/05	30.88	151.48	120.60	CH2M HILL
		06/24/05	30.18	151.48	121.30	CH2M HILL
		09/01/05	29.10	151.48	122.38	CH2M HILL
		03/09/06	28.90	151.48	122.58	CH2M HILL
		05/18/06	28.57	151.48	122.91	CH2M HILL
		09/07/06	28.20	151.48	123.28	CH2M HILL
		03/06/07	28.94	151.48	122.54	CH2M HILL
		07/19/07	28.76	151.48	122.72	CH2M HILL
		02/21/08	31.82	151.48	119.66	CH2M HILL
		03/02/09	36.50	151.48	114.98	CH2M HILL
		09/11/09	38.71	151.48	112.77	CH2M HILL
MW4A	42.7-53	08/19/02	25.74	146.80	121.06	Weston
		11/14/02	27.39	146.80	119.41	Weston
		02/18/03	26.37	146.80	120.43	Weston
		05/19/03	24.50	146.80	122.30	Weston
		03/04/04	30.37	146.80	116.43	CH2M HILL
		06/21/04	31.07	146.80	115.73	CH2M HILL
		09/16/04	32.40	146.80	114.40	CH2M HILL
		12/06/04	33.78	146.80	113.02	CH2M HILL
		02/28/05	31.76	146.80	115.04	CH2M HILL
		06/21/05	31.07	146.80	115.73	CH2M HILL
		08/30/05	25.56	146.80	121.24	CH2M HILL
		03/07/06	25.90	146.80	120.90	CH2M HILL
		05/19/06	24.56	146.80	122.24	CH2M HILL
		08/29/06	25.03	146.80	121.77	CH2M HILL
		02/26/07	26.03	146.80	120.77	CH2M HILL
		07/24/07	25.51	146.80	121.29	CH2M HILL
		02/26/08	29.66	146.80	117.14	CH2M HILL
		03/05/09	35.15	146.80	111.65	CH2M HILL
		09/04/09	37.20	146.80	109.60	CH2M HILL
MW4B	69.7-80	08/19/02	25.60	146.84	121.24	Weston
		11/14/02	27.22	146.84	119.62	Weston
		02/18/03	26.27	146.84	120.57	Weston
		05/19/03	24.40	146.84	122.44	Weston
		03/04/04	30.24	146.84	116.60	CH2M HILL
		06/21/04	31.01	146.84	115.83	CH2M HILL
		09/13/04	32.22	146.84	114.62	CH2M HILL
		12/06/04	33.69	146.84	113.15	CH2M HILL
		02/28/05	31.60	146.84	115.24	CH2M HILL
		06/21/05	26.59	146.84	120.25	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		08/30/05	25.38	146.84	121.46	CH2M HILL
		03/07/06	25.80	146.84	121.04	CH2M HILL
		05/19/06	24.47	146.84	122.37	CH2M HILL
		08/29/06	24.82	146.84	122.02	CH2M HILL
		02/26/07	25.86	146.84	120.98	CH2M HILL
		07/24/07	25.49	146.84	121.35	CH2M HILL
		02/26/08	29.57	146.84	117.27	CH2M HILL
		03/05/09	35.00	146.84	111.84	CH2M HILL
		09/04/09	37.10	146.84	109.74	CH2M HILL
MW4C	88.7-99	08/19/02	27.52	147.10	119.58	Weston
		11/14/02	29.21	147.10	117.89	Weston
		02/18/03	27.90	147.10	119.20	Weston
		05/19/03	25.89	147.10	121.21	Weston
		03/04/04	32.30	147.10	114.80	CH2M HILL
		06/21/04	33.25	147.10	113.85	CH2M HILL
		09/13/04	34.95	147.10	112.15	CH2M HILL
		12/06/04	36.01	147.10	111.09	CH2M HILL
		02/28/05	33.09	147.10	114.01	CH2M HILL
		06/21/05	27.85	147.10	119.25	CH2M HILL
		08/30/05	26.91	147.10	120.19	CH2M HILL
		03/07/06	27.42	147.10	119.68	CH2M HILL
		05/19/06	26.10	147.10	121.00	CH2M HILL
		08/29/06	26.43	147.10	120.67	CH2M HILL
		02/26/07	27.34	147.10	119.76	CH2M HILL
		07/24/07	27.32	147.10	119.78	CH2M HILL
		02/26/08	31.32	147.10	115.78	CH2M HILL
		03/05/09	37.72	147.10	109.38	CH2M HILL
		09/04/09	40.44	147.10	106.66	CH2M HILL
MW5	43.3-53.3	08/19/02	28.03	150.60	122.57	Weston
		11/20/02	29.97	150.60	120.63	Weston
		02/03/03	28.63	150.60	121.97	Weston
		05/22/03	26.30	150.60	124.30	Weston
		03/04/04	33.44	150.60	117.16	CH2M HILL
		06/22/04	33.98	150.60	116.62	CH2M HILL
		09/14/04	35.32	150.60	115.28	CH2M HILL
		12/06/04	37.10	150.60	113.50	CH2M HILL
		02/28/05	35.75	150.60	114.85	CH2M HILL
		06/21/05	28.51	150.60	122.09	CH2M HILL
		08/30/05	27.18	150.60	123.42	CH2M HILL
		03/07/06	27.80	150.60	122.80	CH2M HILL
		05/24/06	26.31	150.60	124.29	CH2M HILL
		08/29/06	26.94	150.60	123.66	CH2M HILL
		02/26/07	27.89	150.60	122.71	CH2M HILL
		07/18/07	27.55	150.60	123.05	CH2M HILL
		02/26/08	32.64	150.60	117.96	CH2M HILL
		03/05/09	38.94	150.60	111.66	CH2M HILL
		09/04/09	40.99	150.60	109.61	CH2M HILL
MW6	37.1-47.5	08/19/02	28.34	150.28	121.94	Weston
		11/19/02	30.39	150.28	119.89	Weston
		02/03/03	28.59	150.28	121.69	Weston
		05/19/03	25.84	150.28	124.44	Weston
		03/04/04	33.94	150.28	116.34	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		06/22/04	34.45	150.28	115.83	CH2M HILL
		09/14/04	35.98	150.28	114.30	CH2M HILL
		12/07/04	37.84	150.28	112.44	CH2M HILL
		03/02/05	36.08	150.28	114.20	CH2M HILL
		06/21/05	27.81	150.28	122.47	CH2M HILL
		08/30/05	26.57	150.28	123.71	CH2M HILL
		03/07/06	27.67	150.28	122.61	CH2M HILL
		05/23/06	26.16	150.28	124.12	CH2M HILL
		08/30/06	26.81	150.28	123.47	CH2M HILL
		02/28/07	27.72	150.28	122.56	CH2M HILL
		07/18/07	27.50	150.28	122.78	CH2M HILL
		02/25/08	33.01	150.28	117.27	CH2M HILL
		03/04/09	39.93	150.28	110.35	CH2M HILL
		09/04/09	41.90	150.28	108.38	CH2M HILL
MW7	35.8-46	08/19/02	23.54	143.28	119.74	Weston
		11/13/02	23.68	143.28	119.60	Weston
		02/24/03	23.15	143.28	120.13	Weston
		05/19/03	21.90	143.28	121.38	Weston
		03/04/04	25.88	143.28	117.40	CH2M HILL
		06/24/04	26.79	143.28	116.49	CH2M HILL
		09/14/04	27.77	143.28	115.51	CH2M HILL
		12/07/04	28.65	143.28	114.63	CH2M HILL
		03/03/05	25.85	143.28	117.43	CH2M HILL
		06/21/05	23.82	143.28	119.46	CH2M HILL
		08/30/05	23.17	143.28	120.11	CH2M HILL
		03/06/06	23.13	143.28	120.15	CH2M HILL
		05/18/06	22.21	143.28	121.07	CH2M HILL
		08/28/06	22.12	143.28	121.16	CH2M HILL
		02/27/07	22.96	143.28	120.32	CH2M HILL
		07/16/07	22.90	143.28	120.38	CH2M HILL
		02/21/08	25.39	143.28	117.89	CH2M HILL
		03/02/09	29.65	143.28	113.63	CH2M HILL
		09/01/09	31.65	143.28	111.63	CH2M HILL
MW8A	30-45	08/19/02	29.61	150.14	120.53	Weston
		11/15/02	31.62	150.14	118.52	Weston
		02/25/03	30.07	150.14	120.07	Weston
		05/20/03	27.70	150.14	122.44	Weston
		03/04/04	35.21	150.14	114.93	CH2M HILL
		06/23/04	35.53	150.14	114.61	CH2M HILL
		09/14/04	37.02	150.14	113.12	CH2M HILL
		12/09/04	38.72	150.14	111.42	CH2M HILL
		03/01/05	36.94	150.14	113.20	CH2M HILL
		06/21/05	29.65	150.14	120.49	CH2M HILL
		08/31/05	28.31	150.14	121.83	CH2M HILL
		03/06/06	29.40	150.14	120.74	CH2M HILL
		05/16/06	27.93	150.14	122.21	CH2M HILL
		08/30/06	28.44	150.14	121.70	CH2M HILL
		02/28/07	29.36	150.14	120.78	CH2M HILL
		07/17/07	28.91	150.14	121.23	CH2M HILL
		02/25/08	34.13	150.14	116.01	CH2M HILL
		03/03/09	40.60	150.14	109.54	CH2M HILL
		09/03/09	dry	150.14	n/a	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
MW8B	65-75	08/19/02	29.54	150.03	120.49	Weston
		11/15/02	31.55	150.03	118.48	Weston
		02/25/03	30.06	150.03	119.97	Weston
		05/20/03	27.70	150.03	122.33	Weston
		03/04/04	34.95	150.03	115.08	CH2M HILL
		06/23/04	35.45	150.03	114.58	CH2M HILL
		09/15/04	36.96	150.03	113.07	CH2M HILL
		12/09/04	38.63	150.03	111.40	CH2M HILL
		03/01/05	36.85	150.03	113.18	CH2M HILL
		06/21/05	29.55	150.03	120.48	CH2M HILL
		08/31/05	28.24	150.03	121.79	CH2M HILL
		03/06/06	29.26	150.03	120.77	CH2M HILL
		05/16/06	27.72	150.03	122.31	CH2M HILL
		08/30/06	28.27	150.03	121.76	CH2M HILL
		02/28/07	29.28	150.03	120.75	CH2M HILL
		07/17/07	28.73	150.03	121.30	CH2M HILL
		02/25/08	34.04	150.03	115.99	CH2M HILL
		03/03/09	40.50	150.03	109.53	CH2M HILL
		09/03/09	42.40	150.03	107.63	CH2M HILL
MW8C	86.7-91.7	08/19/02	30.51	150.03	119.52	Weston
		11/15/02	32.47	150.03	117.56	Weston
		02/25/03	30.78	150.03	119.25	Weston
		05/20/03	28.37	150.03	121.66	Weston
		03/04/04	35.88	150.03	114.15	CH2M HILL
		06/23/04	36.58	150.03	113.45	CH2M HILL
		09/15/04	38.42	150.03	111.61	CH2M HILL
		12/09/04	39.77	150.03	110.26	CH2M HILL
		03/01/05	37.18	150.03	112.85	CH2M HILL
		06/21/05	30.24	150.03	119.79	CH2M HILL
		08/31/05	29.05	150.03	120.98	CH2M HILL
		03/06/06	30.10	150.03	119.93	CH2M HILL
		05/16/06	28.50	150.03	121.53	CH2M HILL
		08/30/06	29.05	150.03	120.98	CH2M HILL
		02/28/07	29.96	150.03	120.07	CH2M HILL
		07/17/07	29.63	150.03	120.40	CH2M HILL
		02/25/08	34.76	150.03	115.27	CH2M HILL
		03/03/09	41.69	150.03	108.34	CH2M HILL
		09/03/09	43.99	150.03	106.04	CH2M HILL
MW8D	110-120	08/19/02	35.81	149.91	114.10	Weston
		11/15/02	37.54	149.91	112.37	Weston
		02/25/03	34.47	149.91	115.44	Weston
		05/20/03	31.84	149.91	118.07	Weston
		03/04/04	40.98	149.91	108.93	CH2M HILL
		06/23/04	42.65	149.91	107.26	CH2M HILL
		09/15/04	46.08	149.91	103.83	CH2M HILL
		12/09/04	45.90	149.91	104.01	CH2M HILL
		03/01/05	39.32	149.91	110.59	CH2M HILL
		06/21/05	33.54	149.91	116.37	CH2M HILL
		08/31/05	33.08	149.91	116.83	CH2M HILL
		03/07/06	34.25	149.91	115.66	CH2M HILL
		05/16/06	32.36	149.91	117.55	CH2M HILL
		08/30/06	33.35	149.91	116.56	CH2M HILL
		02/28/07	33.77	149.91	116.14	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		07/17/07	34.63	149.91	115.28	CH2M HILL
		02/25/08	39.02	149.91	110.89	CH2M HILL
		03/03/09	48.40	149.91	101.51	CH2M HILL
		09/03/09	52.75	149.91	97.16	CH2M HILL
MW9A	25-35	08/19/02	28.30	148.84	120.54	Weston
		11/19/02	30.47	148.84	118.37	Weston
		02/26/03	28.82	148.84	120.02	Weston
		05/21/03	26.35	148.84	122.49	Weston
		03/04/04	dry	148.84	n/a	CH2M HILL
		06/22/04	dry	148.84	n/a	CH2M HILL
		09/15/04	dry	148.84	n/a	CH2M HILL
		12/07/04	dry	148.84	n/a	CH2M HILL
		03/01/05	34.49	148.84	114.35	CH2M HILL
		06/21/05	28.27	148.84	120.57	CH2M HILL
		08/31/05	26.78	148.84	122.06	CH2M HILL
		03/08/06	28.00	148.84	120.84	CH2M HILL
		05/24/06	26.25	148.84	122.59	CH2M HILL
		09/01/06	27.02	148.84	121.82	CH2M HILL
		03/02/07	28.02	148.84	120.82	CH2M HILL
		07/25/07	27.39	148.84	121.45	CH2M HILL
		02/27/08	32.96	148.84	115.88	CH2M HILL
		03/06/09	34.51	148.84	114.33	CH2M HILL
		09/09/09	dry	148.84	n/a	CH2M HILL
MW9B	49.8-60	08/19/02	34.31	148.90	114.59	Weston
		11/19/02	35.40	148.90	113.50	Weston
		02/26/03	32.37	148.90	116.53	Weston
		05/21/03	29.41	148.90	119.49	Weston
		03/04/04	39.32	148.90	109.58	CH2M HILL
		06/22/04	40.36	148.90	108.54	CH2M HILL
		09/15/04	43.22	148.90	105.68	CH2M HILL
		12/07/04	44.25	148.90	104.65	CH2M HILL
		03/01/05	38.36	148.90	110.54	CH2M HILL
		06/21/05	31.09	148.90	117.81	CH2M HILL
		08/31/05	30.31	148.90	118.59	CH2M HILL
		03/08/06	31.80	148.90	117.10	CH2M HILL
		05/16/06	29.87	148.90	119.03	CH2M HILL
		09/01/06	30.93	148.90	117.97	CH2M HILL
		03/02/07	31.54	148.90	117.36	CH2M HILL
		07/25/07	32.28	148.90	116.62	CH2M HILL
		02/27/08	37.18	148.90	111.72	CH2M HILL
		03/06/09	46.64	148.90	102.26	CH2M HILL
		09/09/09	49.41	148.90	99.49	CH2M HILL
MW10	52-62	08/19/02	33.36	147.45	114.09	Weston
		11/19/02	36.59	147.45	110.86	Weston
		02/24/03	35.07	147.45	112.38	Weston
		05/20/03	33.45	147.45	114.00	Weston
		03/04/04	38.47	147.45	108.98	CH2M HILL
		06/22/04	40.26	147.45	107.19	CH2M HILL
		09/15/04	42.00	147.45	105.45	CH2M HILL
		12/08/04	43.50	147.45	103.95	CH2M HILL
		03/01/05	41.35	147.45	106.10	CH2M HILL
		06/21/05	36.63	147.45	110.82	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		09/01/05	35.12	147.45	112.33	CH2M HILL
		03/09/06	35.15	147.45	112.30	CH2M HILL
		05/23/06	33.73	147.45	113.72	CH2M HILL
		09/07/06	33.58	147.45	113.87	CH2M HILL
		03/06/07	34.25	147.45	113.20	CH2M HILL
		07/20/07	33.96	147.45	113.49	CH2M HILL
		02/21/08	38.51	147.45	108.94	CH2M HILL
		03/03/09	45.42	147.45	102.03	CH2M HILL
		09/02/09	47.80	147.45	99.65	CH2M HILL
MW11	40-50	08/19/02	35.87	150.89	115.02	Weston
		11/19/02	37.61	150.89	113.28	Weston
		02/24/03	37.43	150.89	113.46	Weston
		05/16/03	36.20	150.89	114.69	Weston
		03/04/04	40.87	150.89	110.02	CH2M HILL
		06/24/04	41.72	150.89	109.17	CH2M HILL
		09/15/04	43.08	150.89	107.81	CH2M HILL
		12/08/04	44.32	150.89	106.57	CH2M HILL
		03/03/05	42.83	150.89	108.06	CH2M HILL
		06/21/05	38.98	150.89	111.91	CH2M HILL
		09/02/05	37.75	150.89	113.14	CH2M HILL
		03/09/06	37.60	150.89	113.29	CH2M HILL
		05/18/06	36.58	150.89	114.31	CH2M HILL
		09/07/06	36.34	150.89	114.55	CH2M HILL
		03/06/07	36.77	150.89	114.12	CH2M HILL
		07/23/07	36.59	150.89	114.30	CH2M HILL
		02/21/08	40.36	150.89	110.53	CH2M HILL
		03/02/09	46.02	150.89	104.87	CH2M HILL
		09/02/09	48.32	150.89	102.57	CH2M HILL
MW12	82-97	08/31/05	88.20	220.87	132.67	CH2M HILL
		03/15/06	82.90	220.87	137.97	CH2M HILL
		06/22/06	85.44	220.87	135.43	Aracadis
		08/07/06	83.11	220.87	137.76	CH2M HILL
		09/08/06	82.36	220.87	138.51	CH2M HILL
		03/06/07	83.14	220.87	137.73	CH2M HILL
		07/17/07	83.53	220.87	137.34	CH2M HILL
		02/25/08	84.45	220.87	136.42	CH2M HILL
		03/05/09	88.00	220.87	132.87	CH2M HILL
		09/14/09	89.81	220.87	131.06	CH2M HILL
MW13A	56-66	08/31/05	65.11	206.02	140.91	CH2M HILL
		03/15/06	dry	206.02	n/a	CH2M HILL
		06/22/06	dry	206.02	n/a	Aracadis
		03/06/07	dry	206.02	n/a	CH2M HILL
		07/26/07	dry	206.02	n/a	CH2M HILL
		03/03/08	dry	206.02	n/a	CH2M HILL
		03/06/09	dry	206.02	n/a	CH2M HILL
		09/14/09	dry	206.02	n/a	CH2M HILL
MW13B	123-133	08/31/05	81.05	205.88	124.83	CH2M HILL
		03/15/06	81.85	205.88	124.03	CH2M HILL
		05/15/06	80.33	205.88	125.55	CH2M HILL
		06/22/06	81.75	205.88	124.13	Arcadis
		09/08/06	81.61	205.88	124.27	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		03/06/07	81.68	205.88	124.20	CH2M HILL
		07/26/07	83.26	205.88	122.62	CH2M HILL
		03/03/08	85.39	205.88	120.49	CH2M HILL
		03/06/09	93.72	205.88	112.16	CH2M HILL
		09/14/09	98.27	205.88	107.61	CH2M HILL
MW14	60-75	06/13/06	46.20	172.63	126.43	Arcadis
		08/09/06	46.20	172.63	126.43	CH2M HILL
		09/11/06	46.35	172.63	126.28	CH2M HILL
		03/06/07	47.22	172.63	125.41	CH2M HILL
		07/19/07	46.78	172.63	125.85	CH2M HILL
		02/25/08	50.98	172.63	121.65	CH2M HILL
		03/05/09	55.68	172.63	116.95	CH2M HILL
		09/14/09	58.18	172.63	114.45	CH2M HILL
MW15	50-70	08/31/05	25.40	148.28	122.88	CH2M HILL
		03/15/06	25.75	148.28	122.53	CH2M HILL
		05/24/06	24.41	148.28	123.87	CH2M HILL
		06/22/06	24.57	148.28	123.71	Arcadis
		08/30/06	24.79	148.28	123.49	CH2M HILL
		02/26/07	25.85	148.28	122.43	CH2M HILL
		07/24/07	25.49	148.28	122.79	CH2M HILL
		02/26/08	29.97	148.28	118.31	CH2M HILL
		03/05/09	35.69	148.28	112.59	CH2M HILL
		09/04/09	37.75	148.28	110.53	CH2M HILL
MW16A	45-60	08/31/05	47.36	153.19	105.83	CH2M HILL
		03/13/06	48.03	153.19	105.16	CH2M HILL
		05/18/06	46.37	153.19	106.82	CH2M HILL
		06/22/06	46.07	153.19	107.12	Arcadis
		08/31/06	46.36	153.19	106.83	CH2M HILL
		03/01/07	47.54	153.19	105.65	CH2M HILL
		07/23/07	47.11	153.19	106.08	CH2M HILL
		02/29/08	53.94	153.19	99.25	CH2M HILL
		03/10/09	dry	153.19		CH2M HILL
		09/08/09	dry	153.19		CH2M HILL
MW16B	106-116	08/31/05	48.51	153.19	104.68	CH2M HILL
		03/13/06	48.90	153.19	104.29	CH2M HILL
		06/22/06	46.88	153.19	106.31	Arcadis
		08/07/06	47.03	153.19	106.16	CH2M HILL
		08/31/06	47.25	153.19	105.94	CH2M HILL
		03/01/07	48.17	153.19	105.02	CH2M HILL
		07/23/07	48.23	153.19	104.96	CH2M HILL
		02/29/08	54.28	153.19	98.91	CH2M HILL
		03/10/09	63.79	153.19	89.40	CH2M HILL
		09/08/09	67.35	153.19	85.84	CH2M HILL
MW16C	149-164	08/31/05	51.29	153.26	101.97	CH2M HILL
		03/13/06	50.78	153.26	102.48	CH2M HILL
		06/22/06	49.17	153.26	104.09	Arcadis
		08/07/06	49.35	153.26	103.91	CH2M HILL
		08/31/06	49.63	153.26	103.63	CH2M HILL
		03/01/07	49.80	153.26	103.46	CH2M HILL
		07/23/07	51.69	153.26	101.57	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		02/29/08	55.86	153.26	97.40	CH2M HILL
		03/10/09	65.53	153.26	87.73	CH2M HILL
		09/08/09	71.04	153.26	82.22	CH2M HILL
MW17A	56-71	08/31/05	66.79	159.03	92.24	CH2M HILL
		03/13/06	66.47	159.03	92.56	CH2M HILL
		06/22/06	65.03	159.03	94.00	Arcadis
		08/09/06	64.17	159.03	94.86	CH2M HILL
		09/05/06	64.35	159.03	94.68	CH2M HILL
		03/05/07	65.50	159.03	93.53	CH2M HILL
		07/18/07	64.11	159.03	94.92	CH2M HILL
		03/04/08	70.31	159.03	88.72	CH2M HILL
		03/11/09	dry	159.03		CH2M HILL
		09/08/09	dry	159.03		CH2M HILL
MW17B	94-104	08/31/05	78.52	158.90	80.38	CH2M HILL
		03/13/06	65.95	158.90	92.95	CH2M HILL
		06/22/06	64.07	158.90	94.83	Arcadis
		08/09/06	63.54	158.90	95.36	CH2M HILL
		09/05/06	63.81	158.90	95.09	CH2M HILL
		03/05/07	64.74	158.90	94.16	CH2M HILL
		07/18/07	63.66	158.90	95.24	CH2M HILL
		03/04/08	71.10	158.90	87.80	CH2M HILL
		03/11/09	80.25	158.90	78.65	CH2M HILL
		09/08/09	82.91	158.90	75.99	CH2M HILL
MW17C	170-180	08/31/05	66.02	159.00	92.98	CH2M HILL
		03/13/06	73.24	159.00	85.76	CH2M HILL
		06/22/06	73.54	159.00	85.46	Arcadis
		08/09/06	74.64	159.00	84.36	CH2M HILL
		09/05/06	75.41	159.00	83.59	CH2M HILL
		03/05/07	71.00	159.00	88.00	CH2M HILL
		07/18/07	81.24	159.00	77.76	CH2M HILL
		03/04/08	78.10	159.00	80.90	CH2M HILL
		03/11/09	84.65	159.00	74.35	CH2M HILL
		09/08/09	99.90	159.00	59.10	CH2M HILL
MW18A	56-71	08/31/05	28.01	143.74	115.73	CH2M HILL
		03/14/06	27.93	143.74	115.81	CH2M HILL
		05/17/06	26.88	143.74	116.86	CH2M HILL
		06/22/06	26.97	143.74	116.77	Arcadis
		08/28/06	26.81	143.74	116.93	CH2M HILL
		02/27/07	27.51	143.74	116.23	CH2M HILL
		07/20/07	27.48	143.74	116.26	CH2M HILL
		02/27/08	30.82	143.74	112.92	CH2M HILL
		03/09/09	36.65	143.74	107.09	CH2M HILL
		09/02/09	39.01	143.74	104.73	CH2M HILL
MW18B	90-100	08/31/05	27.99	143.73	115.74	CH2M HILL
		03/14/06	27.88	143.73	115.85	CH2M HILL
		05/17/06	26.89	143.73	116.84	CH2M HILL
		06/22/06	26.95	143.73	116.78	Arcadis
		08/28/06	26.81	143.73	116.92	CH2M HILL
		02/27/07	27.50	143.73	116.23	CH2M HILL
		07/20/07	27.45	143.73	116.28	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		02/27/08	30.77	143.73	112.96	CH2M HILL
		03/09/09	36.60	143.73	107.13	CH2M HILL
		09/02/09	39.06	143.73	104.67	CH2M HILL
MW18C	146-161	08/31/05	29.97	143.83	113.86	CH2M HILL
		03/14/06	29.58	143.83	114.25	CH2M HILL
		05/17/06	28.50	143.83	115.33	CH2M HILL
		06/22/06	28.94	143.83	114.89	Arcadis
		08/28/06	29.18	143.83	114.65	CH2M HILL
		02/27/07	29.20	143.83	114.63	CH2M HILL
		07/20/07	30.38	143.83	113.45	CH2M HILL
		03/05/08	32.31	143.83	111.52	CH2M HILL
		03/09/09	38.68	143.83	105.15	CH2M HILL
		09/02/09	43.05	143.83	100.78	CH2M HILL
MW19	56-71	06/22/06	69.38	158.73	89.35	Arcadis
		08/09/06	68.43	158.73	90.30	CH2M HILL
		09/07/06	68.61	158.73	90.12	CH2M HILL
		03/05/07	68.58	158.73	90.15	CH2M HILL
		07/25/07	68.22	158.73	90.51	CH2M HILL
		02/26/08	68.27	158.73	90.46	CH2M HILL
		03/02/09	elow screen	158.73		CH2M HILL
		09/11/09	dry	158.73		CH2M HILL
MW20A	75-90	06/22/06	67.35	141.31	73.96	Arcadis
		08/08/06	66.77	141.31	74.54	CH2M HILL
		09/01/06	67.01	141.31	74.30	CH2M HILL
		03/02/07	68.72	141.31	72.59	CH2M HILL
		07/19/07	66.84	141.31	74.47	CH2M HILL
		03/03/08	73.64	141.31	67.67	CH2M HILL
		03/12/09	81.95	141.31	59.36	CH2M HILL
		09/08/09	84.92	141.31	56.39	CH2M HILL
MW20B	122-132	06/22/06	67.69	141.32	73.63	Arcadis
		08/08/06	67.22	141.32	74.10	CH2M HILL
		09/01/06	67.48	141.32	73.84	CH2M HILL
		03/02/07	68.11	141.32	73.21	CH2M HILL
		07/19/07	67.32	141.32	74.00	CH2M HILL
		03/03/08	74.04	141.32	67.28	CH2M HILL
		03/10/09	82.50	141.32	58.82	CH2M HILL
		09/08/09	85.61	141.32	55.71	CH2M HILL
MW20C	180-190	06/22/06	77.90	141.35	63.45	Arcadis
		08/08/06	81.18	141.35	60.17	CH2M HILL
		09/01/06	81.17	141.35	60.18	CH2M HILL
		03/02/07	77.20	141.35	64.15	CH2M HILL
		07/19/07	85.85	141.35	55.50	CH2M HILL
		03/03/08	87.29	141.35	54.06	CH2M HILL
		03/10/09	93.91	141.35	47.44	CH2M HILL
		09/09/09	n/a	141.35	n/a	CH2M HILL
MW21	64-79	06/22/06	49.86	128.81	78.95	Arcadis
		08/08/06	50.10	128.81	78.71	CH2M HILL
		08/31/06	50.38	128.81	78.43	CH2M HILL
		03/01/07	50.96	128.81	77.85	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		07/26/07	50.96	128.81	77.85	CH2M HILL
		02/21/08	57.97	128.81	70.84	CH2M HILL
		03/02/09	67.50	128.81	61.31	CH2M HILL
		09/11/09	71.30	128.81	57.51	CH2M HILL
MW22	74-89	06/22/06	61.81	150.82	89.01	Arcadis
		08/08/06	62.34	150.82	88.48	CH2M HILL
		08/31/06	62.54	150.82	88.28	CH2M HILL
		03/01/07	63.31	150.82	87.51	CH2M HILL
		07/26/07	63.25	150.82	87.57	CH2M HILL
		02/21/08	71.14	150.82	79.68	CH2M HILL
		03/03/09	81.62	150.82	69.20	CH2M HILL
		09/11/09	n/a	150.82	n/a	CH2M HILL
MW23A	35-55	06/19/07	27.80	148.76	120.96	CH2M HILL
		07/13/07	28.17	148.76	120.59	CH2M HILL
		02/28/08	33.13	148.76	115.63	CH2M HILL
		03/16/09	39.38	148.76	109.38	CH2M HILL
		09/03/09	41.31	148.76	107.45	CH2M HILL
MW23B	87-91	08/31/05	29.11	149.06	119.95	CH2M HILL
		03/14/06	29.53	149.06	119.53	CH2M HILL
		05/15/06	28.25	149.06	120.81	CH2M HILL
		06/22/06	28.33	149.06	120.73	Arcadis
		09/11/06	28.92	149.06	120.14	CH2M HILL
		03/07/07	29.62	149.06	119.44	CH2M HILL
		07/13/07	29.25	149.06	119.81	CH2M HILL
		02/28/08	34.03	149.06	115.03	CH2M HILL
		03/16/09	40.96	149.06	108.10	CH2M HILL
		09/03/09	43.30	149.06	105.76	CH2M HILL
MW23C	145-160	08/31/05	31.85	149.07	117.22	CH2M HILL
		03/14/06	32.35	149.07	116.72	CH2M HILL
		05/15/06	30.91	149.07	118.16	CH2M HILL
		06/22/06	31.08	149.07	117.99	Arcadis
		09/11/06	31.91	149.07	117.16	CH2M HILL
		03/07/07	32.19	149.07	116.88	CH2M HILL
		07/13/07	32.98	149.07	116.09	CH2M HILL
		02/28/08	36.83	149.07	112.24	CH2M HILL
		03/16/09	45.38	149.07	103.69	CH2M HILL
		09/03/09	49.35	149.07	99.72	CH2M HILL
MW23D	175-180	08/31/05	32.67	148.04	115.37	CH2M HILL
		03/15/06	33.15	148.04	114.89	CH2M HILL
		05/15/06	31.69	148.04	116.35	CH2M HILL
		06/22/06	31.85	148.04	116.19	Arcadis
		09/11/06	32.69	148.04	115.35	CH2M HILL
		03/07/07	32.95	148.04	115.09	CH2M HILL
		07/13/07	33.40	148.04	114.64	CH2M HILL
		02/28/08	37.59	148.04	110.45	CH2M HILL
		03/16/09	46.26	148.04	101.78	CH2M HILL
		09/03/09	50.40	148.04	97.64	CH2M HILL
MW24A	50-70	06/18/07	36.80	162.04	125.24	CH2M HILL
		07/09/07	37.01	162.04	125.03	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		02/28/08	41.31	162.04	120.73	CH2M HILL
		03/12/09	46.42	162.04	115.62	CH2M HILL
		09/14/09	48.82	162.04	113.22	CH2M HILL
MW24B	110-125	06/18/07	41.24	162.03	120.79	CH2M HILL
		07/09/07	42.08	162.03	119.95	CH2M HILL
		02/28/08	45.40	162.03	116.63	CH2M HILL
		03/12/09	53.78	162.03	108.25	CH2M HILL
		09/14/09	58.60	162.03	103.43	CH2M HILL
MW24C	140-160	06/18/07	41.60	162.02	120.42	CH2M HILL
		07/09/07	42.41	162.02	119.61	CH2M HILL
		02/28/08	45.72	162.02	116.30	CH2M HILL
		03/16/09	53.91	162.02	108.11	CH2M HILL
		09/14/09	58.73	162.02	103.29	CH2M HILL
MW24D	173-178	06/18/07	41.90	162.05	120.15	CH2M HILL
		07/09/07	42.64	162.05	119.41	CH2M HILL
		02/28/08	46.09	162.05	115.96	CH2M HILL
		03/13/09	54.36	162.05	107.69	CH2M HILL
		09/14/09	59.60	162.05	102.45	CH2M HILL
MW25A	45-65	04/25/07	37.65	147.90	110.25	CH2M HILL
		05/01/07	37.46	147.90	110.44	CH2M HILL
		07/10/07	37.80	147.90	110.10	CH2M HILL
		02/29/08	43.74	147.90	104.16	CH2M HILL
		03/12/09	51.50	147.90	96.40	CH2M HILL
		09/02/09	54.06	147.90	93.84	CH2M HILL
MW25B	90-110	04/25/07	37.67	147.84	110.17	CH2M HILL
		05/01/07	37.55	147.84	110.29	CH2M HILL
		07/10/07	38.09	147.84	109.75	CH2M HILL
		02/29/08	43.66	147.84	104.18	CH2M HILL
		03/12/09	51.88	147.84	95.96	CH2M HILL
		09/02/09	54.91	147.84	92.93	CH2M HILL
MW25C	140-150	04/25/07	39.45	147.86	108.41	CH2M HILL
		05/01/07	39.30	147.86	108.56	CH2M HILL
		07/10/07	41.85	147.86	106.01	CH2M HILL
		02/29/08	45.80	147.86	102.06	CH2M HILL
		03/16/09	54.10	147.86	93.76	CH2M HILL
		09/02/09	60.20	147.86	87.66	CH2M HILL
MW25D	194-209	04/25/07	49.91	147.87	97.96	CH2M HILL
		05/01/07	51.23	147.87	96.64	CH2M HILL
		07/10/07	67.55	147.87	80.32	CH2M HILL
		02/29/08	58.04	147.87	89.83	CH2M HILL
		03/16/09	60.89	147.87	86.98	CH2M HILL
		09/02/09	n/a	147.87	n/a	CH2M HILL
MW26A	70-90	04/25/07	67.65	155.62	87.97	CH2M HILL
		05/02/07	67.60	155.62	88.02	CH2M HILL
		07/11/07	67.04	155.62	88.58	CH2M HILL
		03/04/08	74.21	155.62	81.41	CH2M HILL
		03/13/09	82.42	155.62	73.20	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		09/11/09	85.16	155.62	70.46	CH2M HILL
MW26B	105-120	04/25/07	67.72	155.45	87.73	CH2M HILL
		05/02/07	67.69	155.45	87.76	CH2M HILL
		07/11/07	67.12	155.45	88.33	CH2M HILL
		03/04/08	74.31	155.45	81.14	CH2M HILL
		03/13/09	82.64	155.45	72.81	CH2M HILL
		09/11/09	85.28	155.45	70.17	CH2M HILL
MW26C	145-160	04/25/07	73.05	155.41	82.36	CH2M HILL
		05/02/07	73.56	155.41	81.85	CH2M HILL
		07/11/07	80.55	155.41	74.86	CH2M HILL
		03/05/08	82.87	155.41	72.54	CH2M HILL
		03/13/09	88.73	155.41	66.68	CH2M HILL
		09/11/09	100.40	155.41	55.01	CH2M HILL
MW26D	185-205	04/25/07	71.59	155.37	83.78	CH2M HILL
		05/02/07	72.42	155.37	82.95	CH2M HILL
		07/11/07	82.44	155.37	72.93	CH2M HILL
		03/05/08	81.24	155.37	74.13	CH2M HILL
		03/13/09	87.61	155.37	67.76	CH2M HILL
		09/11/09	n/a	155.37	n/a	CH2M HILL
MW27A	90-110	04/25/07	77.18	139.24	62.06	CH2M HILL
		05/03/07	77.17	139.24	62.07	CH2M HILL
		07/12/07	76.97	139.24	62.27	CH2M HILL
		03/05/08	81.77	139.24	57.47	CH2M HILL
		03/11/09	88.05	139.24	51.19	CH2M HILL
		09/09/09	91.20	139.24	48.04	CH2M HILL
MW27B	144-164	04/25/07	77.02	139.18	62.16	CH2M HILL
		05/03/07	76.99	139.18	62.19	CH2M HILL
		07/12/07	76.84	139.18	62.34	CH2M HILL
		03/05/08	81.61	139.18	57.57	CH2M HILL
		03/11/09	87.99	139.18	51.19	CH2M HILL
		09/09/09	91.16	139.18	48.02	CH2M HILL
MW27C	180-190	04/25/07	84.34	139.17	54.83	CH2M HILL
		05/02/07	84.32	139.17	54.85	CH2M HILL
		07/12/07	92.07	139.17	47.10	CH2M HILL
		03/05/08	96.66	139.17	42.51	CH2M HILL
		03/13/09	103.32	139.17	35.85	CH2M HILL
		09/09/09	112.91	139.17	26.26	CH2M HILL
MW27D	200-210	04/25/07	83.00	139.13	56.13	CH2M HILL
		05/02/07	83.25	139.13	55.88	CH2M HILL
		07/12/07	91.85	139.13	47.28	CH2M HILL
		03/05/08	95.86	139.13	43.27	CH2M HILL
		03/13/09	102.67	139.13	36.46	CH2M HILL
		09/09/09	n/a	139.13	n/a	CH2M HILL
MW28	85-105	06/19/07	73.94	119.91	45.97	CH2M HILL
		07/16/07	74.29	119.91	45.62	CH2M HILL
		03/03/08	78.04	119.91	41.87	CH2M HILL
		03/09/09	84.45	119.91	35.46	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		09/09/09	88.25	119.91	31.66	CH2M HILL
MW29	90-110	06/19/07	80.66	107.10	26.44	CH2M HILL
		07/13/07	81.03	107.10	26.07	CH2M HILL
		03/03/08	83.23	107.10	23.87	CH2M HILL
		03/09/09	86.69	107.10	20.41	CH2M HILL
		09/09/09	89.30	107.10	17.80	CH2M HILL
MW30	95-115	06/19/07	91.88	106.70	14.82	CH2M HILL
		03/03/08	95.09	106.70	11.61	CH2M HILL
		03/09/09	98.23	106.70	8.47	CH2M HILL
		09/09/09	102.27	106.70	4.43	CH2M HILL
MW31	105.5-120.5	09/09/09	99.19	232.67	133.48	CH2M HILL
OW1A	63-78	05/15/01	74.19	212.50	138.31	CDM
		06/14/01	74.14	212.50	138.36	CDM
		07/24/01	74.04	212.50	138.46	CDM
		08/16/01	74.08	212.50	138.42	CDM
		09/18/01	74.33	212.50	138.17	CDM
		10/18/01	74.84	212.50	137.66	CDM
		11/15/01	74.38	212.50	138.12	CDM
		12/14/01	74.80	212.50	137.70	CDM
		01/18/02	74.92	212.50	137.58	CDM
		02/14/02	74.86	212.50	137.64	CDM
		03/13/02	75.13	212.50	137.37	CDM
		04/19/02	75.16	212.50	137.34	CDM
		08/20/02	75.97	212.50	136.53	CDM/WESTON
		11/22/02	76.20	212.50	136.30	WESTON
		02/19/03	76.70	212.50	135.80	CDM/WESTON
		05/13/03	76.51	212.50	135.99	WESTON
		08/26/03	76.95	212.50	135.55	CDM
		02/25/04	76.97	212.50	135.53	CDM
		06/17/04	78.66	212.50	133.84	CH2M HILL
		08/25/04	78.84	212.50	133.66	CDM
		12/01/04	76.11	212.50	136.39	CH2M HILL
		02/23/05	77.22	212.50	135.28	CDM
		06/21/05	76.90	212.50	135.60	CH2M HILL
		08/24/05	76.15	212.50	136.35	CDM
		02/17/06	75.33	212.50	137.17	CDM
		08/22/06	74.94	212.50	137.56	CDM
		02/20/07	75.35	212.50	137.15	CDM
		08/21/07	76.17	212.50	136.33	CDM
		02/19/08	76.62	212.50	135.88	
		09/16/08	77.82	212.50	134.68	
		03/03/09	78.17	212.50	134.33	
		03/09/09	82.94	212.50	129.56	
		09/09/09	81.89	212.50	130.61	
		16/09/09	81.97	212.50	130.53	
		23/09/09	81.96	212.50	130.54	
		30/09/09	81.97	212.50	130.53	
OW1B	110-120	05/15/01	72.30	207.18	134.88	CDM
		06/14/01	72.53	207.18	134.65	CDM
		07/24/01	73.36	207.18	133.82	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		08/16/01	74.18	207.18	133.00	CDM
		09/18/01	74.75	207.18	132.43	CDM
		10/18/01	74.83	207.18	132.35	CDM
		11/15/01	75.49	207.18	131.69	CDM
		12/14/01	75.05	207.18	132.13	CDM
		01/18/02	74.12	207.18	133.06	CDM
		02/14/02	73.56	207.18	133.62	CDM
		03/13/02	74.52	207.18	132.66	CDM
		08/20/02	77.04	207.18	130.14	CDM/WESTON
		11/22/02	78.15	207.18	129.03	WESTON
		02/19/03	77.04	207.18	130.14	CDM/WESTON
		05/13/03	75.72	207.18	131.46	WESTON
		08/26/03	78.75	207.18	128.43	CDM
		02/25/04	80.93	207.18	126.25	CDM
		06/17/04	81.55	207.18	125.63	CH2M HILL
		08/25/04	82.80	207.18	124.38	CDM
		12/01/04	84.01	207.18	123.17	CH2M HILL
		02/25/05	79.95	207.18	127.23	CDM
		06/21/05	75.47	207.18	131.71	CH2M HILL
		08/24/05	75.76	207.18	131.42	CDM
		02/17/06	75.77	207.18	131.41	CDM
		08/22/06	75.00	207.18	132.18	CDM
		02/20/07	75.47	207.18	131.71	CDM
		08/21/07	77.68	207.18	129.50	CDM
		02/19/08	78.26	207.18	128.92	
		09/16/08	NA	207.18	NA	
		03/03/09	83.47	207.18	123.71	
		09/03/09	87.32	207.18	119.86	
		09/09/09	87.44	207.18	119.74	
		09/16/09	87.66	207.18	119.52	
		09/23/09	87.84	207.18	119.34	
		09/30/09	88.05	207.18	119.13	
OW2	60-80	05/15/01	66.47	202.30	135.83	CDM
		06/14/01	66.38	202.30	135.92	CDM
		07/24/01	66.25	202.30	136.05	CDM
		08/16/01	66.34	202.30	135.96	CDM
		09/18/01	66.66	202.30	135.64	CDM
		10/18/01	66.95	202.30	135.35	CDM
		11/15/01	66.92	202.30	135.38	CDM
		12/14/01	67.28	202.30	135.02	CDM
		01/18/02	67.40	202.30	134.90	CDM
		02/14/02	67.31	202.30	134.99	CDM
		03/13/02	67.50	202.30	134.80	CDM
		04/19/02	67.52	202.30	134.78	CDM
		08/20/02	68.30	202.30	134.00	CDM
		08/21/02	68.30	202.30	134.00	WESTON
		11/25/02	68.91	202.30	133.39	WESTON
		02/19/03	69.44	202.30	132.86	CDM
		02/19/03	69.28	202.30	133.02	WESTON
		05/13/03	68.95	202.30	133.35	WESTON
		08/26/03	69.18	202.30	133.12	CDM
		02/25/04	70.40	202.30	131.90	CDM
		06/17/04	70.92	202.30	131.38	CH2M HILL
		08/25/04	71.24	202.30	131.06	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		12/02/04	71.91	202.30	130.39	CH2M HILL
		02/23/05	71.82	202.30	130.48	CDM
		06/21/05	69.69	202.30	132.61	CH2M HILL
		08/23/05	68.77	202.30	133.53	CDM
		02/17/06	67.87	202.30	134.43	CDM
		08/22/06	67.43	202.30	134.87	CDM
		02/20/07	67.97	202.30	134.33	CDM
		08/21/07	68.60	202.30	133.70	CDM
		02/19/08	69.67	202.30	132.63	
		09/16/08	71.09	202.30	131.21	
		03/03/09	71.32	202.30	130.98	
		09/03/09	79.12	202.30	123.18	
		09/09/09	79.20	202.30	123.10	
		09/16/09	77.67	202.30	124.63	
		09/23/09	78.85	202.30	123.45	
		09/30/09	78.75	202.30	123.55	
OW3A	63-83	05/15/01	62.55	198.53	135.98	CDM
		06/14/01	62.44	198.53	136.09	CDM
		07/24/01	62.29	198.53	136.24	CDM
		08/16/01	62.39	198.53	136.14	CDM
		09/18/01	62.70	198.53	135.83	CDM
		10/18/01	62.98	198.53	135.55	CDM
		11/15/01	62.95	198.53	135.58	CDM
		12/14/01	63.33	198.53	135.20	CDM
		01/18/02	63.52	198.53	135.01	CDM
		02/14/02	63.36	198.53	135.17	CDM
		03/13/02	63.58	198.53	134.95	CDM
		04/19/02	63.61	198.53	134.92	CDM
		08/20/02	64.47	198.53	134.06	CDM
		08/20/02	64.47	198.53	134.06	WESTON
		11/25/02	65.14	198.53	133.39	WESTON
		02/19/03	65.58	198.53	132.95	CDM
		02/20/03	65.50	198.53	133.03	WESTON
		05/14/03	65.25	198.53	133.28	WESTON
		08/26/03	65.54	198.53	132.99	CDM
		02/25/04	66.35	198.53	132.18	CDM
		06/17/04	66.93	198.53	131.60	CH2M HILL
		08/25/04	67.13	198.53	131.40	CDM
		12/01/04	67.70	198.53	130.83	CH2M HILL
		02/23/05	67.20	198.53	131.33	CDM
		06/21/05	65.41	198.53	133.12	CH2M HILL
		08/23/05	64.69	198.53	133.84	CDM
		02/17/06	63.90	198.53	134.63	CDM
		08/22/06	63.70	198.53	134.83	CDM
		02/20/07	64.24	198.53	134.29	CDM
		08/21/07	64.81	198.53	133.72	CDM
		02/19/08	65.65	198.53	132.88	
		09/16/08	66.46	198.53	132.07	
		03/03/09	67.00	198.53	131.53	
		09/03/09	74.23	198.53	124.30	
		09/09/09	74.69	198.53	123.84	
		09/16/09	73.11	198.53	125.42	
		09/23/09	73.68	198.53	124.85	
		09/30/09	73.40	198.53	125.13	

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
OW3B		03/13/06	73.76	197.06	123.30	CDM
		05/15/06	72.54	197.06	124.52	CH2M HILL
		05/23/06	72.82	197.06	124.24	CH2M HILL
		08/22/06	73.38	197.06	123.68	CH2M HILL
		02/20/07	73.94	197.06	123.12	CDM
		08/21/07	76.50	197.06	120.56	CDM
		02/19/08	77.12	197.06	119.94	
		09/16/08	83.65	197.06	113.41	
		03/03/09	85.50	197.06	111.56	
		09/03/09	89.79	197.06	107.27	
		09/09/09	89.61	197.06	107.45	
		09/16/09	89.88	197.06	107.18	
		09/23/09	90.11	197.06	106.95	
		09/30/09	90.36	197.06	106.70	
OW4A	50-70	05/15/01	53.60	184.67	131.07	CDM
		06/14/01	53.36	184.67	131.31	CDM
		07/24/01	53.31	184.67	131.36	CDM
		08/16/01	53.70	184.67	130.97	CDM
		09/18/01	54.35	184.67	130.32	CDM
		10/18/01	54.76	184.67	129.91	CDM
		11/15/01	54.87	184.67	129.80	CDM
		12/14/01	55.43	184.67	129.24	CDM
		01/18/02	55.55	184.67	129.12	CDM
		02/14/02	55.21	184.67	129.46	CDM
		03/13/02	55.30	184.67	129.37	CDM
		04/19/02	55.35	184.67	129.32	CDM
		08/20/02	56.80	184.67	127.87	CDM
		08/21/02	56.80	184.67	127.87	WESTON
		11/26/02	58.15	184.67	126.52	WESTON
		02/19/03	58.58	184.67	126.09	CDM
		02/20/03	58.51	184.67	126.16	WESTON
		05/14/03	57.49	184.67	127.18	WESTON
		08/26/03	58.13	184.67	126.54	CDM
		02/25/04	61.04	184.67	123.63	CDM
		06/15/04	61.91	184.67	122.76	CH2M HILL
		08/25/04	62.36	184.67	122.31	CDM
		11/30/04	63.80	184.67	120.87	CH2M HILL
		02/25/05	63.94	184.67	120.73	CDM
		06/21/05	61.50	184.67	123.17	CH2M HILL
		08/23/05	58.98	184.67	125.69	CDM
		02/17/06	58.03	184.67	126.64	CDM
		05/17/06	57.37	184.67	127.30	CH2M HILL
		08/22/06	56.87	184.67	127.80	CDM
		02/20/07	57.77	184.67	126.90	CDM
		08/21/07	57.88	184.67	126.79	CDM
		02/19/08	60.53	184.67	124.14	
		09/16/08	62.40	184.67	122.27	
		03/03/09	64.53	184.67	120.14	
		09/03/09	66.93	184.67	117.74	
		09/09/09	66.72	184.67	117.95	
		09/16/09	66.88	184.67	117.79	
		09/23/09	66.96	184.67	117.71	
		09/30/09	67.05	184.67	117.62	

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
OW4B	112-122.3	05/15/01	57.11	184.50	127.39	CDM
		06/14/01	57.51	184.50	126.99	CDM
		07/24/01	58.82	184.50	125.68	CDM
		08/16/01	60.01	184.50	124.49	CDM
		09/18/01	60.82	184.50	123.68	CDM
		10/18/01	60.98	184.50	123.52	CDM
		11/15/01	61.67	184.50	122.83	CDM
		12/14/01	60.76	184.50	123.74	CDM
		01/18/02	59.53	184.50	124.97	CDM
		02/14/02	58.81	184.50	125.69	CDM
		03/13/02	59.34	184.50	125.16	CDM
		04/19/02	60.02	184.50	124.48	CDM
		08/20/02	63.64	184.50	120.86	CDM
		08/21/02	63.64	184.50	120.86	WESTON
		11/26/02	64.88	184.50	119.62	WESTON
		02/19/03	62.46	184.50	122.04	CDM
		02/20/03	62.61	184.50	121.89	WESTON
		05/14/03	60.42	184.50	124.08	WESTON
		08/26/03	65.67	184.50	118.83	CDM
		02/25/04	68.08	184.50	116.42	CDM
		06/15/04	69.05	184.50	115.45	CH2M HILL
		08/25/04	71.10	184.50	113.40	CDM
		11/30/04	71.60	184.50	112.90	CH2M HILL
		02/25/05	65.97	184.50	118.53	CDM
		06/21/05	60.45	184.50	124.05	CH2M HILL
		08/23/05	61.15	184.50	123.35	CDM
		02/17/06	62.27	184.50	122.23	CDM
		05/17/06	60.46	184.50	124.04	CH2M HILL
		08/22/06	61.13	184.50	123.37	CDM
		02/20/07	62.10	184.50	122.40	CDM
		08/21/07	64.42	184.50	120.08	CDM
		02/19/08	65.82	184.50	118.68	
		09/16/08	71.68	184.50	112.82	
		03/03/09	73.30	184.50	111.20	
		09/03/09	77.48	184.50	107.02	
		09/09/09	77.38	184.50	107.12	
		09/16/09	77.67	184.50	106.83	
		09/23/09	77.86	184.50	106.64	
		09/30/09	78.12	184.50	106.38	
OW5	30-50	08/16/01	26.14	154.16	128.02	CDM
		09/18/01	27.33	154.16	126.83	CDM
		10/18/01	27.59	154.16	126.57	CDM
		11/15/01	28.18	154.16	125.98	CDM
		12/14/01	28.24	154.16	125.92	CDM
		01/18/02	27.44	154.16	126.72	CDM
		02/14/02	26.73	154.16	127.43	CDM
		03/13/02	26.75	154.16	127.41	CDM
		04/19/02	27.12	154.16	127.04	CDM
		08/20/02	30.03	154.16	124.13	CDM
		08/22/02	30.03	154.16	124.13	WESTON
		11/25/02	31.73	154.16	122.43	WESTON
		02/19/03	30.85	154.16	123.31	CDM
		02/21/03	30.82	154.16	123.34	WESTON

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		05/14/03	28.65	154.16	125.51	WESTON
		08/26/03	31.20	154.16	122.96	CDM
		02/25/04	35.21	154.16	118.95	CDM
		06/15/04	35.78	154.16	118.38	CH2M HILL
		08/25/04	36.78	154.16	117.38	CDM
		12/02/04	38.59	154.16	115.57	CH2M HILL
		02/24/05	38.17	154.16	115.99	CDM
		06/24/05	31.05	154.16	123.11	CH2M HILL
		08/23/05	29.62	154.16	124.54	CDM
		02/17/06	30.11	154.16	124.05	CDM
		05/24/06	28.55	154.16	125.61	CH2M HILL
		08/22/06	28.99	154.16	125.17	CDM
		02/20/07	30.17	154.16	123.99	CDM
		08/21/07	30.67	154.16	123.49	CDM
		02/19/08	34.63	154.16	119.53	
		09/16/08	36.38	154.16	117.78	
		03/03/09	40.25	154.16	113.91	
OW6	38-58	08/16/01	42.54	172.74	130.20	CDM
		09/18/01	43.25	172.74	129.49	CDM
		10/18/01	43.69	172.74	129.05	CDM
		11/15/01	43.95	172.74	128.79	CDM
		12/14/01	44.41	172.74	128.33	CDM
		01/18/02	44.39	172.74	128.35	CDM
		02/14/02	44.00	172.74	128.74	CDM
		03/13/02	44.01	172.74	128.73	CDM
		04/19/02	44.12	172.74	128.62	CDM
		08/20/02	45.70	172.74	127.04	CDM
		08/21/02	45.00	172.74	127.74	WESTON
		11/26/02	47.11	172.74	125.63	WESTON
		02/19/03	47.49	172.74	125.25	CDM
		02/21/03	47.49	172.74	125.25	WESTON
		05/15/03	46.30	172.74	126.44	WESTON
		08/26/03	47.09	172.74	125.65	CDM
		02/25/04	50.24	172.74	122.50	CDM
		06/16/04	51.05	172.74	121.69	CH2M HILL
		08/25/04	51.69	172.74	121.05	CDM
		12/01/04	53.10	172.74	119.64	CH2M HILL
		02/23/05	53.58	172.74	119.16	CDM
		06/21/05	49.33	172.74	123.41	CH2M HILL
		08/23/05	47.68	172.74	125.06	CDM
		02/17/06	46.93	172.74	125.81	CDM
		05/19/06	46.15	172.74	126.59	CH2M HILL
		08/22/06	45.70	172.74	127.04	CDM
		02/20/07	46.16	172.74	126.58	CDM
		08/21/07	46.78	172.74	125.96	CDM
		02/19/08	49.70	172.74	123.04	
		09/16/08	51.20	172.74	121.54	
		03/03/09	54.03	172.74	118.71	
OW7	71-91	03/13/02	74.83	214.21	139.38	CDM
		04/19/02	74.93	214.21	139.28	CDM
		08/20/02	75.86	214.21	138.35	CDM
		08/21/02	75.86	214.21	138.35	WESTON
		11/22/02	76.45	214.21	137.76	WESTON

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		02/19/03	76.89	214.21	137.32	CDM
		02/21/03	76.80	214.21	137.41	WESTON
		05/15/03	76.70	214.21	137.51	WESTON
		08/26/03	76.90	214.21	137.31	CDM
		02/25/04	78.00	214.21	136.21	CDM
		06/16/04	78.78	214.21	135.43	CH2M HILL
		08/25/04	78.96	214.21	135.25	CDM
		11/30/04	79.71	214.21	134.50	CH2M HILL
		02/24/05	78.98	214.21	135.23	CDM
		08/23/05	75.94	214.21	138.27	CDM
		02/17/06	75.21	214.21	139.00	CDM
		05/18/06	75.10	214.21	139.11	CH2M HILL
		08/22/06	74.67	214.21	139.54	CH2M HILL
		02/20/07	75.28	214.21	138.93	CH2M HILL
		08/21/07	76.00	214.21	138.21	CDM
		02/19/08	76.38	214.21	137.83	
		09/16/08	76.76	214.21	137.45	
		03/03/09	78.51	214.21	135.70	
		09/03/09	82.32	214.21	131.89	
		09/09/09	81.81	214.21	132.40	
		09/16/09	81.85	214.21	132.36	
		09/23/09	82.00	214.21	132.21	
		09/30/09	82.21	214.21	132.00	
OW8A	60.4-80	03/13/02	65.61	200.64	135.03	CDM
		04/19/02	65.69	200.64	134.95	CDM
		08/20/02	66.46	200.64	134.18	CDM
		08/22/02	66.46	200.64	134.18	WESTON
		11/25/02	67.07	200.64	133.57	WESTON
		02/19/03	67.37	200.64	133.27	CDM
		02/20/03	67.36	200.64	133.28	WESTON
		05/15/03	67.14	200.64	133.50	WESTON
		08/26/03	67.35	200.64	133.29	CDM
		02/25/04	68.36	200.64	132.28	CDM
		06/16/04	68.98	200.64	131.66	CH2M HILL
		08/25/04	69.15	200.64	131.49	CDM
		12/03/04	69.37	200.64	131.27	CH2M HILL
		02/23/05	69.50	200.64	131.14	CDM
		06/21/05	67.70	200.64	132.94	CH2M HILL
		08/23/05	66.87	200.64	133.77	CDM
		02/17/06	66.05	200.64	134.59	CDM
		08/22/06	65.66	200.64	134.98	CDM
		02/20/07	66.28	200.64	134.36	CDM
		08/21/07	66.70	200.64	133.94	CDM
		02/19/08	67.55	200.64	133.09	
		09/16/08	68.70	200.64	131.94	
		03/03/09	69.14	200.64	131.50	
		09/03/09	79.71	200.64	120.93	
		09/09/09	79.62	200.64	121.02	
		09/16/09	77.53	200.64	123.11	
		09/23/09	77.74	200.64	122.90	
		09/30/09	78.78	200.64	121.86	
OW8B	116-126	08/25/04	86.77	200.82	114.05	CDM
		12/02/04	87.33	200.82	113.49	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		02/23/05	81.55	200.82	119.27	CDM
		06/24/05	76.60	200.82	124.22	CH2M HILL
		08/23/05	76.31	200.82	124.51	CDM
		02/17/06	77.55	200.82	123.27	CDM
		05/17/06	75.76	200.82	125.06	CH2M HILL
		08/22/06	76.58	200.82	124.24	CDM
		02/20/07	77.29	200.82	123.53	CDM
		08/21/07	79.86	200.82	120.96	CDM
		02/19/08	80.94	200.82	119.88	
		09/16/08	86.82	200.82	114.00	
		03/03/09	88.85	200.82	111.97	
		09/03/09	92.80	200.82	108.02	
		09/09/09	93.00	200.82	107.82	
		09/16/09	93.27	200.82	107.55	
		09/23/09	93.50	200.82	107.32	
		09/30/09	93.73	200.82	107.09	
OW9	70-90	03/03/09	69.67	195.7	126.03	
		09/03/09	75.78	195.7	119.92	
		09/09/09	76.40	195.7	119.30	
		09/16/09	75.58	195.7	120.12	
		09/23/09	76.29	195.7	119.41	
		09/30/09	75.61	195.7	120.09	
OW10	70-89.5	03/03/09	66.24	193.17	126.93	
		09/03/09	71.44	193.17	121.73	
		09/09/09	71.42	193.17	121.75	
		09/16/09	70.34	193.17	122.83	
		09/23/09	71.05	193.17	122.12	
		09/30/09	70.97	193.17	122.20	
WDI-GW1	38-58	06/21/05	44.09	153.50	109.41	CH2M HILL
		09/07/05	42.83		110.67	CH2M HILL
		03/14/06	42.51		110.99	CH2M HILL
		09/19/06	41.37		112.13	CH2M HILL
		12/12/06	41.97		111.53	WDI
		06/26/07	41.55		111.95	WDI
WDI-GW2	33-53	12/12/06	37.07	149.30	112.23	WDI
		06/26/07	37.15		112.15	WDI
WDI-GW5	43-63	06/21/05	56.93	166.70	109.77	CH2M HILL
		09/07/05	55.86		110.84	CH2M HILL
		03/14/06	55.49		111.21	CH2M HILL
		09/19/06	41.37		125.33	CH2M HILL
WDI-GW7	38-58	06/21/05	45.15	154.50	109.35	CH2M HILL
		09/07/05	44.30		110.20	CH2M HILL
		03/14/06	43.92		110.58	CH2M HILL
		09/19/06	42.98		111.52	CH2M HILL
WDI-GW10	38-58	06/21/05	46.63	154.70	108.07	CH2M HILL
		09/07/05	45.51		109.19	CH2M HILL
		03/14/06	45.07		109.63	CH2M HILL
		09/19/06	44.03		110.67	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		12/12/06	44.53		110.17	WDI
		06/26/07	44.20		110.50	WDI
WDI-GW11	118-128	06/21/05	46.65	154.70	108.05	CH2M HILL
		09/07/05	45.84		108.86	CH2M HILL
		03/14/06	45.37		109.33	CH2M HILL
		09/19/06	44.40		110.30	CH2M HILL
		12/12/06	44.90		109.80	WDI
		06/26/07	44.60		110.10	WDI
WDI-GW21	36-56	06/21/05	46.87	155.20	108.33	CH2M HILL
		09/07/05	43.02		112.18	CH2M HILL
		03/14/06	44.60		110.60	CH2M HILL
		09/19/06	44.65		110.55	CH2M HILL
WDI-GW22	58-78	06/21/05	64.60	156.70	92.10	CH2M HILL
		09/07/05	63.02		93.68	CH2M HILL
		09/19/06	60.02		96.68	CH2M HILL
		12/12/06	60.25		96.45	WDI
		06/26/07	59.75		96.95	WDI
WDI-GW23	43-63	06/21/05	58.07	157.00	98.93	CH2M HILL
		09/07/05	57.52		99.48	CH2M HILL
		03/14/06	57.16		99.84	CH2M HILL
		09/19/06	56.30		100.70	CH2M HILL
		12/13/06	56.48		100.52	WDI
		06/02/07	56.20		100.80	WDI
WDI-GW24	103-113	06/21/05	64.20	156.70	92.50	CH2M HILL
		09/07/05	62.81		93.89	CH2M HILL
		03/14/06	61.42		95.28	CH2M HILL
		09/19/06	59.95		96.75	CH2M HILL
WDI-GW26	44-64	03/14/06	47.00	156.00	109.00	CH2M HILL
		09/19/06	46.02		109.98	CH2M HILL
		12/13/06	46.41		109.59	WDI
		06/26/07	46.15		109.85	WDI
WDI-GW27	43-63	09/07/05	48.45	157.00	108.55	CH2M HILL
		03/14/06	48.00		109.00	CH2M HILL
		09/19/06	47.00		110.00	CH2M HILL
		12/13/06	47.38		109.62	WDI
		06/26/07	47.15		109.85	WDI
WDI-GW29	44-64	06/21/05	50.14	157.40	107.26	CH2M HILL
		09/07/05	49.21		108.19	CH2M HILL
		03/14/06	48.73		108.67	CH2M HILL
		09/19/06	47.74		109.66	CH2M HILL
		12/13/06	48.10		109.30	WDI
		06/26/07	47.85		109.55	WDI
WDI-GW30	74-94	06/21/05	49.78	156.80	107.02	CH2M HILL
		09/07/05	49.15		107.65	CH2M HILL
		03/14/06	48.63		108.17	CH2M HILL
		09/19/06	47.76		109.04	CH2M HILL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		12/11/06	48.05		108.75	WDI
		06/26/07	47.87		108.93	WDI
WDI-GW32	115-125	09/07/05	43.96	153.60	109.64	CH2M HILL
		03/14/06	43.47		110.13	CH2M HILL
		09/19/06	42.75		110.85	CH2M HILL
		12/13/06	43.18		110.42	WDI
		06/26/07	43.00		110.60	WDI
WDI-GW33	35-60	09/07/05	54.51	163.70	109.19	CH2M HILL
		03/14/06	54.09		109.61	CH2M HILL
		09/19/06	53.06		110.64	CH2M HILL
		12/11/06	53.48		110.22	WDI
		06/26/07	53.20		110.50	WDI
OFRP-MW1	55-100	02/02/94	59.17	142.32	83.15	McLaren Hart
		03/01/94	58.77		83.55	McLaren Hart
		10/11/94	58.32		84.00	McLaren Hart
		04/10/95	57.69		84.63	McLaren Hart
		04/23/96	56.96		85.36	McLaren Hart
OFRP-MW2	63-108	02/01/94	66.38	139.29	72.91	McLaren Hart
		03/01/94	65.73		73.56	McLaren Hart
		10/11/94	64.60		74.69	McLaren Hart
		04/10/95	64.14		75.15	McLaren Hart
		04/23/96	63.05		76.24	McLaren Hart
OFRP-MW3	64-109	02/01/94	68.65	139.03	70.38	McLaren Hart
		03/01/94	67.94		71.09	McLaren Hart
		10/11/94	66.56		72.47	McLaren Hart
		04/10/95	66.22		72.81	McLaren Hart
		04/23/96	64.98		74.05	McLaren Hart
OFRP-MW4	64-109	02/01/94	68.26	138.68	70.42	McLaren Hart
		03/01/94	67.63		71.05	McLaren Hart
		10/11/94	65.90		72.78	McLaren Hart
		04/10/95	65.86		72.82	McLaren Hart
		04/23/96	64.48		74.20	McLaren Hart
		06/21/05	83.72		54.96	CH2M HILL
		08/31/05	82.28		56.40	CH2M HILL
OFRP-MW5	65-105	01/27/94	68.20	141.53	73.33	McLaren Hart
		03/01/94	67.54		73.99	McLaren Hart
		10/11/94	65.94		75.59	McLaren Hart
		04/10/95	65.96		75.57	McLaren Hart
		04/23/96	64.62		76.91	McLaren Hart
		06/21/05	84.00		57.53	CH2M HILL
		08/31/05	Can't Find		N/A	CH2M HILL
OFRP-MW6	61-91	01/27/94	66.22	143.13	76.91	McLaren Hart
		03/01/94	65.57		77.56	McLaren Hart
		10/11/94	64.25		78.88	McLaren Hart
		04/10/95	64.22		78.91	McLaren Hart
		04/23/96	63.03		80.10	McLaren Hart

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
OFRP-MW7	67-97	01/27/94	68.25	145.69	77.44	McLaren Hart
		03/01/94	67.63		78.06	McLaren Hart
		10/11/94	65.98		79.71	McLaren Hart
		04/10/95	66.18		79.51	McLaren Hart
		04/23/96	64.86		80.83	McLaren Hart
OFRP-MW8	69-94	01/28/94	71.69	142.24	70.55	McLaren Hart
		03/01/94	70.98		71.26	McLaren Hart
		10/11/94	68.93		73.31	McLaren Hart
		04/10/95	69.09		73.15	McLaren Hart
		04/23/96	67.60		74.64	McLaren Hart
		06/21/05	86.75		55.49	CH2M HILL
		08/31/05	85.20		57.04	CH2M HILL
OFRP-MW9	69-94	01/27/94	73.37	145.19	71.82	McLaren Hart
		03/01/94	72.82		72.37	McLaren Hart
		10/11/94	69.92		75.27	McLaren Hart
		04/10/95	70.24		74.95	McLaren Hart
		04/23/96	68.58		76.61	McLaren Hart
OFRP-MW10	63-83	02/02/94	70.06	147.02	76.96	McLaren Hart
		03/01/94	69.63		77.39	McLaren Hart
		10/11/94	66.84		80.18	McLaren Hart
		04/10/95	67.30		79.72	McLaren Hart
		04/23/96	65.98		81.04	McLaren Hart
OFRP-MW11	67-87	02/02/94	73.94	149.72	75.78	McLaren Hart
		03/01/94	73.56		76.16	McLaren Hart
		10/11/94	70.52		79.20	McLaren Hart
		04/10/95	70.65		79.07	McLaren Hart
		04/23/96	69.10		80.62	McLaren Hart
OFRP-MW12	68-88	01/27/94	71.21	152.66	81.45	McLaren Hart
		03/01/94	70.83		81.83	McLaren Hart
		10/11/94	68.02		84.64	McLaren Hart
		04/10/95	68.39		84.27	McLaren Hart
		04/23/96	66.92		85.74	McLaren Hart
		08/31/05	Lid Rusted		N/A	CH2M HILL
		03/14/06	80.81		71.85	CH2M HILL
		09/20/06	79.76		72.90	CH2M HILL
		07/26/07	No access		N/A	CH2M HILL
OFRP-MW13	57-92	01/27/94	62.05	153.76	91.71	McLaren Hart
		03/01/94	61.68		92.08	McLaren Hart
		10/11/94	49.41		104.35	McLaren Hart
		04/10/95	59.72		94.04	McLaren Hart
		04/23/96	58.36		95.40	McLaren Hart
OFRP-MW14	54-89	01/27/94	59.62	152.52	92.90	McLaren Hart
		03/01/94	59.32		93.20	McLaren Hart
		10/11/94	57.11		95.41	McLaren Hart
		04/10/95	57.72		94.80	McLaren Hart
		04/23/96	56.32		96.20	McLaren Hart
OFRP-MW15	50-80	01/27/94	57.60	150.58	92.98	McLaren Hart

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		03/01/94	57.27		93.31	McLaren Hart
		10/11/94	54.88		95.70	McLaren Hart
		04/10/95	54.86		95.72	McLaren Hart
		04/23/96	53.59		96.99	McLaren Hart
OFRP-MW16	54-89	01/27/94	57.48	151.97	94.49	McLaren Hart
		03/01/94	57.19		94.78	McLaren Hart
		10/11/94	54.94		97.03	McLaren Hart
		04/10/95	56.25		95.72	McLaren Hart
		04/23/96	53.86		98.11	McLaren Hart
OFRP-MW17	58-88	01/27/94	58.75	155.60	96.85	McLaren Hart
		03/01/94	58.47		97.13	McLaren Hart
		10/11/94	56.35		99.25	McLaren Hart
		04/10/95	56.82		98.78	McLaren Hart
		04/23/96	55.39		100.21	McLaren Hart
OFRP-MW18	55-80	01/27/94	59.85	153.74	93.89	McLaren Hart
		03/01/94	59.53		94.21	McLaren Hart
		10/11/94	57.34		96.40	McLaren Hart
		04/10/95	58.09		95.65	McLaren Hart
		04/23/96	56.68		97.06	McLaren Hart
OFRP-MW19	53-78	02/02/94	57.02	158.24	101.22	McLaren Hart
		03/01/94	57.02		101.22	McLaren Hart
		10/11/94	54.84		103.40	McLaren Hart
		04/10/95	55.27		102.97	McLaren Hart
		04/23/96	53.69		104.55	McLaren Hart
		08/31/05	65.23		93.01	CH2M HILL
		03/14/06	54.88		103.36	CH2M HILL
		09/19/06	63.40		94.84	CH2M HILL
		07/26/07	63.07		95.17	CH2M HILL
OFRP-MW20	55-100	02/02/94	57.45	155.72	98.27	McLaren Hart
		03/01/94	57.24		98.48	McLaren Hart
		10/11/94	55.22		100.50	McLaren Hart
		04/10/95	56.09		99.63	McLaren Hart
		04/23/96	53.56		102.16	McLaren Hart
OFRP-MW21	67-92	02/02/94	54.93	157.43	102.50	McLaren Hart
		03/01/94	58.75		98.68	McLaren Hart
		10/11/94	52.68		104.75	McLaren Hart
		04/10/95	52.28		105.15	McLaren Hart
		04/23/96	50.64		106.79	McLaren Hart
		08/31/05	61.37		96.06	CH2M HILL
		03/14/06	61.44		95.99	CH2M HILL
		09/19/06	59.16		98.27	CH2M HILL
		07/26/07	58.82		98.61	CH2M HILL
OFRP-MW22	62-87	04/23/96	76.89	154.70	77.81	McLaren Hart
OFRP-MW23	73-88	02/01/94	64.30	150.36	86.06	McLaren Hart
		03/01/94	63.96		86.40	McLaren Hart
		10/11/94	61.93		88.43	McLaren Hart
		04/10/95	62.78		87.58	McLaren Hart

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		04/23/96	61.03		89.33	McLaren Hart
OFRP-MW24	58-93	02/01/94	62.75	153.06	90.31	McLaren Hart
		03/01/94	62.43		90.63	McLaren Hart
		10/11/94	60.75		92.31	McLaren Hart
		04/10/95	61.70		91.36	McLaren Hart
		04/23/96	60.24		92.82	McLaren Hart
OFRP-MW25	60-100	10/11/94	59.98	150.60	90.62	McLaren Hart
		04/10/95	59.88		90.72	McLaren Hart
		04/23/96	58.96		91.64	McLaren Hart
OFRP-MW29	60-100	10/11/94	64.59	143.75	79.16	McLaren Hart
		04/10/95	64.66		79.09	McLaren Hart
		04/23/96	63.36		80.39	McLaren Hart
OFRP-MW30	60-100	10/11/94	65.24	147.01	81.77	McLaren Hart
		04/10/95	65.29		81.72	McLaren Hart
		04/23/96	64.12		82.89	McLaren Hart
Cenco-MW101		05/01/02	83.10	135.23	52.13	BBL
		10/01/05	dry		N/A	BBL
		02/13/06	dry		N/A	BBL
		07/31/06	88.61		46.62	BBL
		02/05/07	88.20		47.03	BBL
		05/07/07	87.63		47.60	BBL
Cenco-MW103		05/01/02	87.88	136.95	49.07	BBL
		10/01/05	dry		N/A	BBL
		02/13/06	dry		N/A	BBL
		07/31/06	93.32		43.63	BBL
		02/05/07	92.83		44.12	BBL
		05/07/07	92.29		44.66	BBL
Cenco-MW104A		05/01/02	83.64	141.16	57.52	BBL
		10/01/05	89.85		51.31	BBL
		02/13/06	89.66		51.50	BBL
		07/31/06	covered		n/a	BBL
		02/05/07	88.35		52.81	BBL
		05/07/07	88.09		53.07	BBL
Cenco-MW105		05/01/02	82.59	138.63	56.04	BBL
		10/01/05	91.03		47.60	BBL
		02/13/06	89.95		48.68	BBL
		07/31/06	87.99		50.64	BBL
		02/05/07	87.66		50.97	BBL
		05/07/07	87.11		51.52	BBL
Cenco-MW106		05/01/02	88.19	148.41	60.22	BBL
		10/01/05	abandoned		n/a	BBL
		02/06/06	reinstalled	152.51	n/a	BBL
		08/02/06	96.72		55.79	BBL
		02/05/07	95.90		56.61	BBL
		05/07/07	95.51		57.00	BBL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
Cenco-MW107		05/01/02	95.20	149.93	53.73	BBL
		10/01/05	abandoned		n/a	BBL
		02/13/06	reinstalled	146.71	n/a	BBL
		08/02/06	96.88		49.83	BBL
		02/05/07	96.41		50.30	BBL
		05/07/07	96.09		50.62	BBL
Cenco-MW201		05/01/02	84.45	132.91	48.46	BBL
		10/01/05	93.07		39.84	BBL
		02/06/06	91.80		41.11	BBL
		07/06/06	89.88		43.03	BBL
		02/05/07	89.34		43.57	BBL
		05/07/07	88.79		44.12	BBL
Cenco-MW202		05/01/02	88.88	137.89	49.01	BBL
		10/01/05	dry		n/a	BBL
		02/06/06	dry		n/a	BBL
		07/06/06	dry		n/a	BBL
		02/05/07	dry		n/a	BBL
		05/07/07	dry		n/a	BBL
Cenco-MW203		05/01/02	92.96	143.89	50.93	BBL
		10/01/05	abandoned		n/a	BBL
		02/06/06	reinstalled	143.43	n/a	BBL
		07/06/06	94.12		49.31	BBL
		02/05/07	93.84		49.59	BBL
		05/07/07	93.65		49.78	BBL
Cenco-MW204		05/01/02	89.28	140.14	50.86	BBL
		10/01/05	97.86		42.28	BBL
		02/06/06	93.27		46.87	BBL
		07/06/06	95.24		44.90	BBL
		02/05/07	94.32		45.82	BBL
		05/07/07	93.79		46.35	BBL
Cenco-MW205		05/01/02	83.52	138.04	54.52	BBL
		10/01/05	92.00		46.04	BBL
		02/06/06	90.92		47.12	BBL
		07/06/06	88.99		49.05	BBL
		02/05/07	88.52		49.52	BBL
		05/07/07	88.08		49.96	BBL
Cenco-MW501A		05/01/02	85.76	128.70	42.94	BBL
		10/01/05	dry		N/A	BBL
		02/06/06	dry		N/A	BBL
		07/06/06	91.74		36.96	BBL
		02/05/07	91.02		37.68	BBL
		05/07/07	90.39		38.31	BBL
Cenco-MW502		05/01/02	85.70	128.30	42.60	BBL
		10/01/05	94.90		33.40	BBL
		02/06/06	93.40		34.90	BBL
		07/06/06	91.49		36.81	BBL
		02/05/07	90.80		37.50	BBL
		05/07/07	90.15		38.15	BBL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
Cenco-MW503B		05/01/02	86.32	129.96	43.64	BBL
		10/01/05	95.34		34.62	BBL
		02/06/06	93.79		36.17	BBL
		07/06/06	91.93		38.03	BBL
		02/05/07	91.28		38.68	BBL
		05/07/07	90.63		39.33	BBL
Cenco-MW504		05/01/02	87.20	134.51	47.31	BBL
		10/01/05	95.12		39.39	BBL
		02/06/06	93.80		40.71	BBL
		07/06/06	91.81		42.70	BBL
		02/05/07	91.26		43.25	BBL
		05/07/07	90.69		43.82	BBL
Cenco-MW600A		05/01/02	83.20	120.34	37.14	BBL
		10/01/05	92.62		27.72	BBL
		02/06/06	91.15		29.19	BBL
		07/06/06	88.87		31.47	BBL
		02/05/07	88.48		31.86	BBL
		05/07/07	85.61		34.73	BBL
Cenco-MW601A		05/01/02	85.42	126.53	41.11	BBL
		10/01/05	dry		n/a	BBL
		02/06/06	dry		n/a	BBL
		07/06/06	dry		n/a	BBL
		02/05/07	dry		n/a	BBL
		05/07/07	dry		n/a	BBL
Cenco-MW603		05/01/02	80.21	118.54	38.33	BBL
		10/01/05	89.53		29.01	BBL
		02/06/06	88.49		30.05	BBL
		07/06/06	85.88		32.66	BBL
		02/05/07	85.01		33.53	BBL
		05/07/07	84.24		34.30	BBL
Cenco-MW604		05/01/02	96.79	138.16	41.37	BBL
		10/01/05	102.78		35.38	BBL
		02/06/06	dry		n/a	BBL
		07/06/06	dry		n/a	BBL
		02/05/07	101.91		36.25	BBL
		05/07/07	101.28		36.88	BBL
Cenco-MW605		05/01/02	81.84	114.54	32.70	BBL
		10/01/05	91.22		23.32	BBL
		02/06/06	88.91		25.63	BBL
		07/06/06	88.45		26.09	BBL
		02/05/07	86.32		28.22	BBL
		05/07/07	85.54		29.00	BBL
Cenco-MW606		05/01/02	84.69	113.89	29.20	BBL
		10/01/05	94.21		19.68	BBL
		02/06/06	91.98		21.91	BBL
		07/06/06	90.30		23.59	BBL
		02/05/07	89.30		24.59	BBL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		05/07/07	88.40		25.49	BBL
Cenco-MW607		05/01/02	95.30	126.03	30.73	BBL
		10/01/05	104.78		21.25	BBL
		02/06/06	103.34		22.69	BBL
		07/06/06	101.07		24.96	BBL
		02/05/07	100.57		25.46	BBL
		05/07/07	99.61		26.42	BBL
Cenco-W1		05/01/02	96.70	142.89	46.19	BBL
		10/01/05	102.95		39.94	BBL
		02/06/06	102.60		40.29	BBL
		07/06/06	101.48		41.41	BBL
		02/05/07	100.66		42.23	BBL
		05/07/07	100.11		42.78	BBL
Cenco-W4		05/01/02	99.43	142.38	42.95	BBL
		10/01/05	104.36		38.02	BBL
		02/06/06	103.91		38.47	BBL
		07/06/06	102.66		39.72	BBL
		02/05/07	101.82		40.56	BBL
		05/07/07	101.36		41.02	BBL
Cenco-W3A		05/01/02	100.39	124.00	23.61	BBL
		10/01/05	104.55		19.45	BBL
		02/06/06	102.78		21.22	BBL
		07/06/06	101.30		22.70	BBL
		02/05/07	100.62		23.38	BBL
		05/07/07	100.04		23.96	BBL
Cenco-EW1		05/01/02	94.39	112.40	18.01	BBL
		10/01/05	100.12		12.28	BBL
		02/13/06	99.55		12.85	BBL
		08/02/06	98.65		13.75	BBL
		02/05/07	98.16		14.24	BBL
		05/07/07	97.88		14.52	BBL
Cenco-W7		02/06/06	85.63	n/a	n/a	BBL
		07/06/06	85.05		n/a	BBL
		02/05/07	82.98		n/a	BBL
		05/07/07	82.85		n/a	BBL
Cenco-W8		02/06/06	69.11	n/a	n/a	BBL
		07/06/06	67.20		n/a	BBL
		02/05/07	64.04		n/a	BBL
		05/07/07	62.96		n/a	BBL
Cenco-W9		02/05/07	84.65	139.12	54.47	BBL
		05/07/07	84.35		54.77	BBL
Cenco-W10		02/05/07	88.16	139.99	51.83	BBL
		05/07/07	87.60		52.39	BBL
Cenco-W11		02/05/07	91.24	141.29	50.05	BBL
		05/07/07	90.60		50.69	BBL

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
Cenco-W12		02/05/07	93.93	144.42	50.49	BBL
		05/07/07	93.44		50.98	BBL
Angeles MW-10	25 - 40	12/17/02	32.63		116.78	2005 report from DTS
		03/10/03	32.44		116.97	
		06/09/03	30.41		119.00	
		09/09/03	31.68		117.73	
		12/09/03	33.71		115.70	
		03/18/04	34.85		114.56	
		06/14/04	35.08		114.33	
		09/04/04	36.53		112.88	
		12/04/04	35.63		113.78	
		03/15/05	33.41		116.00	
		06/15/05	33.49		115.92	
		09/19/05	33.46		115.95	
		12/16/05	33.00		116.41	
Angeles MW-9	30.5-45.5	06/14/02	30.98		118.18	2005 report from DTS
		10/07/02	34.70		114.46	
		12/17/02	34.67		114.49	
		03/10/03	33.22		115.94	
		06/09/03	31.10		118.06	
		09/09/03	34.29		114.87	
		12/09/03	36.96		112.20	
		03/18/04	38.19		110.97	
		06/14/04	39.15		110.01	
		09/04/04	41.05		108.11	
		12/04/04	41.69		107.47	
		03/15/05	37.82		111.34	
		06/15/05	35.26		113.90	
		09/19/05	32.52		116.64	
		12/16/05	33.56		115.60	
McKesson MW7		02/28/03	41.95	150.16	108.21	geosyntec
		03/10/03	41.68		108.48	geosyntec
		06/09/03	39.77		110.39	geosyntec
		09/16/03	43.85		106.31	geosyntec
		12/09/03	47.14		103.02	geosyntec
		03/16/04	nm		na	geosyntec
		06/15/04	47.60		102.56	geosyntec
		09/13/04	50.15		100.01	geosyntec
		12/09/04	53.73		96.43	geosyntec
		12/16/04	51.96		98.20	geosyntec
		03/09/05	47.70		102.46	geosyntec
		06/06/05	42.35		107.81	geosyntec
		09/19/05	40.23		109.93	geosyntec
Technibraze MW9		03/23/04	36.06	151.18	115.12	LFR
		06/16/04	36.34		114.84	LFR
		09/09/04	37.50		113.68	LFR
		12/01/04	38.63		112.55	LFR
		02/17/05	38.66		112.52	LFR
		05/16/05	31.62		119.56	LFR

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		08/11/05	28.72		122.46	LFR
		11/07/05	29.26		121.92	LFR
Technibraze MW14		03/23/04	37.86	150.65	112.79	LFR
		06/16/04	36.16		114.49	LFR
		09/09/04	37.84		112.81	LFR
		12/01/04	38.94		111.71	LFR
		02/17/05	38.16		112.49	LFR
		05/16/05	30.15		120.50	LFR
		08/11/05	27.98		122.67	LFR
		11/07/05	28.85		121.80	LFR
G&M W-2		11/13/01	43.85	174.10	130.25	Leighton Consulting
		02/14/02	44.31		129.79	Leighton Consulting
		05/21/02	45.20		128.90	Leighton Consulting
		08/14/02	45.72		128.38	Leighton Consulting
		11/12/02	47.06		127.04	Leighton Consulting
		02/13/03	47.68		126.42	Leighton Consulting
		05/12/03	46.98		127.12	Leighton Consulting
		08/15/03	46.91		127.19	Leighton Consulting
		12/09/03	48.48		125.62	Leighton Consulting
		03/09/04	49.80		124.30	Leighton Consulting
		05/20/04	50.03		124.07	Leighton Consulting
		07/28/04	50.68		123.42	Leighton Consulting
		11/12/04	51.95		122.15	Leighton Consulting
		01/20/05	52.50		121.60	Leighton Consulting
		04/13/05	49.90		124.20	Leighton Consulting
G&M W-3		11/04/01	44.39	174.36	129.97	Leighton Consulting
		02/14/02	44.88		129.48	Leighton Consulting
		05/21/02	47.40		126.96	Leighton Consulting
		08/14/02	45.96		128.40	Leighton Consulting
		11/12/02	47.28		127.08	Leighton Consulting
		02/13/03	47.94		126.42	Leighton Consulting
		05/13/03	47.17		127.19	Leighton Consulting
		08/15/03	47.33		127.03	Leighton Consulting
		12/09/03	48.86		125.50	Leighton Consulting
		03/09/04	50.02		124.34	Leighton Consulting
		05/20/04	50.54		123.82	Leighton Consulting
		07/28/04	50.75		123.61	Leighton Consulting
		11/12/04	52.20		122.16	Leighton Consulting
		01/20/05	53.00		121.36	Leighton Consulting
		04/13/05	51.54		122.82	Leighton Consulting
Phibrotech MW1S	47-62.5	01/15/89	55.86	152.60	96.74	CDM
		04/15/89	52.15		100.45	CDM
		07/17/89	53.60		99.00	CDM
		10/23/89	55.84		96.76	CDM
		01/22/90	55.00		97.60	CDM
		04/09/90	53.30		99.30	CDM
		07/10/90	51.77		100.83	CDM
		10/15/90	52.82	152.63	99.81	CDM
		01/07/91	53.44		99.19	CDM
		04/08/91	5.68		146.95	CDM
		07/08/91	49.69		102.94	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		10/21/91	50.30		102.33	CDM
		01/13/92	48.03		104.60	CDM
		03/30/92	45.35		107.28	CDM
		07/13/92	44.76		107.87	CDM
		10/13/92	47.10		105.53	CDM
		01/19/93	43.51		109.12	CDM
		04/19/93	36.62		116.01	CDM
		07/12/93	36.01		116.62	CDM
		10/12/93	36.13		116.50	CDM
		01/10/94	36.03		116.60	CDM
		04/11/94	35.53		117.10	CDM
		07/18/94	34.83		117.80	CDM
		10/10/94	40.40		112.23	CDM
		01/16/95	39.04		113.59	CDM
		04/17/95	33.85		118.78	CDM
		07/10/95	32.57		120.06	CDM
		10/09/95	36.15		116.48	CDM
		01/29/96	37.79		114.84	CDM
		04/15/96	34.60		118.03	CDM
		07/15/96	35.21		117.42	CDM
		10/07/96	38.78		113.85	CDM
		01/13/97	36.90		115.73	CDM
		04/15/97	34.42		118.21	CDM
		07/08/97	34.45		118.18	CDM
		10/14/97	37.81		114.82	CDM
		01/13/98	39.40		113.23	CDM
		04/21/98	34.47		118.16	CDM
		07/14/98	33.51		119.12	CDM
		10/19/98	36.06		116.57	CDM
		01/19/99	38.69		113.94	CDM
		04/20/99	38.62		114.01	CDM
		07/20/99	39.01		113.62	CDM
		10/22/99	45.93		106.70	CDM
		01/25/00	49.90		102.73	CDM
		04/24/00	43.80		108.83	CDM
		10/17/00	43.54		109.09	CDM
		10/25/00	43.54		109.09	CDM
		04/17/01	41.35		111.28	CDM
		07/17/01	41.05		111.58	CDM
		10/16/01	45.20		107.43	CDM
		01/15/02	43.59		109.04	CDM
		04/16/02	43.62		109.01	CDM
		07/24/02	47.79		104.84	CDM
		10/22/02	51.08		101.55	CDM
		01/24/03	49.10		103.53	CDM
		04/23/03	45.29		107.34	CDM
		07/29/03	48.48		104.15	CDM
		10/21/03	54.03		98.60	CDM
		01/21/04	55.49		97.14	CDM
		04/20/04	54.93		97.70	CDM
		07/20/04	57.57		95.06	CDM
		10/11/04	61.36		91.27	CDM
		01/26/05	58.06	152.19	94.13	CDM
		04/26/05	48.60		103.59	CDM
		07/26/05	46.40		105.79	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		10/18/05	47.11		105.08	Iris Environmental
		01/25/06	48.13		104.06	Iris Environmental
		04/25/06	45.23		106.96	Iris Environmental
		07/25/06	45.11		107.08	Iris Environmental
		10/24/06	47.20		104.99	Iris Environmental
Phibrotech MW3	45-75	01/15/89	56.60	151.62	95.02	CDM
		04/15/89	52.33	151.71	99.29	CDM
		07/17/89	53.41	154.75	98.21	CDM
		10/23/89	56.87	154.36	94.75	CDM
		01/22/90	55.77		95.85	CDM
		04/09/90	53.90		97.72	CDM
		07/10/90	52.35		99.27	CDM
		10/15/90	54.42		97.29	CDM
		01/07/91	54.02		97.69	CDM
		04/08/91	51.90		99.81	CDM
		07/08/91	50.08		101.63	CDM
		10/21/91	50.72		100.99	CDM
		01/13/92	48.27		103.44	CDM
		03/30/92	45.67		106.04	CDM
		07/13/92	45.10		106.61	CDM
		10/13/92	47.78		103.93	CDM
		01/19/93	44.43		107.28	CDM
		04/19/93	36.54		115.17	CDM
		07/12/93	35.99		115.72	CDM
		10/12/93	36.04		115.67	CDM
		01/10/94	36.12		115.59	CDM
		04/11/94	35.38		116.33	CDM
		07/18/94	34.80		116.91	CDM
		10/10/94	40.86		110.85	CDM
		01/16/95	39.88		111.83	CDM
		04/17/95	33.88		117.83	CDM
		07/10/95	32.51		119.20	CDM
		10/09/95	36.26		115.45	CDM
		01/29/96	38.30		113.41	CDM
		04/15/96	34.98		116.73	CDM
		07/15/96	35.38		116.33	CDM
		10/07/96	39.26		112.45	CDM
		01/13/97	37.52		114.19	CDM
		04/15/97	34.58		117.13	CDM
		07/08/97	34.53		117.18	CDM
		10/14/97	38.11		113.60	CDM
		01/13/98	4.03		147.68	CDM
		04/21/98	34.89		116.82	CDM
		07/14/98	36.73		118.02	CDM
		10/19/98	39.35		115.40	CDM
		01/19/99	42.27		112.48	CDM
		04/20/99	42.26		112.49	CDM
		07/20/99	42.44		112.31	CDM
		10/22/99	50.33		104.42	CDM
		01/25/00	54.25		100.50	CDM
		04/24/00	47.55		107.20	CDM
		10/17/00	47.29		107.46	CDM
		10/25/00	47.29		107.46	CDM
		04/17/01	44.90		109.85	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		07/17/01	44.40		110.35	CDM
		10/16/01	48.94		105.81	CDM
		01/15/02	47.61		107.14	CDM
		04/16/02	47.20		107.55	CDM
		07/24/02	51.67		103.08	CDM
		10/22/02	55.20		99.55	CDM
		01/24/03	53.09		101.66	CDM
		04/23/03	49.05		105.70	CDM
		07/29/03	52.31		102.44	CDM
		10/21/03	58.33		96.42	CDM
		01/21/04	59.87		94.88	CDM
		04/20/04	58.90		95.85	CDM
		07/20/04	62.00		92.75	CDM
		10/11/04	66.33		88.42	CDM
		01/26/05	62.41		91.95	CDM
		04/26/05	52.35		102.01	CDM
		07/26/05	49.87		104.49	CDM
		10/18/05	50.86		103.50	Iris Environmental
		01/25/06	52.29		102.07	Iris Environmental
		04/25/06	49.20		105.16	Iris Environmental
		07/25/06	48.80		105.56	Iris Environmental
		10/24/06	51.10		103.26	Iris Environmental
Phibrotech MW6B	45-75	01/15/89	54.34	149.46	95.12	CDM
		04/25/89	50.35	149.53	99.11	CDM
		07/17/89	51.07	149.35	98.39	CDM
		10/23/89	54.11		95.35	CDM
		01/22/90	53.49		95.97	CDM
		04/09/90	51.70		97.76	CDM
		07/10/90	50.18		99.28	CDM
		10/15/90	51.08		98.45	CDM
		01/07/91	51.66		97.87	CDM
		01/13/92	46.30		103.23	CDM
		03/30/92	43.67		105.86	CDM
		07/13/92	42.96		106.57	CDM
		10/13/92	45.41		104.12	CDM
		01/19/93	42.30		107.23	CDM
		04/19/93	34.89		114.64	CDM
		07/12/93	34.19		115.34	CDM
		10/12/93	34.07		115.46	CDM
		01/10/94	34.16		115.37	CDM
		04/11/94	33.38		116.15	CDM
		07/18/94	32.86		116.67	CDM
		10/10/94	38.40		111.13	CDM
		01/16/95	37.34		112.19	CDM
		04/17/95	32.11		117.42	CDM
		07/10/95	30.60		118.93	CDM
		10/09/95	34.08		115.45	CDM
		01/29/96	36.06		113.47	CDM
		04/15/96	32.88		116.65	CDM
		07/15/96	33.35		116.18	CDM
		10/07/96	36.87		112.66	CDM
		01/13/97	35.33		114.20	CDM
		04/15/97	32.58		116.95	CDM
		07/08/97	32.52		117.01	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		10/14/97	35.82		113.71	CDM
		01/13/98	37.47		112.06	CDM
		04/21/98	32.77		116.76	CDM
		07/14/98	31.58		117.95	CDM
		10/19/98	34.70		114.83	CDM
		01/19/99	36.79		112.74	CDM
		04/20/99	36.97		112.56	CDM
		07/20/99	37.10		112.43	CDM
		10/22/99	44.49		105.04	CDM
		01/25/00	48.27		101.26	CDM
		04/24/00	42.32		107.21	CDM
		10/17/00	41.98		107.55	CDM
		10/25/00	41.98		107.55	CDM
		04/17/01	39.72		109.81	CDM
		07/17/01	39.24		110.29	CDM
		10/16/01	43.47		106.06	CDM
		01/15/02	42.52		107.01	CDM
		04/16/02	41.95		107.58	CDM
		07/24/02	46.09		103.44	CDM
		10/22/02	49.50		100.03	CDM
		01/24/03	47.83		101.70	CDM
		04/23/03	43.98		105.55	CDM
		07/29/03	46.75		102.78	CDM
		10/21/03	42.29		107.24	CDM
		01/21/04	54.05		95.48	CDM
		04/20/04	53.45		96.08	CDM
		07/20/04	56.15		93.38	CDM
		10/11/04	59.91		89.62	CDM
		01/26/05	57.39		91.96	CDM
		04/26/05	47.80		101.55	CDM
		07/26/05	45.00		104.35	CDM
		10/18/05	45.82		103.53	Iris Environmental
		01/25/06	47.10		102.25	Iris Environmental
		04/25/06	44.25		105.10	Iris Environmental
		07/25/06	43.70		105.65	Iris Environmental
		10/24/06	45.84		103.51	Iris Environmental
Phibrotech MW8	41-71	01/15/89	54.69	149.53	94.84	CDM
		04/25/89	50.47		99.06	CDM
		07/17/89	51.40		98.13	CDM
		10/23/89	54.63		94.90	CDM
		01/22/90	53.91		95.62	CDM
		04/09/90	52.02		97.51	CDM
		07/10/90	50.45		99.08	CDM
		10/15/90	51.47	149.98	98.51	CDM
		01/07/91	52.05		97.93	CDM
		01/19/93	42.58		107.40	CDM
		04/19/93	34.92		115.06	CDM
		07/12/93	34.34		115.64	CDM
		10/12/93	34.33		115.65	CDM
		01/10/94	34.39		115.59	CDM
		04/11/94	33.63		116.35	CDM
		07/18/94	33.10		116.88	CDM
		10/10/94	38.92		111.06	CDM
		01/16/95	37.84		112.14	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		04/17/95	32.22		117.76	CDM
		07/10/95	30.81		119.17	CDM
		10/09/95	34.45		115.53	CDM
		01/29/96	36.40		113.58	CDM
		04/15/96	33.10		116.88	CDM
		07/15/96	33.59		116.39	CDM
		10/07/96	37.31		112.67	CDM
		01/13/97	35.66		114.32	CDM
		04/15/97	32.80		117.18	CDM
		07/08/97	32.73		117.25	CDM
		10/14/97	36.24		113.74	CDM
		01/13/98	38.02		111.96	CDM
		04/21/98	33.03		116.95	CDM
		07/14/98	32.05	150.17	118.12	CDM
		10/19/98	34.61		115.56	CDM
		01/19/99	37.40		112.77	CDM
		04/20/99	37.50		112.67	CDM
		07/20/99	37.63		112.54	CDM
		10/22/99	45.29		104.88	CDM
		01/25/00	49.05		101.12	CDM
		04/24/00	42.73		107.44	CDM
		10/17/00	42.25		107.92	CDM
		10/25/00	42.25		107.92	CDM
		04/17/01	40.23		109.94	CDM
		07/17/01	39.70		110.47	CDM
		10/16/01	44.08		106.09	CDM
		01/15/02	42.92		107.25	CDM
		04/16/02	42.42		107.75	CDM
		07/24/02	46.73		103.44	CDM
		10/22/02	50.20		99.97	CDM
		01/24/03	48.28		101.89	CDM
		04/23/03	48.28		101.89	CDM
		07/29/03	47.38		102.79	CDM
		10/21/03	53.17		97.00	CDM
		01/21/04	54.75		95.42	CDM
		04/20/04	54.10		96.07	CDM
		07/20/04	57.00		93.17	CDM
		10/11/04	60.77		89.40	CDM
		01/26/05	57.50	149.70	92.20	CDM
		04/26/05	47.57		102.13	CDM
		07/26/05	45.05		104.65	CDM
		10/18/05	46.20		103.50	Iris Environmental
		01/25/06	47.21		102.49	Iris Environmental
		04/25/06	44.35		105.35	Iris Environmental
		07/25/06	43.90		105.80	Iris Environmental
		10/24/06	46.12		103.58	Iris Environmental
Phibrotech MW11	55-75	01/15/89	56.83	152.80	95.97	CDM
		04/25/89	52.95		99.85	CDM
		07/17/89	53.85		98.95	CDM
		10/23/89	57.03		95.77	CDM
		01/22/90	56.21		96.59	CDM
		04/09/90	54.36		98.44	CDM
		07/10/90	52.80		100.00	CDM
		10/15/90	53.84	152.81	98.97	CDM

TABLE 3-1

OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		01/07/91	54.52		98.29	CDM
		04/08/91	51.64		101.17	CDM
		07/08/91	50.62		102.19	CDM
		10/21/91	51.20		101.61	CDM
		01/13/92	48.72		104.09	CDM
		03/30/92	46.20		106.61	CDM
		07/13/92	45.69		107.12	CDM
		10/13/92	48.26		104.55	CDM
		01/19/93	44.54		108.27	CDM
		04/19/93	37.21		115.60	CDM
		07/12/93	36.74		116.07	CDM
		10/12/93	36.80		116.01	CDM
		01/10/94	36.78		116.03	CDM
		04/11/94	35.98		116.83	CDM
		07/18/94	35.58		117.23	CDM
		10/10/94	41.51		111.30	CDM
		01/16/95	40.28		112.53	CDM
		04/17/95	34.55		118.26	CDM
		07/10/95	33.30		119.51	CDM
		10/09/95	37.01		115.80	CDM
		01/29/96	38.83		113.98	CDM
		04/15/96	35.44		117.37	CDM
		07/15/96	36.06		116.75	CDM
		10/07/96	39.86		112.95	CDM
		01/13/97	38.03		114.78	CDM
		04/15/97	35.21		117.60	CDM
		07/08/97	35.20		117.61	CDM
		10/14/97	38.79		114.02	CDM
		01/13/98	40.58		112.23	CDM
		04/21/98	35.45		117.36	CDM
		07/14/98	37.19	155.76	118.57	CDM
		10/19/98	39.85		115.91	CDM
		01/19/99	42.71		113.05	CDM
		04/20/99	42.62		113.14	CDM
		07/20/99	42.88		112.88	CDM
		10/22/99	50.71		105.05	CDM
		01/25/00	54.45		101.31	CDM
		04/24/00	47.85		107.91	CDM
		10/17/00	47.70		108.06	CDM
		10/25/00	47.70		108.06	CDM
		04/17/01	45.29		110.47	CDM
		07/17/01	44.90		110.86	CDM
		10/16/01	49.34		106.42	CDM
		01/15/02	48.00		107.76	CDM
		04/16/02	47.56		108.20	CDM
		07/24/02	52.00		103.76	CDM
		10/22/02	55.44		100.32	CDM
		01/24/03	53.28		102.48	CDM
		04/23/03	49.35		106.41	CDM
		07/29/03	52.68		103.08	CDM
		10/21/03	58.53		97.23	CDM
		01/21/04	59.97		95.79	CDM
		04/20/04	59.11		96.65	CDM
		07/20/04	62.60		93.16	CDM
		10/11/04	66.32		89.44	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		01/26/05	62.60	155.45	92.85	CDM
		04/26/05	52.75		102.70	CDM
		07/26/05	50.26		105.19	CDM
		10/18/05	51.35		104.10	Iris Environmental
		01/25/06	52.62		102.83	Iris Environmental
		04/25/06	49.50		105.95	Iris Environmental
		07/25/06	49.25		106.20	Iris Environmental
		10/24/06	51.51		103.94	Iris Environmental
Phibrotech MW12S	51-72	10/15/90	53.36	152.64	99.28	CDM
		01/07/91	53.80		98.84	CDM
		01/13/92	48.24		104.40	CDM
		03/30/92	45.64		107.00	CDM
		07/13/92	45.10		107.54	CDM
		10/13/92	47.68		104.96	CDM
		01/19/93	44.30		108.34	CDM
		04/19/93	36.73		115.91	CDM
		07/12/93	36.30		116.34	CDM
		10/12/93	30.27		122.37	CDM
		01/10/94	36.24		116.40	CDM
		04/11/94	35.53		117.11	CDM
		07/18/94	35.08		117.56	CDM
		10/10/94	40.94		111.70	CDM
		01/16/95	39.70		112.94	CDM
		04/17/95	34.06		118.58	CDM
		07/10/95	32.80		119.84	CDM
		10/09/95	36.55		116.09	CDM
		01/29/96	38.21		114.43	CDM
		04/15/96	34.91		117.73	CDM
		07/15/96	35.53		117.11	CDM
		10/07/96	39.28		113.36	CDM
		01/13/97	37.38		115.26	CDM
		04/15/97	34.70		117.94	CDM
		07/08/97	34.68		117.96	CDM
		10/14/97	38.22		114.42	CDM
		01/13/98	39.96		112.68	CDM
		04/21/98	34.83		117.81	CDM
		07/14/98	36.96	155.79	118.83	CDM
		10/19/98	39.53		116.26	CDM
		01/19/99	42.29		113.50	CDM
		04/20/99	42.29		113.50	CDM
		07/20/99	42.55		113.24	CDM
		10/22/99	50.27		105.52	CDM
		01/25/00	53.89		101.90	CDM
		04/24/00	47.44		108.35	CDM
		10/17/00	47.27		108.52	CDM
		10/25/00	47.27		108.52	CDM
		04/17/01	44.92		110.87	CDM
		07/17/01	44.49		111.30	CDM
		10/16/01	48.25		107.54	CDM
		01/15/02	47.60		108.19	CDM
		04/16/02	47.19		108.60	CDM
		07/24/02	51.59		104.20	CDM
		10/22/02	55.01		100.78	CDM
		01/24/03	52.84		102.95	CDM

TABLE 3-1
OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		04/23/03	49.00		106.79	CDM
		07/29/03	52.27		103.52	CDM
		10/21/03	58.10		97.69	CDM
		01/21/04	59.53		96.26	CDM
		04/20/04	58.80		96.99	CDM
		07/20/04	61.83		93.96	CDM
		10/11/04	65.64		90.15	CDM
		01/26/05	61.71	155.16	93.45	CDM
		04/26/05	51.95		103.21	CDM
		07/26/05	49.50		105.66	CDM
		10/18/05	50.65		104.51	Iris Environmental
		01/25/06	51.75		103.41	Iris Environmental
		04/25/06	48.75		106.41	Iris Environmental
		07/25/06	48.52		106.64	Iris Environmental
		10/24/06	50.80		104.36	Iris Environmental
Phibrotech MW15S	51.5-71.5	10/15/90	53.30	151.01	97.71	CDM
		01/07/91	53.91		97.10	CDM
		04/08/91	51.13		99.88	CDM
		07/08/91	50.07		100.94	CDM
		10/21/91	50.66		100.35	CDM
		01/13/92	48.26		102.75	CDM
		03/30/92	45.72		105.29	CDM
		07/13/92	45.06		105.95	CDM
		10/13/92	42.64		108.37	CDM
		01/19/93	44.43		106.58	CDM
		04/19/93	36.60		114.41	CDM
		07/12/93	36.00		115.01	CDM
		10/12/93	35.94		115.07	CDM
		01/10/94	36.11		114.90	CDM
		04/11/94	35.29		115.72	CDM
		07/18/94	34.70		116.31	CDM
		10/10/94	40.59		110.42	CDM
		02/08/95	39.84		111.17	CDM
		04/17/95	33.86		117.15	CDM
		07/10/95	32.40		118.61	CDM
		10/09/95	36.06		114.95	CDM
		01/29/96	38.32		112.69	CDM
		04/15/96	34.92		116.09	CDM
		07/15/96	35.32		115.69	CDM
		10/07/96	39.20		111.81	CDM
		01/13/97	37.59		113.42	CDM
		04/15/97	34.66		116.35	CDM
		07/08/97	34.41		116.60	CDM
		10/14/97	37.93		113.08	CDM
		01/13/98	39.95		111.06	CDM
		04/21/98	34.96		116.05	CDM
		07/14/98	33.54		117.47	CDM
		10/19/98	36.14		114.87	CDM
		01/19/99	39.03		111.98	CDM
		04/20/99	39.16		111.85	CDM
		07/20/99	39.12		111.89	CDM
		10/22/99	46.94		104.07	CDM
		01/25/00	50.92		100.09	CDM
		04/24/00	44.45		106.56	CDM

TABLE 3-1

OPOG and EPA Historical Groundwater Elevations

Well ID	Screen Interval (ft BGS)	Date	Depth to Water (ft)	Measuring Point Elevation (ft)	Water Level Elevation (ft)	Consultant/Source
		10/17/00	44.19		106.82	CDM
		10/25/00	44.19		106.82	CDM
		04/17/01	41.88		109.13	CDM
		07/17/01	41.17		109.84	CDM
		10/16/01	45.74		105.27	CDM
		01/15/02	44.64		106.37	CDM
		04/16/02	44.02		106.99	CDM
		07/24/02	48.44		102.57	CDM
		10/22/02	51.98		99.03	CDM
		01/24/03	50.10		100.91	CDM
		04/23/03	46.02		104.99	CDM
		07/29/03	49.02		101.99	CDM
		10/21/03	55.02		95.99	CDM
		01/21/04	56.77		94.24	CDM
		04/20/04	55.88		95.13	CDM
		07/20/04	58.85		92.16	CDM
		10/11/04	63.02		87.99	CDM
		01/26/05	59.66	150.74	91.08	CDM
		04/26/05	49.63		101.11	CDM
		07/26/05	46.96		103.78	CDM
		10/18/05	47.85		102.89	Iris Environmental
		01/25/06	49.32		101.42	Iris Environmental
		04/25/06	46.37		104.37	Iris Environmental
		07/25/06	45.86		104.88	Iris Environmental
		10/24/06	48.50		102.24	Iris Environmental

TABLE 3-2

Summary of 2009 First Quarter and Third Quarter Vertical Gradients of OPOG and EPA Cluster Wells

	Screen Location		Water Level		Vertical Gradient		
Well ID	Top Screen	Bottom Screen	1st Quarter 2009	3rd Quarter 2009	Adjacent Screens	1st Quarter 2009	3rd Quarter 2009
MW1A	112.81	97.81	113.39	111.01	MW1A-MW1B	-0.0168	-0.0177
MW1B	83.10	72.70	113.85	111.48			
MW4A	104.32	94.02	111.65	109.60	MW4A-MW4B	-0.0070	-0.0052
MW4B	77.30	67.00	111.84	109.74	MW4B-MW4C	0.1322	0.1655
MW4C	58.69	48.39	109.38	106.66			
MW8A	120.44	105.44	109.54	NA	MW8A-MW8B	0.0004	NA
MW8B	85.33	75.33	109.53	107.63	MW8B-MW8C	0.0620	0.0828
MW8C	63.63	58.63	108.34	106.04	MW8C-MW8D	0.2623	0.3410
MW8D	40.09	30.09	101.51	97.16			
MW9A	123.88	113.88	114.33	dry	MW9A-MW9B	0.6052	NA
MW9B	99.26	89.06	102.26	99.49			
MW16A	108.47	93.47	NA	NA	MW16A-MW16B	NA	NA
MW16B	47.47	37.47	89.40	85.84	MW16B-MW16C	0.0367	0.0796
MW16C	4.47	-10.53	87.73	82.22			
MW17A	103.40	88.40	NA	NA	MW17A-MW17B	NA	NA
MW17B	65.40	55.40	78.65	75.99	MW17B-MW17C	0.0551	0.2165
MW17C	-12.60	-22.60	74.35	59.10			
MW18A	88.32	73.32	107.09	104.73	MW18A-MW18B	-0.0013	0.0019
MW18B	54.32	44.32	107.13	104.67	MW18B-MW18C	0.0338	0.0665
MW18C	-1.68	-16.68	105.15	100.78			
MW20A	67.07	52.07	59.36	56.39	MW20A-MW20B	0.0133	0.0174
MW20B	20.07	10.07	58.82	55.71	MW20B-MW20C	0.1962	NA
MW20C	-37.93	-47.93	47.44	NA			
MW23A	114.07	94.07	109.38	107.45	MW23A-MW23B	0.0306	0.0413
MW23B	67.36	52.36	108.10	105.76	MW23B-MW23C	0.0700	0.0959
MW23C	4.36	-10.64	103.69	99.72	MW23C-MW23D	0.0695	0.0756
MW23D	-25.64	-35.64	101.78	97.64			
MW24A	112.44	92.44	115.62	113.22	MW24A-MW24B	0.1282	0.1703
MW24B	52.44	37.44	108.25	103.43	MW24B-MW24C	0.0043	0.0043
MW24C	22.44	2.44	108.11	103.29	MW24C-MW24D	0.0165	0.0329
MW24D	-10.56	-15.56	107.69	102.45			
MW25A	103.25	83.25	96.40	93.84	MW25A-MW25B	0.0106	0.0226
MW25B	58.25	38.25	95.96	92.93	MW25B-MW25C	0.0489	0.1171
MW25C	8.25	-1.75	93.76	87.66	MW25C-MW25D	0.1200	NA
MW25D	-45.75	-60.75	86.98	NA			
MW26A	85.98	65.98	73.20	70.46	MW26A-MW26B	0.0149	0.0117
MW26B	50.98	35.98	72.81	70.17	MW26B-MW26C	0.1533	0.3790
MW26C	10.98	-4.02	66.68	55.01	MW26C-MW26D	-0.0254	NA
MW26D	-29.02	-49.02	67.76	NA			
MW27A	49.47	29.47	51.19	48.04	MW27A-MW27B	0.0000	0.0004
MW27B	-4.53	-24.53	51.19	48.02	MW27B-MW27C	0.4948	0.7019
MW27C	-40.53	-50.53	35.85	26.26	MW27C-MW27D	-0.0305	NA
MW27D	-60.53	-70.53	36.46	NA			
OW1A	146.99	132.49	134.33	123.71	OW1A-OW1B	0.0906	0.1078
OW1B	97.37	87.37	130.61	119.86			
OW3A	136.08	116.08	131.53	123.84	OW3A-OW3B	0.4640	0.4182
OW3B	85.77	75.77	111.56	107.45			
OW4A	135.13	115.13	120.14	117.95	OW4A-OW4B	0.1794	0.2222
OW4B	72.95	62.65	111.20	107.12			
OW8A	140.80	121.20	140.80	121.2	OW8A-OW8B	0.4253	0.3245
OW8B	85.43	75.43	85.43	75.43			

TABLE 3-3a
Summary of Detections - First Quarter 2008
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	12	0.50 to 5.00	0.2 J to 2600	OW1A	200	1	CA/USEPA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	44	0.50 to 5000	0.23 J to 1200	OW8A	1200	0	CA/USEPA Primary MCL
1,1,2-Trichloroethane	7	0.50 to 50.0	0.21 J to 0.8	MW23A	5	0	CA/USEPA Primary MCL
1,1-Dichloroethane	26	0.50 to 5.00	0.22 J to 100	MW17A	5	7	CA Primary MCL
1,1-Dichloroethene	50	0.50 to 1.00	0.21 J to 1000	OW1A	6	34	CA Primary MCL
1,2-Dichlorobenzene	1	0.50 to 50.0	0.22 J	MW6	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	20	0.50 to 500	0.94 to 280	EW-2	0.5	20	CA Primary MCL
Benzene	5	0.50 to 500	0.21 J to 0.29 J	MW23A	1	0	CA Primary MCL
Carbon tetrachloride	4	0.50 to 500	0.2 J to 0.37 J	MW17C	0.5	0	CA Primary MCL
Chloroform	44	0.50 to 1000	0.23 J to 1100	EW-2	80	6	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	40	0.50 to 50.0	0.24 J to 170 J	MW17A	6	15	CA Primary MCL
cis-1,3-Dichloropropene	1	0.50 to 500	0.21 J	MW26C	0.5	0	CA Primary MCL for 1,3-dichloropropene
Dichlorodifluoromethane (Freon 12)	13	0.50 to 5000	0.25 J to 2.9	MW15	1000	0	CA Department of Health Services State notification
Dichlorotrifluoroethane	1	NA	4.2 J	OW1B	NE	0	
Methyl tert-butyl ether	19	0.50 to 5.00	0.2 J to 3.9	MW30	13	0	CA Primary MCL
Methylene chloride	4	0.50 to 5000	5 J to 480 J	OW1A	5	3	CA/USEPA Primary MCL
Tetrachloroethene	66	0.5	0.2 J to 170000 J	OW1A	5	48	CA/USEPA Primary MCL
trans-1,2-Dichloroethene	15	0.50 to 50.0	0.22 J to 56 J	MW23A	10	5	CA Primary MCL
Trichloroethene	62	0.50 to 1.00	0.28 J to 3800	OW1A	5	43	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	38	0.50 to 50.0	0.65 to 370	MW15	150	7	CA Primary MCL
Vinyl chloride	2	0.50 to 500	0.4 J to 0.43 J	MW27B	0.5	0	CA Primary MCL

Notes:
J = Estimated value
µg/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

TABLE 3-3b
Summary of Detections - First Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	7	0.50 to 20.0	0.23 J to 2000	OW1A	200	2	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	1	0	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	43	0.50 to 5000	0.3 J to 1700	OW8A	1200	1	CA/USEPA Primary MCL
1,1,2-Trichloroethane	4	0.50 to 20.0	0.5 J to 90 J	OW8A	5	1	CA/USEPA Primary MCL
1,1-Dichloroethane	23	0.50 to 20.0	0.2 J to 74 J	OW8A	5	5	CA Primary MCL
1,1-Dichloroethene	49	0.50 to 1.00	0.22 J to 1500	OW9	6	32	CA Primary MCL
1,2,3-Trichlorobenzene	6	0.50 to 20.0	0.5 J	MW10, MW8D	NE	0	
1,2,4-Trichlorobenzene	6	0.50 to 20.0	0.5 J	MW10, MW8D	5	0	CA Primary MCL
1,2-Dibromo-3-chloropropane	5	0.50 to 5000	0.5 J	MW1A, MW8D	0.200000003	5	CA/USEPA Primary MCL
1,2-Dibromoethane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	0.050000001	3	CA/USEPA Primary MCL
1,2-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 11 J	OW1B	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	11	0.50 to 500	0.5 J to 310	OW8A	0.5	9	CA Primary MCL
1,2-Dichloropropane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	5	0	CA/USEPA Primary MCL
1,3-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 0.52 J	OW1B	600	0	CA Department of Health Services State notification
1,4-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 1.4 J	OW1B	5	0	CA Primary MCL
2-Hexanone	3	5	5 J	MW1A, MW8D	NE	0	
Benzene	4	0.50 to 500	0.44 J to 21 J	OW1B	1	1	CA Primary MCL
Bromochloromethane	2	0.50 to 20.0	0.5 J	MW8C, MW8D	NE	0	
Bromodichloromethane	4	0.50 to 20.0	0.5 J to 0.91 J	OW7	80	0	CA/USEPA Primary MCL
Bromoform	7	0.50 to 20.0	0.5 J to 0.99 J	OW7	80	0	CA/USEPA Primary MCL
Carbon disulfide	2	0.5	0.5 J	MW8C, MW8D	160	0	CA Department of Health Services State notification
Carbon tetrachloride	3	0.50 to 500	0.23 J to 0.5 J	MW1A, MW8C	0.5	0	CA Primary MCL
Chlorobenzene	4	0.50 to 20.0	0.5 J to 2.7 J	OW1B	70	0	CA Primary MCL
Chloroethane	2	0.50 to 20.0	0.5 J	MW8C, MW8D	16	0	Other taste and Odor
Chloroform	37	0.50 to 1000	0.21 J to 1100	OW9	80	2	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	34	0.50 to 20.0	0.22 J to 170 J	MW1A	6	9	CA Primary MCL
cis-1,3-Dichloropropene	3	0.50 to 500	0.5 J	MW1A, MW8D	0.5	0	CA Primary MCL for 1,3-dichloropropene
Dibromochloromethane	5	0.50 to 20.0	0.5 J to 1.2	OW7	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	3	0.50 to 5000	0.42 J to 0.5 J	MW8C, MW8D	1000	0	CA Department of Health Services State notification
Ethylbenzene	4	0.50 to 20.0	0.5 J to 1.5 J	OW1B	300	0	CA Primary MCL
Isopropylbenzene	4	0.50 to 20.0	0.5 J to 2.3 J	OW1B	770	0	CA Department of Health Services State notification
m,p-Xylenes	4	0.50 to 20.0	0.5 J to 1.1 J	OW1B	1750	0	CA Primary MCL
Methyl cyclohexane	4	0.5	0.5 J to 1.1	MW27B	NE	0	
Methyl isobutyl ketone	3	5	5 J	MW1A, MW8D	120	0	CA Department of Health Services State notific
Methyl tert-butyl ether	5	0.50 to 20.0	0.28 J to 1.1	MW30	13	0	CA Primary MCL
Methylene chloride	4	0.50 to 5000	0.5 J to 1200	OW8A	5	2	CA/USEPA Primary MCL
o-Xylene	4	0.50 to 20.0	0.5 J to 1.2 J	OW1B	1750	0	CA Primary MCL
Styrene	3	0.50 to 20.0	0.5 J	MW1A, MW8D	100	0	CA/USEPA Primary MCL
Tetrachloroethene	61	0.5	0.21 J to 150000	OW1A	5	45	CA/USEPA Primary MCL
Toluene	5	0.50 to 20.0	0.5 J to 38 J	OW1B	150	0	CA Primary MCL
trans-1,2-Dichloroethene	12	0.50 to 20.0	0.2 J to 49 J	OW8A	10	1	CA Primary MCL

TABLE 3-3b
Summary of Detections - First Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
trans-1,3-Dichloropropene	3	0.50 to 500	0.5 J	MW1A, MW8D	0.5	0	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	57	0.50 to 1.00	0.33 J to 11000 J	OW1B	5	41	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	40	0.50 to 1000	0.5 J to 280	OW9	150	3	CA Primary MCL
Vinyl chloride	3	0.50 to 500	0.5 J to 0.9	MW27A	0.5	1	CA Primary MCL

Notes:
J = Estimated value
µg/L = micrograms per Liter

NE = Not Established
NA = Not Applicable

TABLE 3-3c
Summary of Detections - Third Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	6	0.50 to 5.00	0.13 J to 1900	OW1a	200	1	CA/USEPA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	48	0.50 to 5.00	0.15 J to 710	OW9	1200	0	CA/USEPA Primary MCL
1,1,2-Trichloroethane	2	0.50 to 5.00	0.16 J to 13	MW27A	5	1	CA/USEPA Primary MCL
1,1-Dichloroethane	28	0.50 to 5.00	0.12 J to 46 J	OW9	5	7	CA Primary MCL
1,1-Dichloroethene	45	0.50 to 1.00	0.45 J to 1600	OW9	6	35	CA Primary MCL
1,2-Dichlorobenzene	1	0.50 to 5.00	18	OW1a	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	9	0.50 to 5.00	0.47 J to 250	OW9	0.5	8	CA Primary MCL
1,2-Dichloropropane	2	0.50 to 5.00	0.51 to 5.1	MW20A	5	1	CA/USEPA Primary MCL
Benzene	2	0.50 to 50.0	0.29 J to 6.2	OW1a	1	1	CA Primary MCL
Bromodichloromethane	5	0.50 to 5.00	0.12 J to 0.97 J	OW7	80	0	CA/USEPA Primary MCL
Bromoform	1	0.50 to 5.00	0.14 J	MW2	80	0	CA/USEPA Primary MCL
Carbon disulfide	1	0.50 to 5.00	7.3 J	MW1A	160	0	CA Department of Health Services State notification
Carbon tetrachloride	13	0.50 to 50.0	0.11 J to 0.36 J	MW16B	0.5	0	CA Primary MCL
Chlorobenzene	1	0.50 to 5.00	6.8 J	OW1a	70	0	CA Primary MCL
Chloroethane	1	0.50 to 5.00	0.31 J	MW12	16	0	Other taste and Odor
Chloroform	46	0.50 to 2.00	0.24 J to 1100	OW9	80	3	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	40	0.50 to 5.00	0.16 J to 110	MW12	6	16	CA Primary MCL
Dibromochloromethane	2	0.50 to 5.00	0.12 J to 0.96 J	OW7	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	9	0.50 to 500	0.11 J to 0.9 J	MW23C	1000	0	CA Department of Health Services State notification
Methyl cyclohexane	1	0.50 to 5.00	13	MW27A	NE	0	
Methyl tert-butyl ether	22	0.50 to 5.00	0.12 J to 2.3 J	MW23C	13	0	CA Primary MCL
Methylene chloride	2	0.50 to 500	0.58 J to 33 J	OW1a	5	1	CA/USEPA Primary MCL
Tetrachloroethene	61	0.5	0.23 J to 240000	OW1a	5	45	CA/USEPA Primary MCL
Toluene	2	0.50 to 5.00	2.3 J to 9.4 J	OW1a	150	0	CA Primary MCL
trans-1,2-Dichloroethene	19	0.50 to 5.00	0.11 J to 11	OW1a	10	1	CA Primary MCL
Trichloroethene	61	0.50 to 1.00	0.11 J to 2300	OW1a	5	40	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	40	0.50 to 5.00	0.1 J to 260	OW9	150	2	CA Primary MCL
Vinyl chloride	3	0.50 to 50.0	0.15 J to 2.8	MW27A	0.5	1	CA Primary MCL

Notes:
J = Estimated value
µg/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

TABLE 3-4

Statistics of Freon 113 and Freon 11 Ratios

Well ID	Sample Size	Statistics of Freon 113/Freon 11 Ratio							
		Minimum	Maximum	Median	Mean	Standard Deviation	95% LCL	95% UCL	COV
MW7	4	12.0	28.8	20.0	20.2	7.98	7.5	32.9	0.40
OW1A	35	9.5	9.5	9.5	9.5	2.09	9.5	9.5	1.00
OW4B	11	5.0	15.5	8.5	10.0	4.11	7.2	12.7	0.41
MW1B	16	2.3	7.3	4.1	4.2	1.28	3.5	4.9	0.30
MW23B	5	3.0	25.5	4.1	8.2	9.75	-3.9	20.3	1.19
MW1A	18	2.1	9.0	3.5	4.4	2.11	3.4	5.5	0.48
OW2	46	1.0	6.5	3.5	3.6	1.34	3.2	4.0	0.37
OW9	5	2.7	4.0	3.4	3.5	0.51	2.8	4.1	0.15
OW5	48	1.1	5.9	3.4	3.5	1.06	3.2	3.8	0.30
MW16A	4	2.0	3.6	3.4	3.1	0.76	1.9	4.3	0.24
MW8B	2	3.2	3.5	3.4	3.4	0.25	1.2	5.6	0.07
OW8A	55	2.1	8.6	3.1	3.6	1.49	3.2	4.0	0.42
MW25C	4	2.3	3.6	3.1	3.0	0.56	2.2	3.9	0.18
OW1B	26	2.3	5.5	3.1	3.4	0.76	3.1	8.7	0.26
MW24D	2	2.8	3.3	3.0	3.0	0.34	0.0	6.0	0.11
MW11	4	0.3	5.0	3.0	2.8	2.52	-1.2	6.8	0.89
MW12	1	3.0	3.0	3.0	3.0		3.0	3.0	1.00
MW26D	1	3.0	3.0	3.0	3.0		3.0	3.0	1.00
MW8C	3	0.6	5.4	3.0	3.0	2.40	-3.0	9.0	0.80
MW23C	13	2.1	3.6	2.9	2.9	0.40	2.7	3.1	0.14
MW23A	6	2.5	5.5	2.8	3.4	1.25	2.1	4.7	0.37
MW4C	21	1.7	4.3	2.8	2.9	0.62	2.6	3.1	0.22
MW23D	4	2.2	3.5	2.8	2.8	0.51	2.0	3.6	0.18
MW27A	6	2.2	6.4	2.8	3.7	1.98	1.7	5.8	0.53
MW14	9	1.4	3.3	2.7	2.6	0.60	2.2	3.1	0.23
MW25A	7	2.5	5.1	2.7	3.2	1.01	2.3	4.1	0.32
MW4B	25	0.2	4.3	2.7	2.6	0.86	2.3	3.0	0.32
MW2	22	1.9	3.4	2.6	2.7	0.39	2.5	2.8	0.14
MW24B	1	2.6	2.6	2.6	2.6		2.6	2.6	1.00
MW5	23	2.1	4.2	2.6	2.7	0.43	2.5	2.9	0.16
MW25B	6	1.6	3.8	2.5	2.6	0.74	1.9	3.4	0.28
MW16B	9	2.0	4.2	2.5	2.6	0.65	2.1	3.1	0.25
MW15	14	2.1	2.8	2.5	2.5	0.22	2.3	2.6	0.09
MW4A	28	0.2	4.7	2.4	2.4	0.71	2.2	2.7	0.29
MW26C	7	1.5	3.2	2.3	2.3	0.58	1.8	2.9	0.25
MW26B	7	1.7	2.4	2.2	2.1	0.29	1.8	2.4	0.14
MW17B	11	1.6	2.8	2.2	2.2	0.35	2.0	2.5	0.16
MW20A	10	1.2	2.7	2.2	2.1	0.45	1.8	2.5	0.21
MW20B	8	1.7	2.8	2.2	2.3	0.42	1.9	2.6	0.19
OW4A	43	1.0	2.7	2.2	2.1	0.35	2.0	2.2	0.17
OW8B	1	2.2	2.2	2.2	2.2		2.2	2.2	1.00
MW10	21	1.5	14.0	2.1	2.8	2.66	1.6	4.0	0.96
MW6	4	1.7	6.3	2.1	3.1	2.18	-0.4	6.5	0.72
MW24A	7	1.7	3.9	2.1	2.7	0.99	1.8	3.6	0.36
MW24C	5	1.7	2.8	2.1	2.1	0.43	1.6	2.7	0.20
OW10	2	1.7	2.3	2.0	2.0	0.40	-1.6	5.6	0.20
MW8D	10	1.5	2.3	1.9	1.9	0.21	1.8	2.1	0.11
MW17A	4	1.0	3.3	1.9	2.0	0.98	0.4	3.6	0.49

TABLE 3-4

Statistics of Freon 113 and Freon 11 Ratios

Well ID	Sample Size	Statistics of Freon 113/Freon 11 Ratio							
		Minimum	Maximum	Median	Mean	Standard Deviation	95% LCL	95% UCL	COV
MW26A	6	1.6	2.8	1.9	2.1	0.53	1.5	2.6	0.26
OW6	46	1.2	3.0	1.8	2.0	0.56	1.8	2.2	0.28
OW3A	48	1.4	2.1	1.6	1.6	0.24	1.5	1.6	1.00
MW9B	1	1.3	1.3	1.3	1.3		1.3	1.3	1.00
OW7	33	0.5	1.7	1.2	1.2	0.25	1.1	1.3	0.21
MW9A	1	1.1	1.1	1.1	1.1		1.1	1.1	1.00

Explanation

95% LCL - Lower 95% Confidence Limit

95% UCL - Upper 95% Confidence Limit

COV - Coefficient of Variation

The table is sorted by the median ratio.

TABLE 3-5

Summary Matrix of Trend Analysis

LOCID	TCE	FC113	DIOXANE14	DCE12C	TCA111	FC11	PCE	DCE11	TBUTMEE	TCLME	DCA12	DCA11	DCE12T	TCA112	BZ	FC12	MTLNCL	ACE	DCBZ12	BDCME	BZME	CLBZ	CLBZME2	CTCL	CYMP	DCBZ13	DCBZ14	EBZ	ipbz	MEK	PBZN	TC1112	TMB124	TMB135	VC	XYLENES1314	XYLO	DEC	INC	NS	NA
MW2	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC																					17	0	0	20
MW5	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC	DEC		NS																				16	0	1	20
MW4B	DEC	NS	DEC	DEC	DEC	NS	DEC	DEC	DEC	DEC	NS	DEC	DEC	DEC	DEC	NS		NS						NS														12	0	6	19
MW15	DEC	DEC	DEC	DEC	NS	DEC	DEC	DEC	DEC	DEC	DEC	DEC	NS	NS	NS	NS																						11	0	5	21
OW6	DEC	DEC	DEC			DEC	NS	DEC	DEC	DEC					DEC			NS																				8	0	2	27
OW1a	NS	DEC	DEC	NS	DEC	DEC	INC	DEC		DEC	DEC	NS	NS	NS	NS		NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS				NS	NS	7	1	21	8
MW4A	DEC	NS	DEC	DEC	DEC	NS	NS	NS	DEC	NS	NS	DEC	NS	NS	NS	NS		NS																				6	0	11	20
MW6	INC	DEC	NS	DEC			DEC	NS		NS		NS		DEC					DEC																			5	1	4	27
OW3a	NS	DEC	NS	NS	DEC	DEC	INC	DEC		NS		NS	NS		NS		DEC																					5	1	7	24
OW8A	NS	DEC	NS	NS	DEC	DEC	NS	DEC		NS	NS	NS	DEC	NS	NS	NS	NS	NS	NS		NS	NS						NS	NS	NS		NS	NS	NS		NS	NS	5	0	23	9
MW7	DEC	DEC		DEC			DEC	NS	NS	NS														NS														4	0	4	29
OW2	INC	DEC	DEC		NS	DEC	INC	NS		INC		NS	NS																									3	3	4	27
MW8A	DEC	NS	NS	DEC			DEC	NS	NS	NS																												3	0	5	29
MW9B	DEC	NS	NS	NS			DEC	NS	DEC	NS						NS																						3	0	6	28
OW7	DEC	DEC				DEC	NS	NS																														3	0	2	32
OW1B	NS	NS	DEC	NS	NS	INC	NS	NS		NS	DEC	NS			NS		NS	NS																	NS			2	1	12	22
OW4A	DEC	NS	NS		NS	NS	NS	NS	NS	DEC	NS	NS						NS																				2	0	10	25
MW21	INC		NS		DEC		NS	NS		INC																												1	2	3	31
MW17B	DEC	NS	NS	NS	NS	NS	NS	NS		INC	NS	NS												NS														1	1	10	25
MW20A	NS	NS	NS	NS		NS	DEC	NS		NS		INC																										1	1	7	28
MW10	NS	NS	DEC	NS		NS	NS	NS	NS	NS	NS	NS																										1	0	10	26
MW11	NS	NS		DEC		NS	NS		NS	NS		NS																										1	0	7	29
MW17A	NS			NS	DEC		NS	NS				NS																										1	0	5	31
OW4B	NS	NS				NS	NS	NS	NS		NS				NS			DEC																				1	0	8	28
MW16B	INC	INC		NS		INC	INC	INC		INC																												0	6	1	30
MW1B	INC	INC	INC	NS		INC	INC	INC		NS																												0	6	2	29
MW1A	NS	INC	INC	NS		INC	INC	INC		NS	NS	NS	NS											NS														0	5	7	25
MW4C	INC	NS	INC	NS		NS	INC	INC		INC																												0	5	3	29
MW25A	NS	INC		NS		INC	INC	INC		NS		NS																										0	4	4	29
MW8B	INC	INC		NS			INC	NS		NS						NS																						0	3	4	30
MW8C	INC	INC		NS			INC	NS		NS						NS		NS										NS										0	3	6	28
MW23B	NS	INC		NS			NS	NS		INC																												0	2	4	31
MW8D	INC	NS		NS		NS	INC	NS		NS														NS														0	2	6	29
MW9A	INC	NS		NS			INC	NS	NS	NS																												0	2	5	30
MW17C	NS						INC			NS														NS														0	1	3	33
MW23C	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	INC	NS																						0	1	14	22
MW12	NS						NS	NS																														0	0	3	34
MW13B	NS						NS																															0	0	2	35
MW14	NS	NS	NS			NS	NS	NS		NS																												0	0	7	30
MW16A	NS	NS	NS	NS			NS	NS		NS		NS								NS																		0	0	9	28
MW16C	NS						NS																															0	0	2	35
MW18A	NS	NS					NS																															0	0	3	34
MW18B	NS	NS					NS																															0	0	3	34
MW20B	NS	NS	NS	NS		NS	NS	NS		NS		NS																										0	0	9	28
MW20C	NS			NS				NS																														0	0	3	34
MW22	NS		NS				NS			NS																												0	0	4	33
MW23A	NS	NS		NS		NS	NS	NS		NS			NS																									0	0	8	29
MW23D	NS																																					0	0	1	36
MW24A	NS	NS				NS	NS	NS		NS																												0	0	6	31
MW24C						NS	NS																															0	0	2	35
MW25B	NS	NS		NS		NS	NS	NS		NS																												0	0	7	30
MW25C	NS						NS																															0	0	2	35
MW26A	NS	NS		NS	NS	NS	NS	NS		NS		NS																										0	0	9	28
MW26B	NS	NS		NS		NS	NS	NS		NS		NS																										0	0	8	29
MW26C	NS	NS		NS		NS	NS	NS		NS																												0	0	7	30
MW27A	NS	NS		NS		NS	NS	NS				NS																										0	0	7	30
MW27B	NS			NS			NS	NS				NS																										0	0	5	32
MW27C	NS																																					0	0	1	36
MW29	NS						NS																															0	0	2	35
MW3			NS				NS																															0	0	2	35
MW30				NS																																		0	0	1	36
OW3B							NS																															0	0	1	36
OW5	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS		NS	NS																				0	0	16	21
OW8B	NS						NS	NS																														0	0	3	34
Summary																																									
DEC	12	11	10	9	9	9	9	8	7	7	5	5	4	4	4	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	51	365	
INC	10	7	3	0	0	5	13	5	0	6	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51			
NA	42	46	51	55	55	50	42	51	57	51	59	58	60	60	59	62	62	63	63	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	2198			
NS	38	28	16	32	7	22	38	36	8	31	10	21	9	6	8	8	4	9	2	1	2	2	1	7	1	1	1	3	2	1	1	2	1	1	1	2	2	365			

DEC= decreasing trend

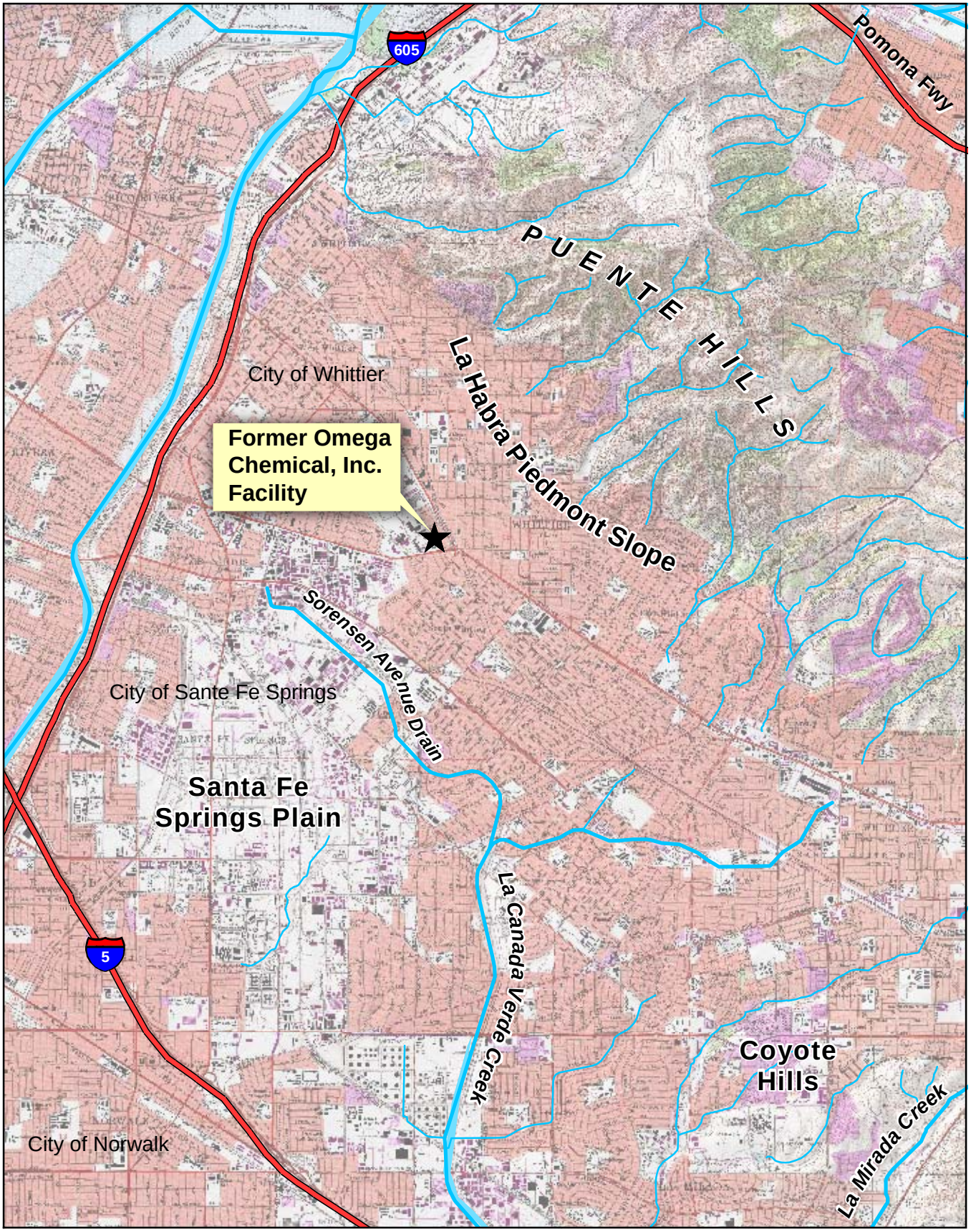
INC = increasing trend

NS= not significant

NA= not applicable

This data is updated through 3rd quarter 2009

Figures



N

0.5 0 0.5

Miles

Figure 1-1
Facility Location Map
Omega Chemical Superfund Site

CH2MHILL

ES062006002SCO335392.RR.01 EPA_Omega_SiteLoc.ai 05/08

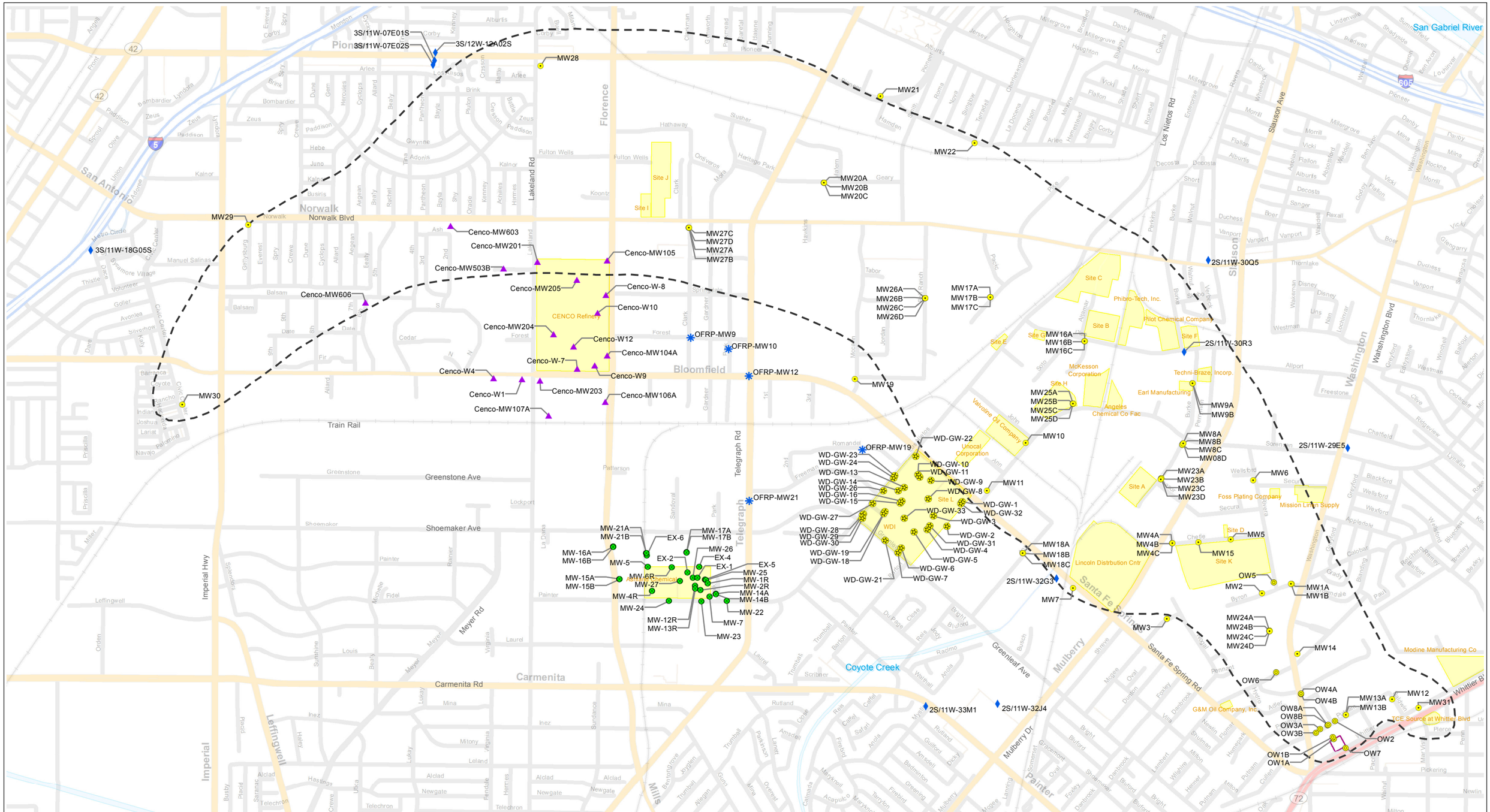


Figure 1-2
Monitoring Well Locations
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_Well_Locations.mxd

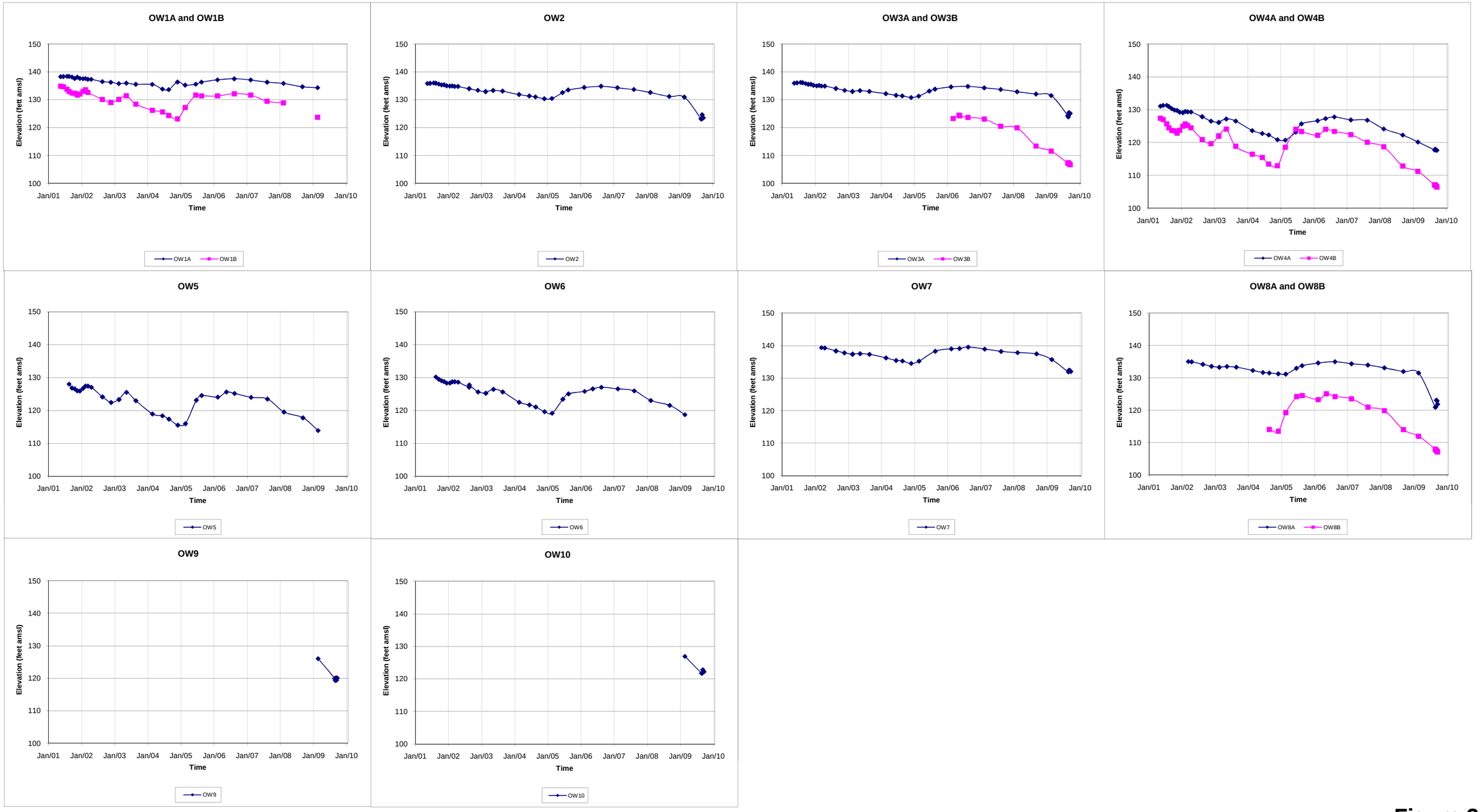


Figure 3-1a
Well Hydrographs
Omega Chemical

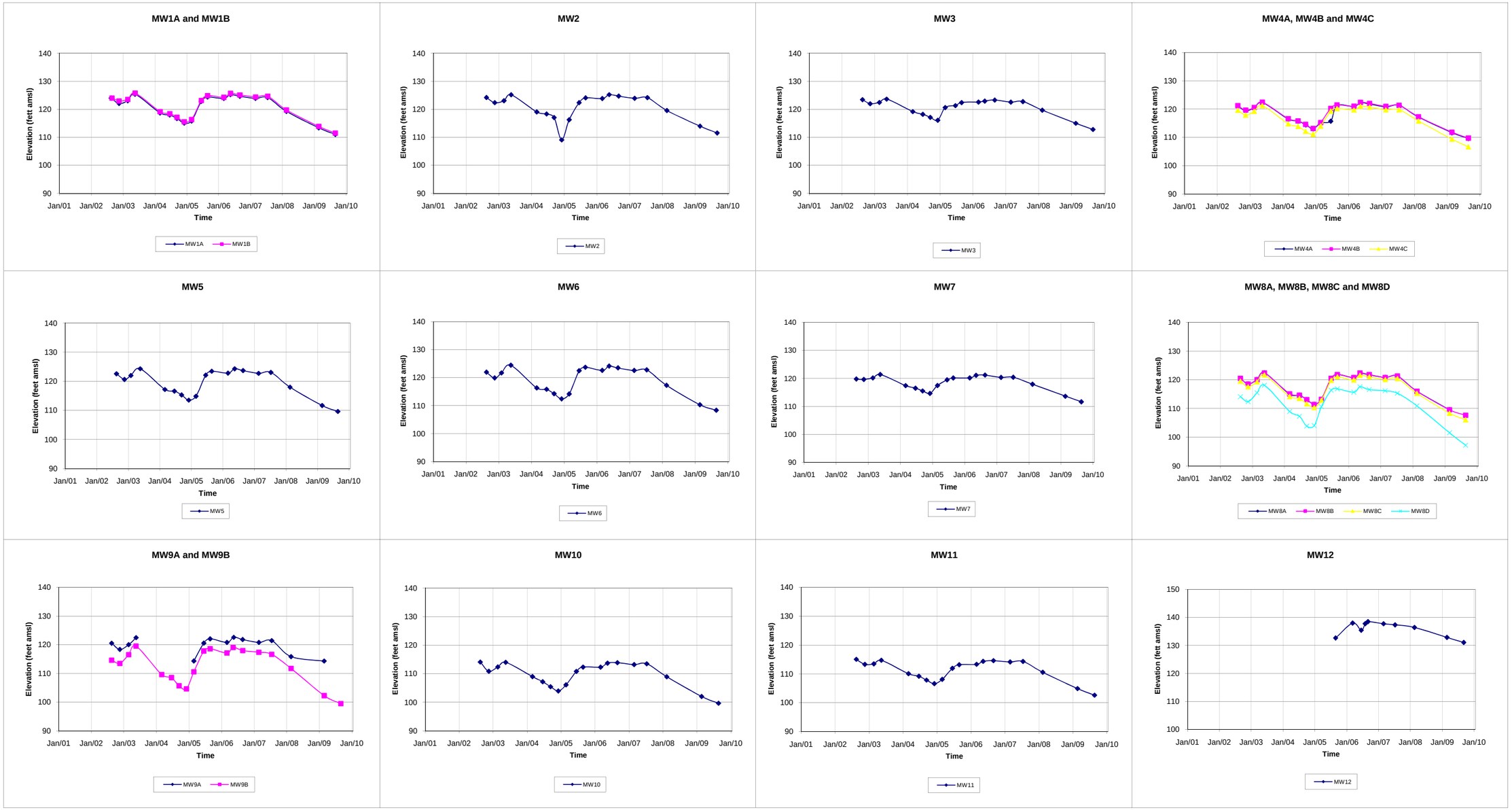


Figure 3-1b
Well Hydrographs
Omega Chemical

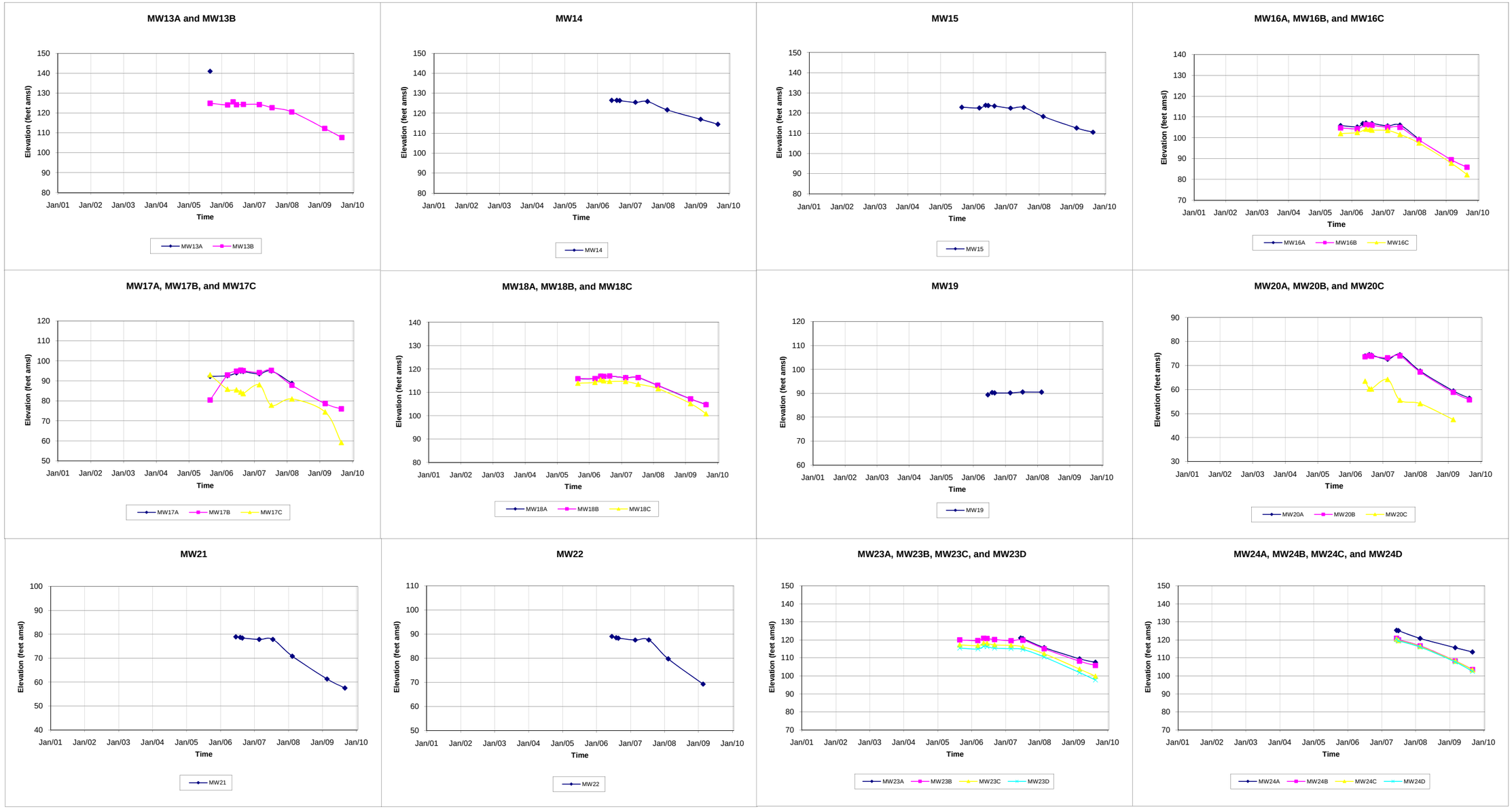


Figure 3-1c
Well Hydrographs
Omega Chemical

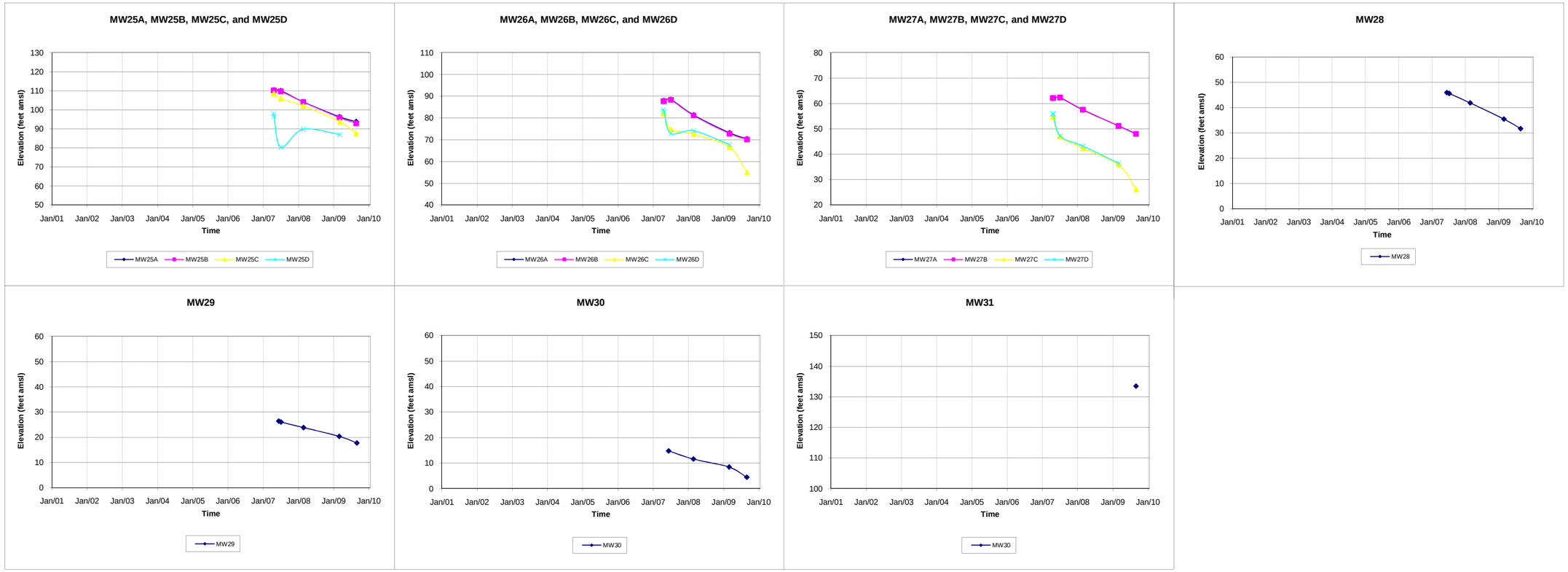
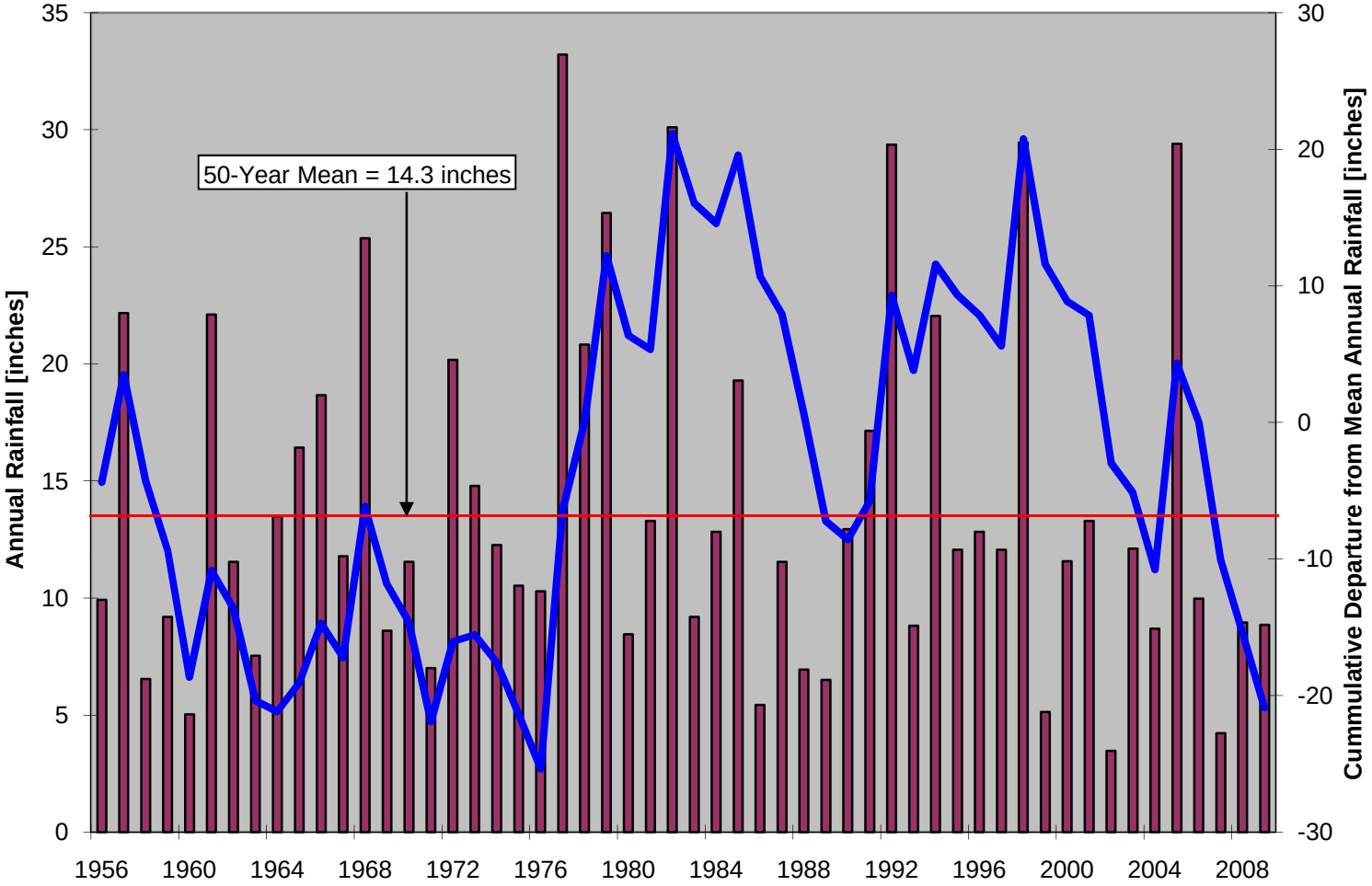
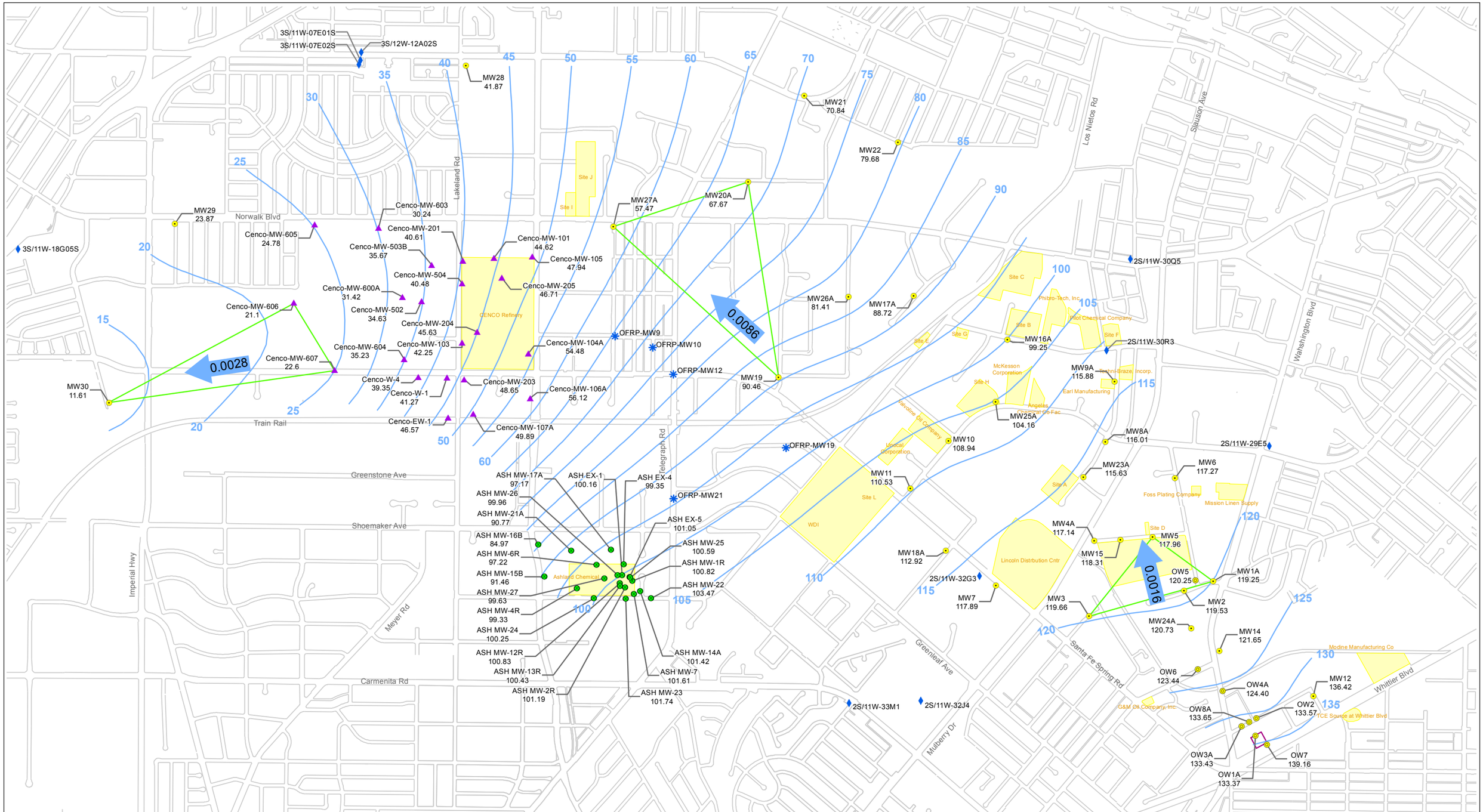


Figure 3-1d
Well Hydrographs
Omega Chemical

Figure 3-2
City of Whittier Annual Rainfall Totals
Omega Chemical Superfund Site



Note: Annual rainfall data from rain gage 106F - City of Whittier Storage Yard.



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Water Level Contour 1st Quarter 2008
- Approximate Boudary of Facilities
- Former Omega Facility

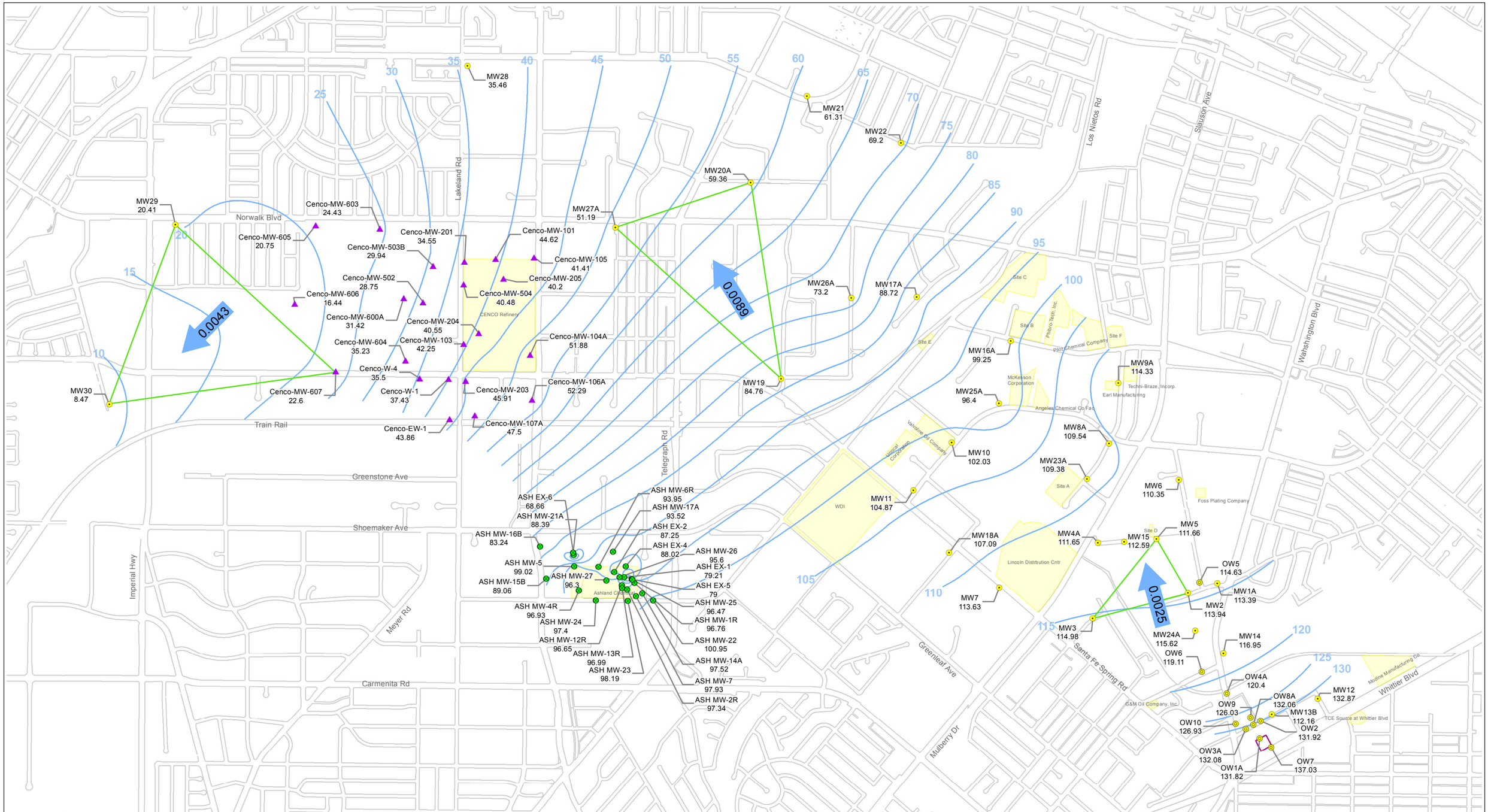
N

0 1000 2000 Feet

Figure 3-3
Water Table Contours, First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_WaterTableContours_NO13B.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well (1st Quarter, 2009)
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

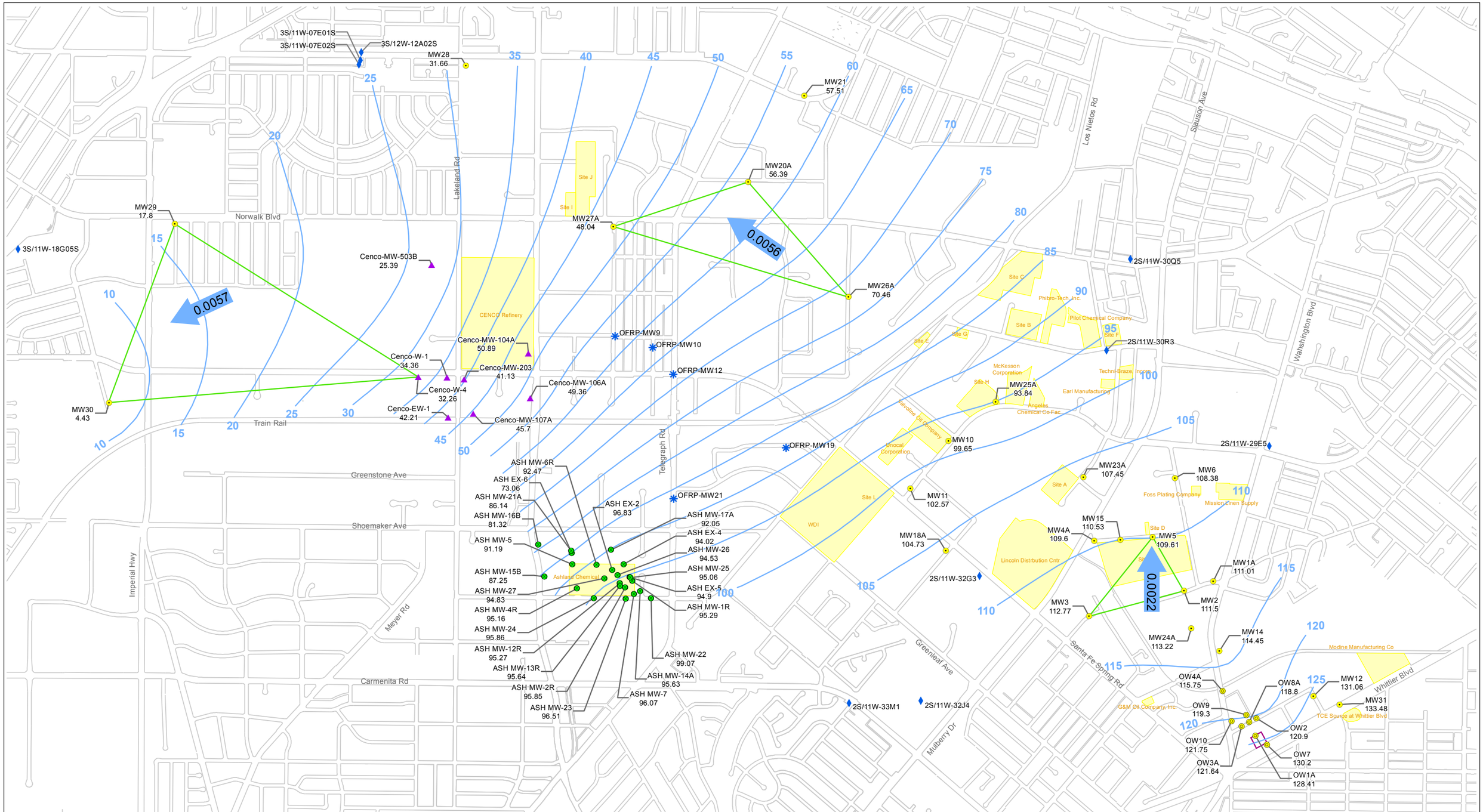
N

0 1000 2000 Feet

Figure 3-4
Water Table Contours, First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Maps\OMEG_1Q2009_WaterTableContours.mxd



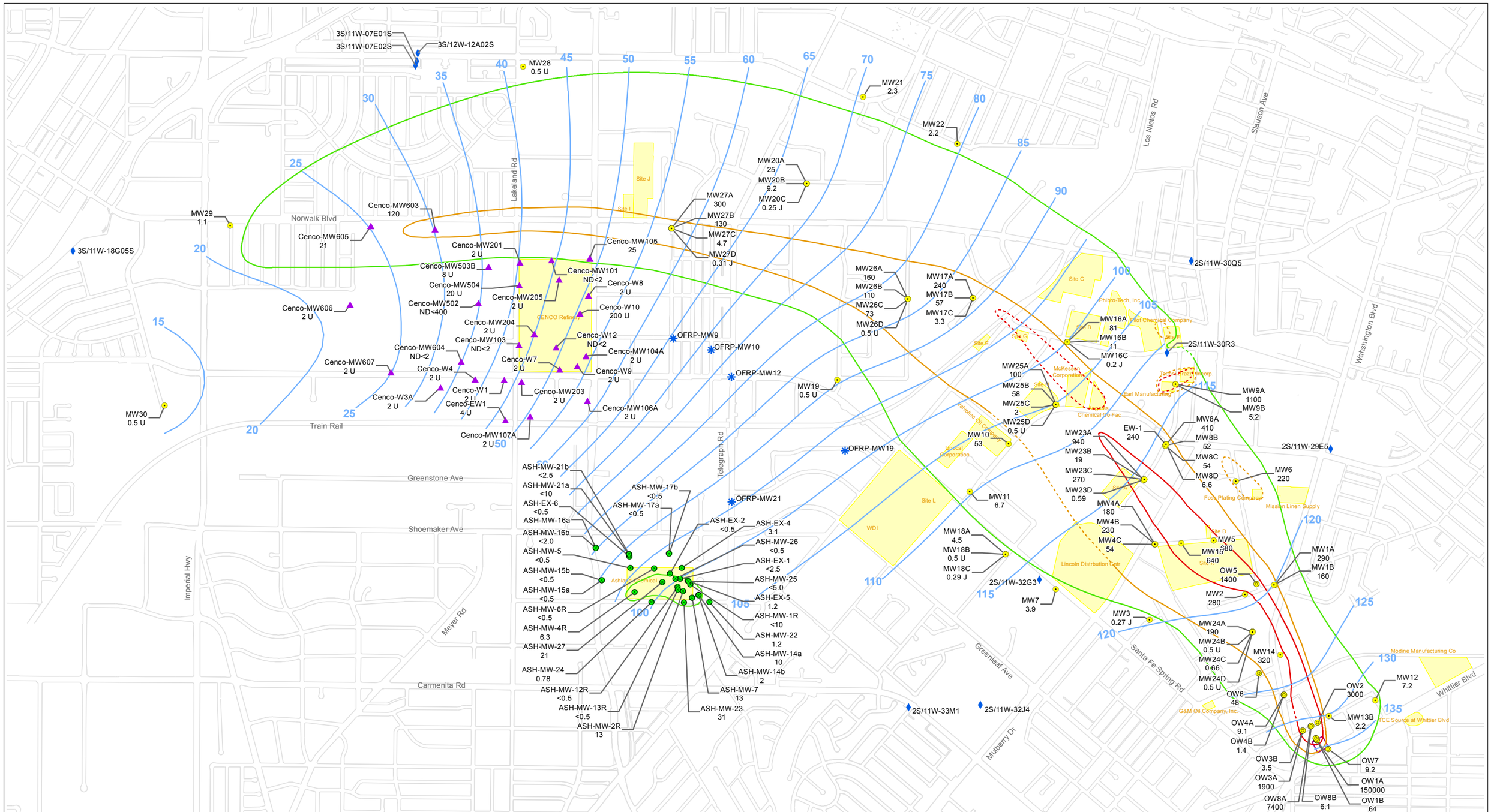
Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Water Level Contour 3rd Quarter 2009
- Approximate Boudary of Facilities
- Former Omega Facility

Figure 3-5
Water Table Contours, Third Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_WaterTableContours_NO13B.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite PCE Plume Extent

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2008

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

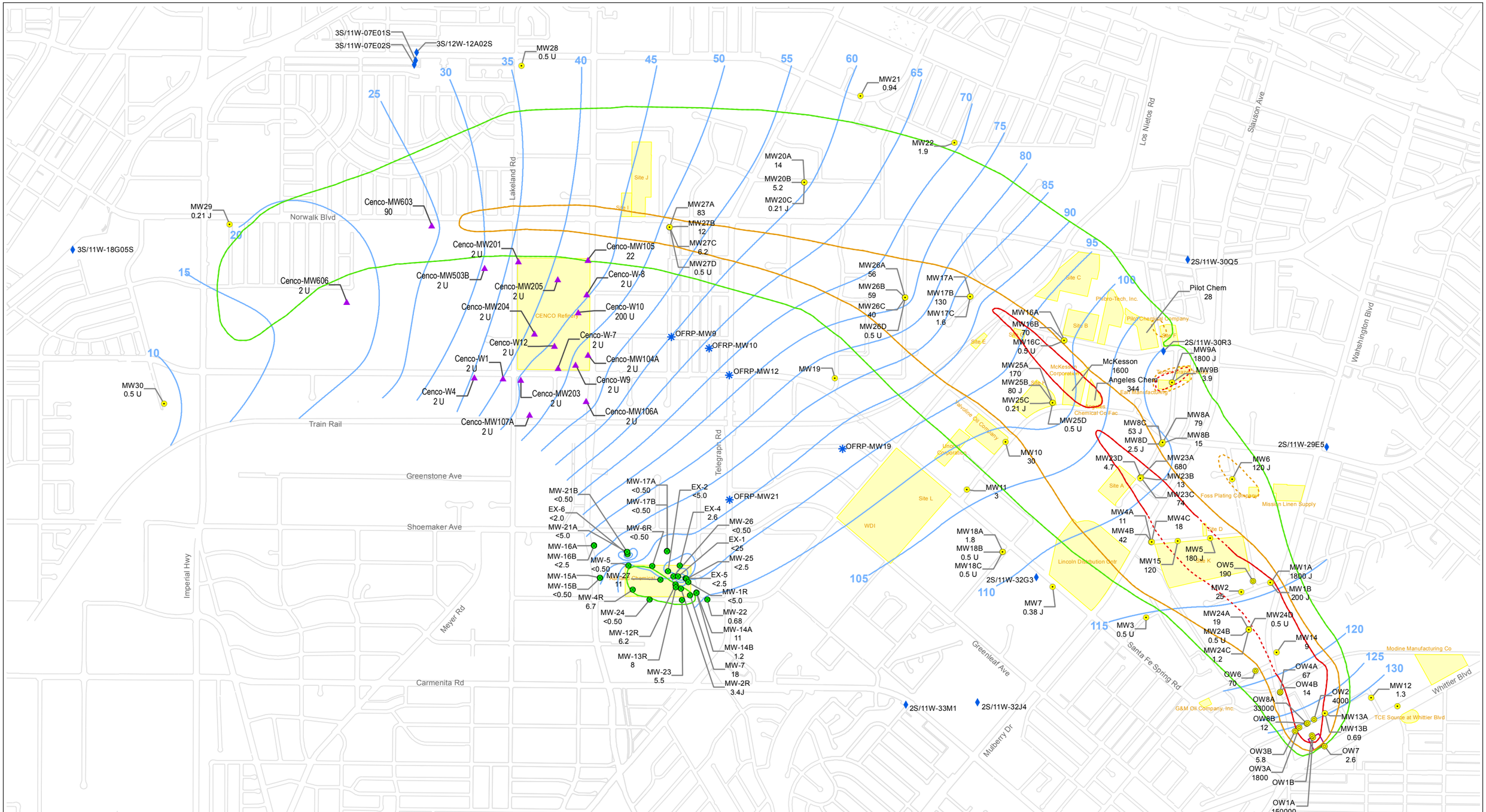
N

0 1000 2000 Feet

Figure 3-6a
Composite PCE Distribution
First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_PCE.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well (1st Quarter, 2009)
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite PCE Plume Extent for 1Q2009

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

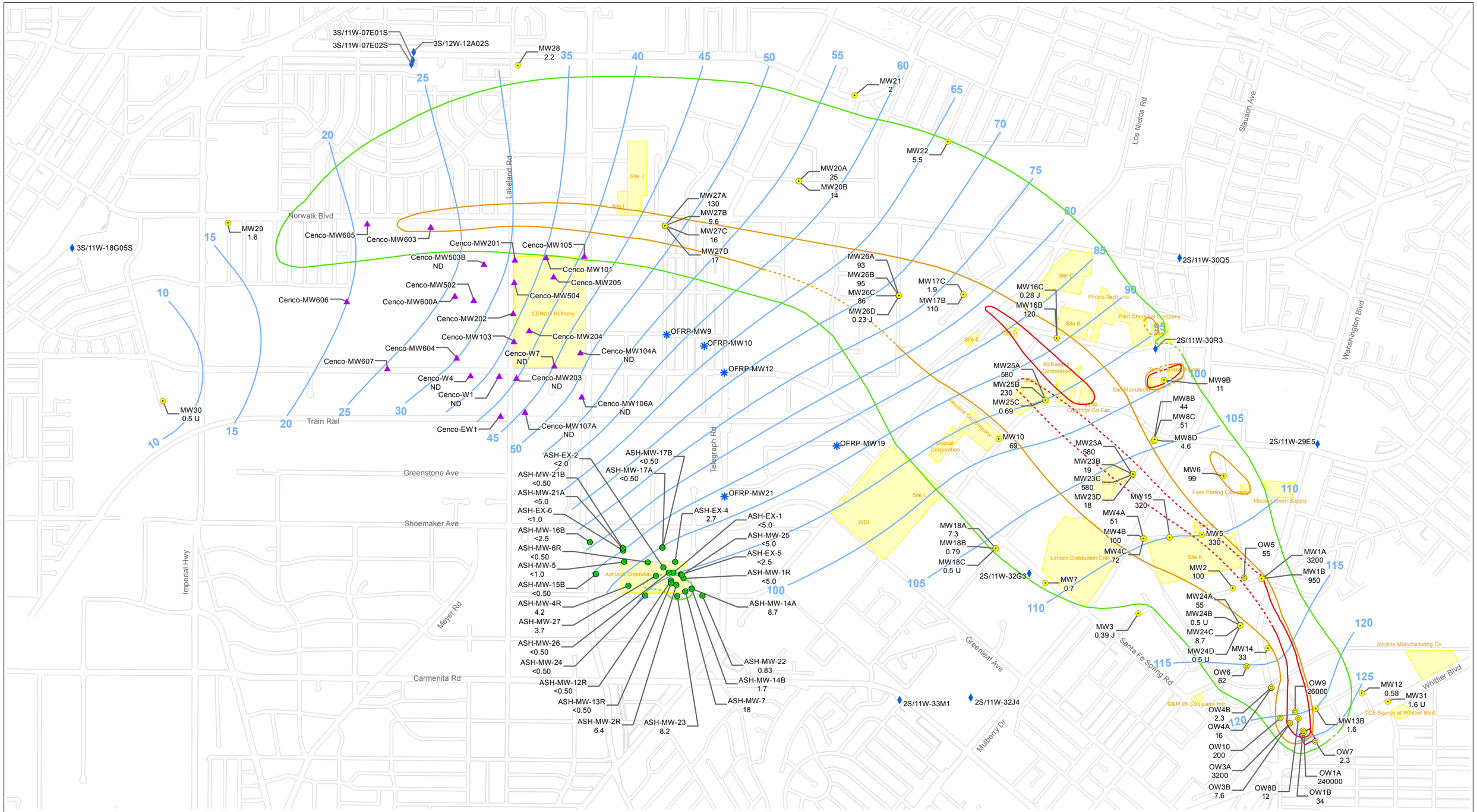
N

0 1000 2000 Feet

Figure 3-6b
Composite PCE Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Map_2010Annual\OMEG_1Q2009_PCE.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite PCE Plume Extent

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

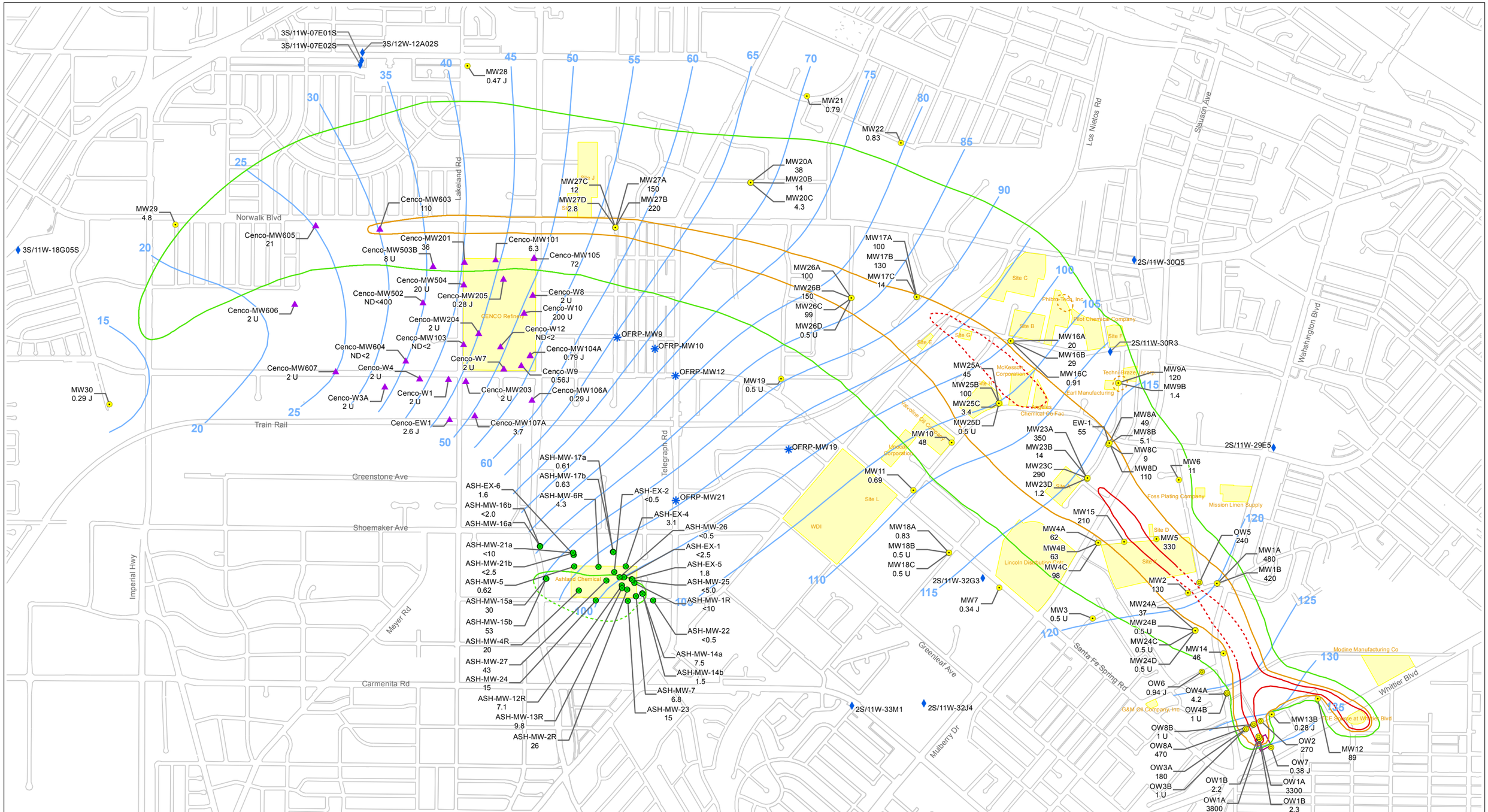
N

0 1000 2000 Feet

Figure 3-6c
Composite PCE Distribution
Third Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_PCE.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite TCE Plume Extent

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2008

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

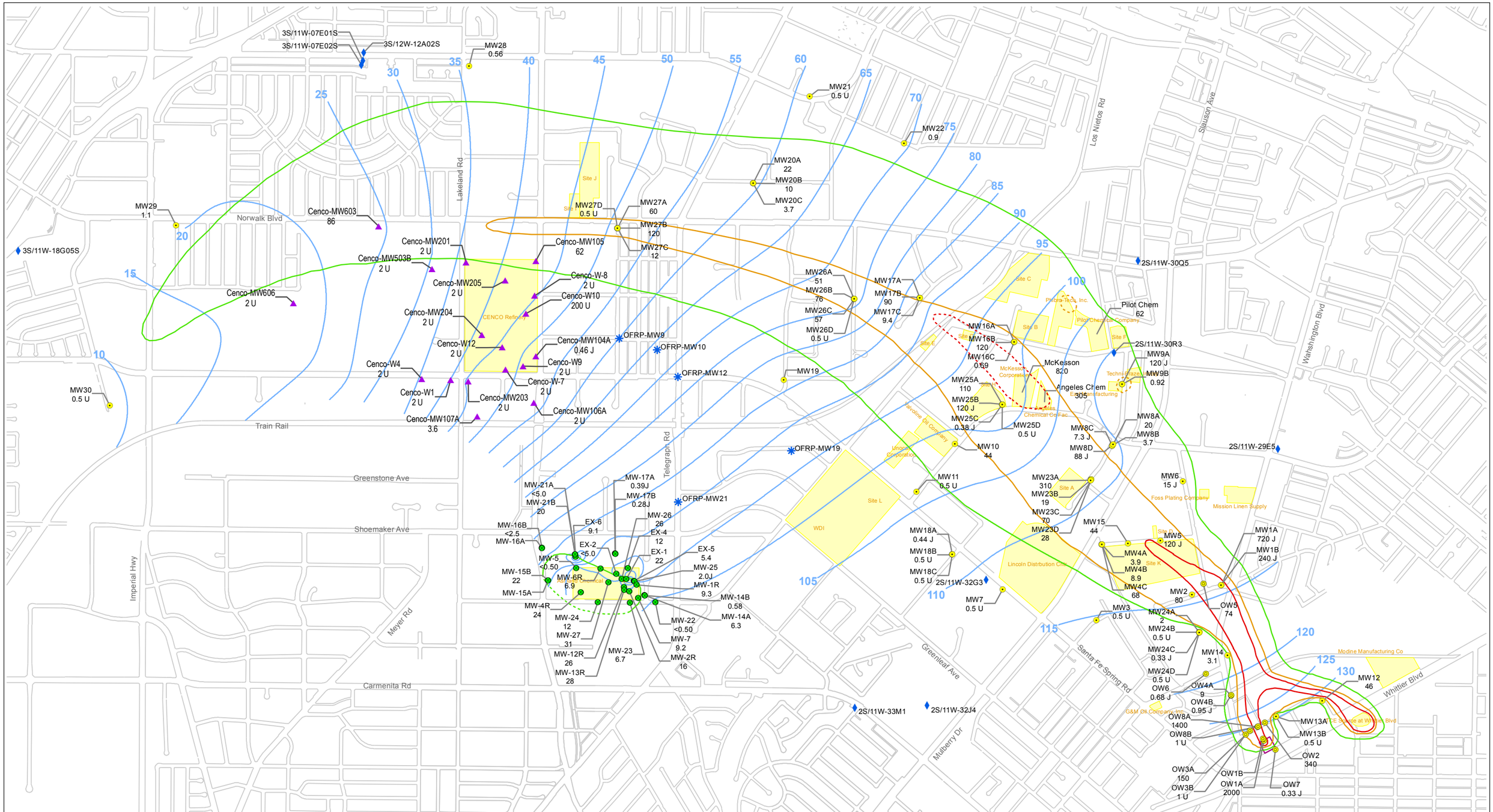
N

0 1000 2000 Feet

Figure 3-7a
Composite TCE Distribution
First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_TCE.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well 1st Quarter, 2009
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite TCE Plume Extent

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour 1th Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

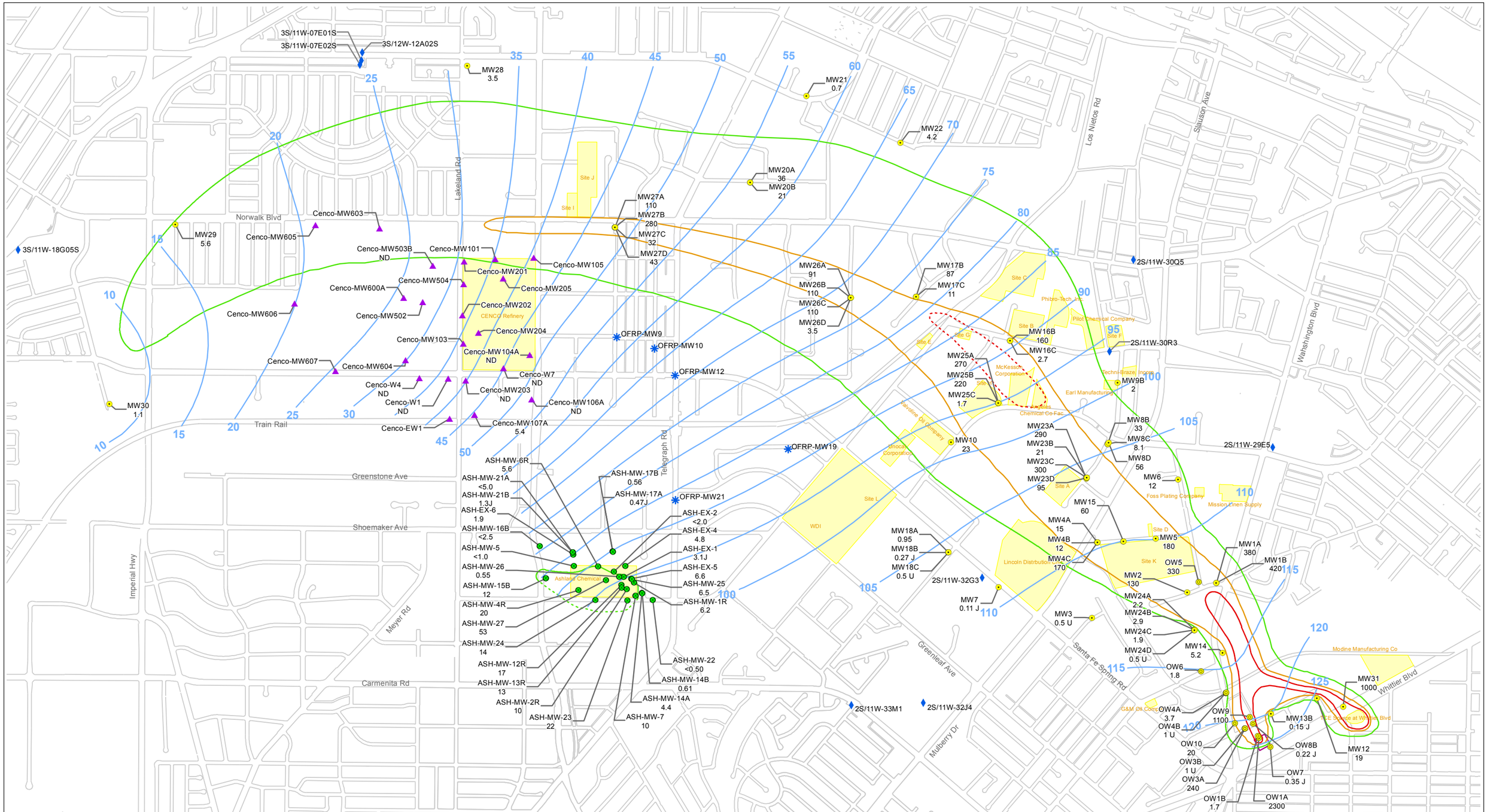
N

0 1000 2000 Feet

Figure 3-7b
Composite TCE Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Map_2010Annual\OMEG_1Q2009_TCE.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite TCE Plume Extent

- 500 ug/L (Dashed where approximated)
- 100 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

N

0 1000 2000 Feet

Figure 3-7c
Composite TCE Distribution
Third Quarter 2009

Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_TCE.mxd

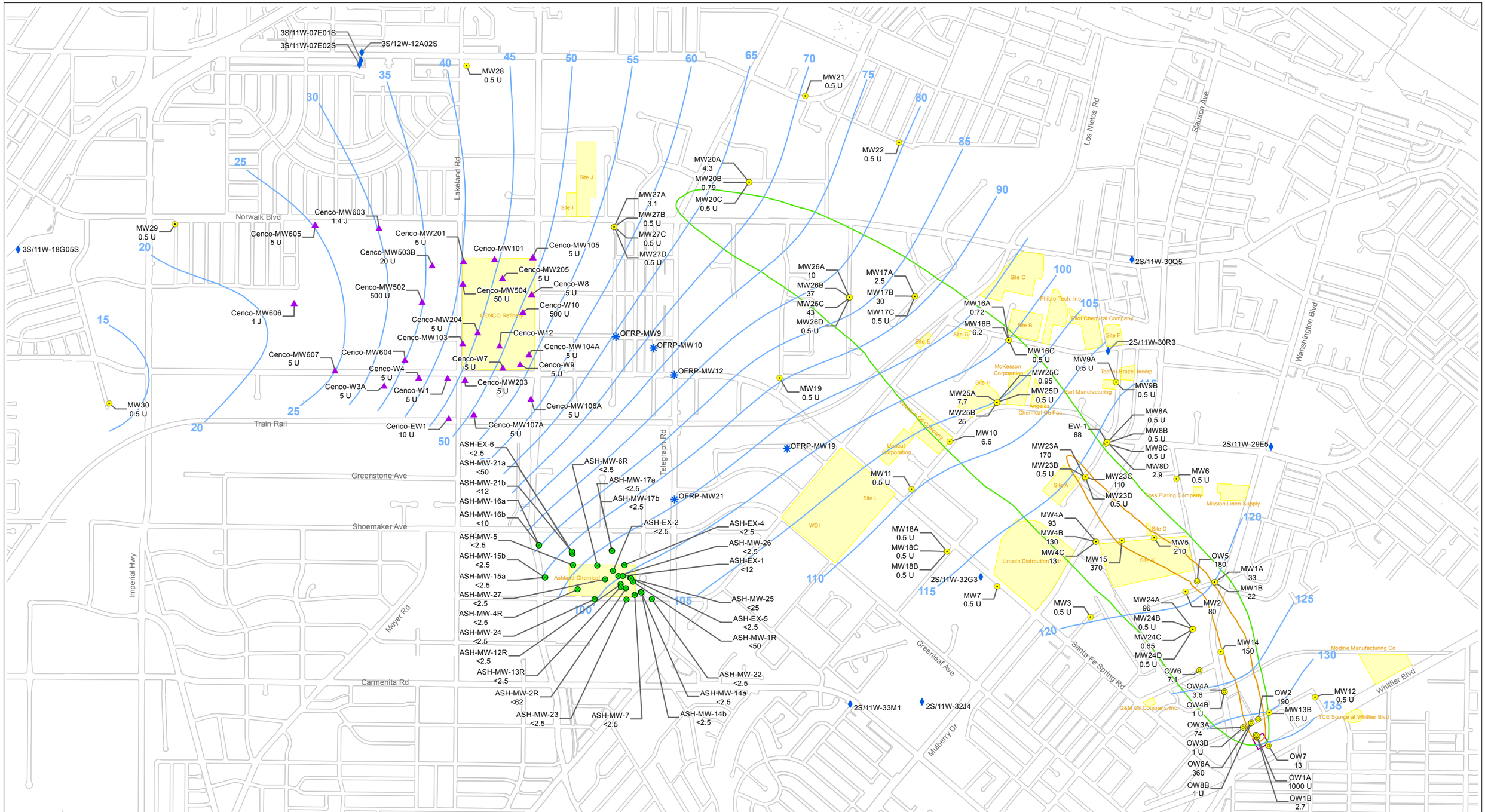
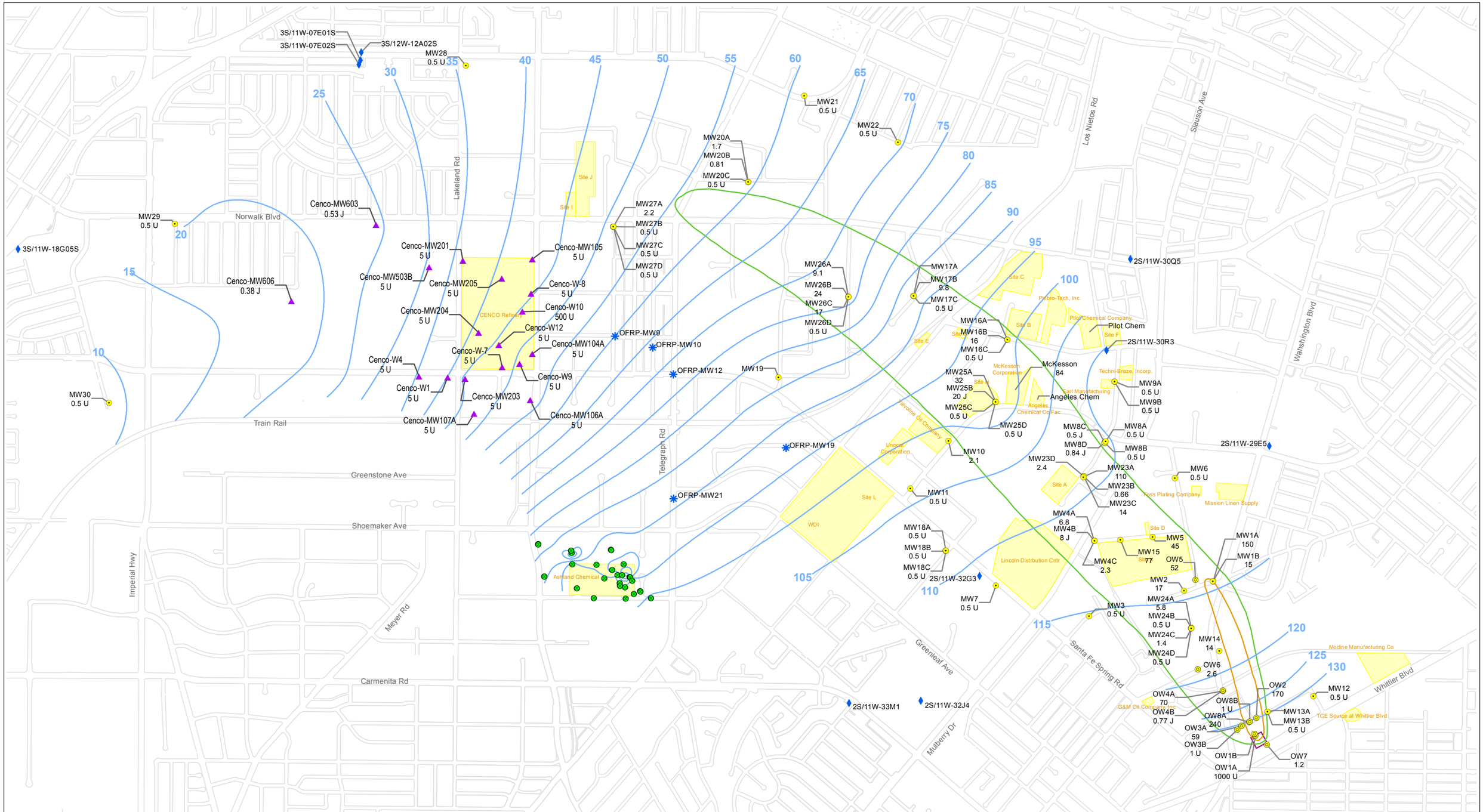


Figure 3-8a
Composite Freon11 Distribution
First Quarter 2008
Omega Chemical Superfund Site

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_Freon11.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well (1st Quarter, 2009)
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite Freon 11 Plume Extent 1Q2009

- 150 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour 1th Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

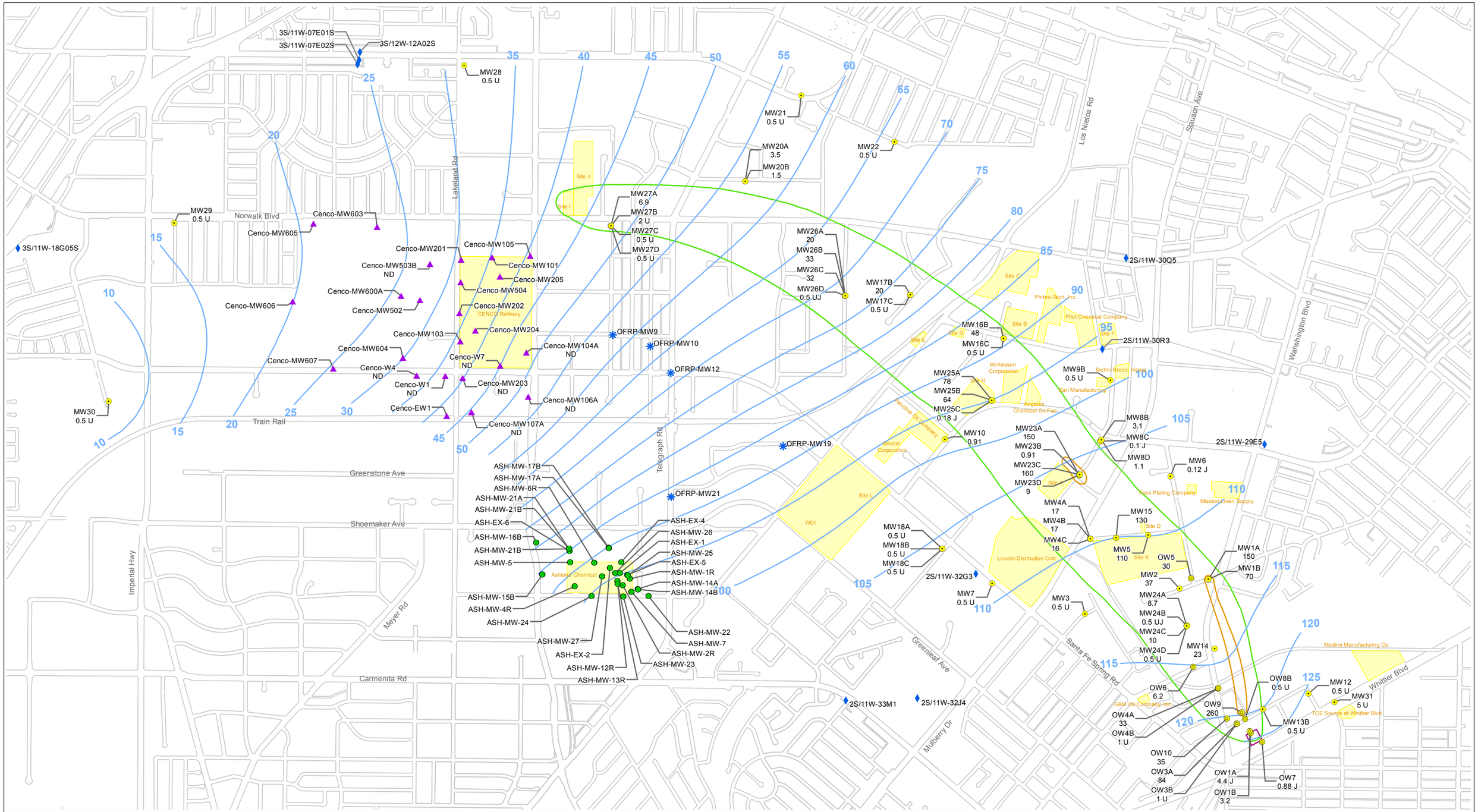
N

0 1000 2000 Feet

Figure 3-8b
Composite Freon11 Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Map_2010Annual\OMEG_1Q2009_Freon11.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite Freon 11 Plume Extent

- 150 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

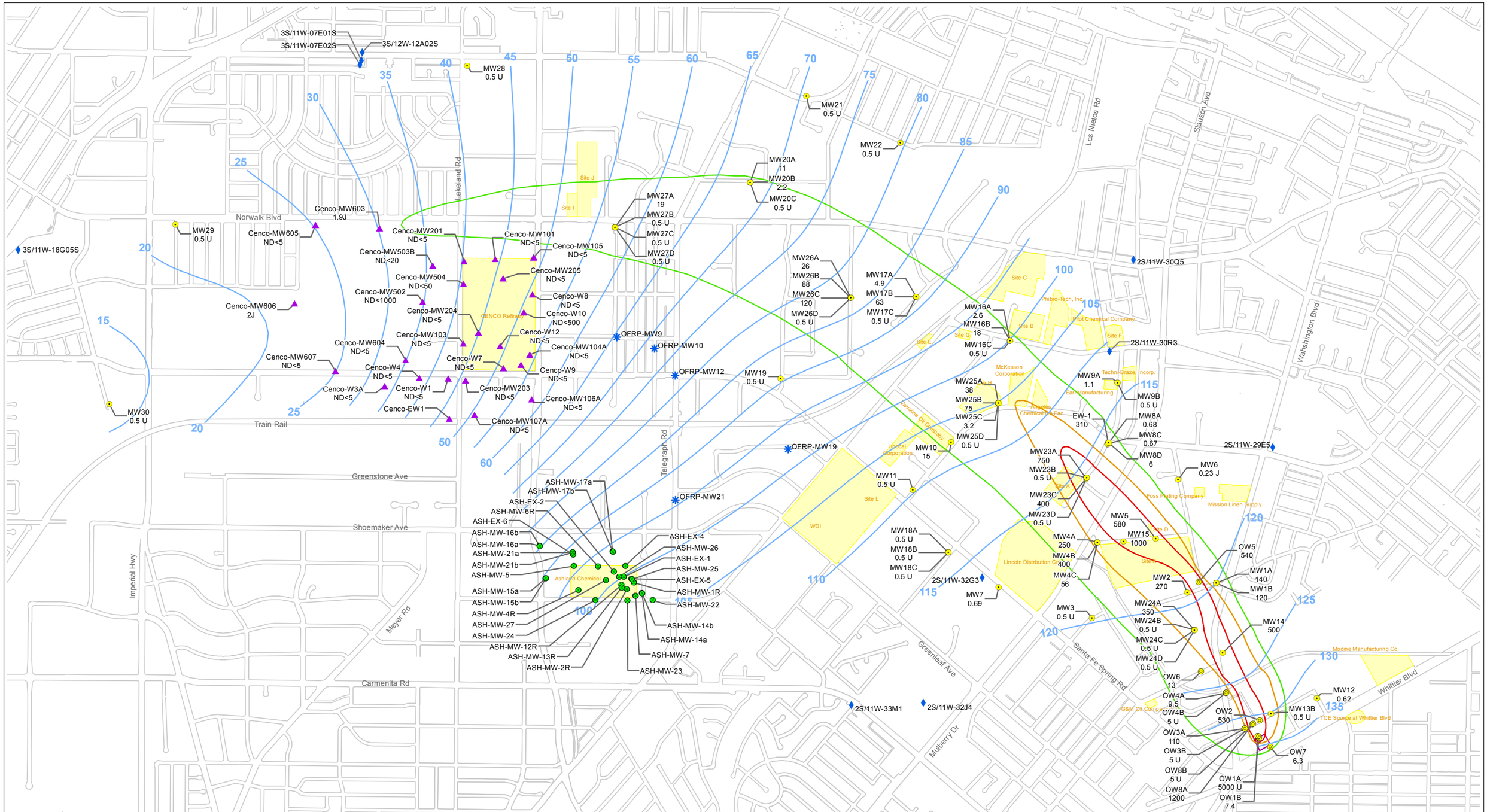
N

0 1000 2000 Feet

Figure 3-8c
Composite Freon11 Distribution
Third Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_Freon11.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite Freon113 Plume Extent

- 500 ug/L (Dashed where approximated)
- 150 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2008

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

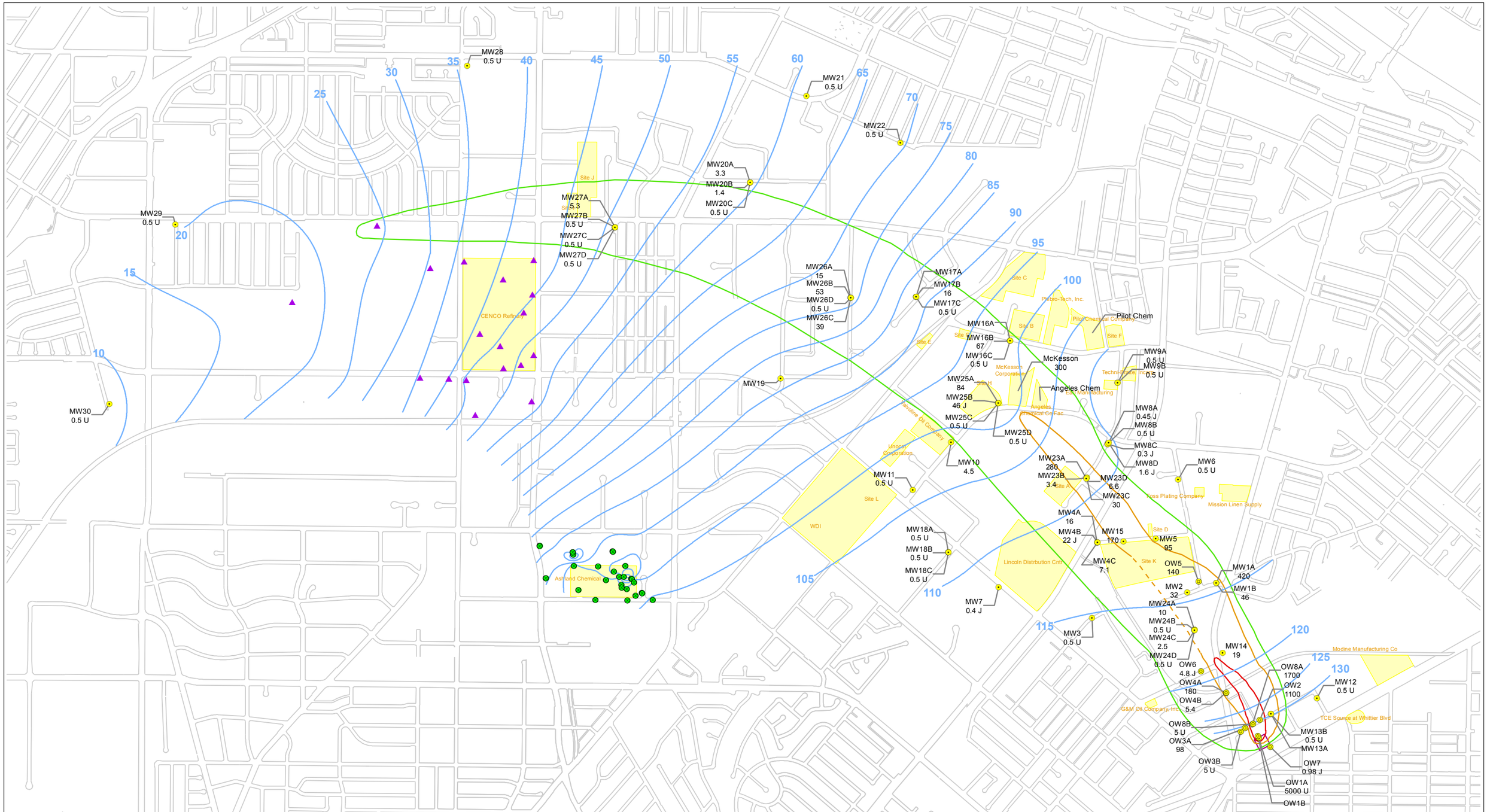
N

0 1000 2000 Feet

Figure 3-9a
Composite Freon113 Distribution
First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_Freon113.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well 1st Quarter, 2009
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite Freon113 Plume Extent

- 500 ug/L (Dashed where approximated)
- 150 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

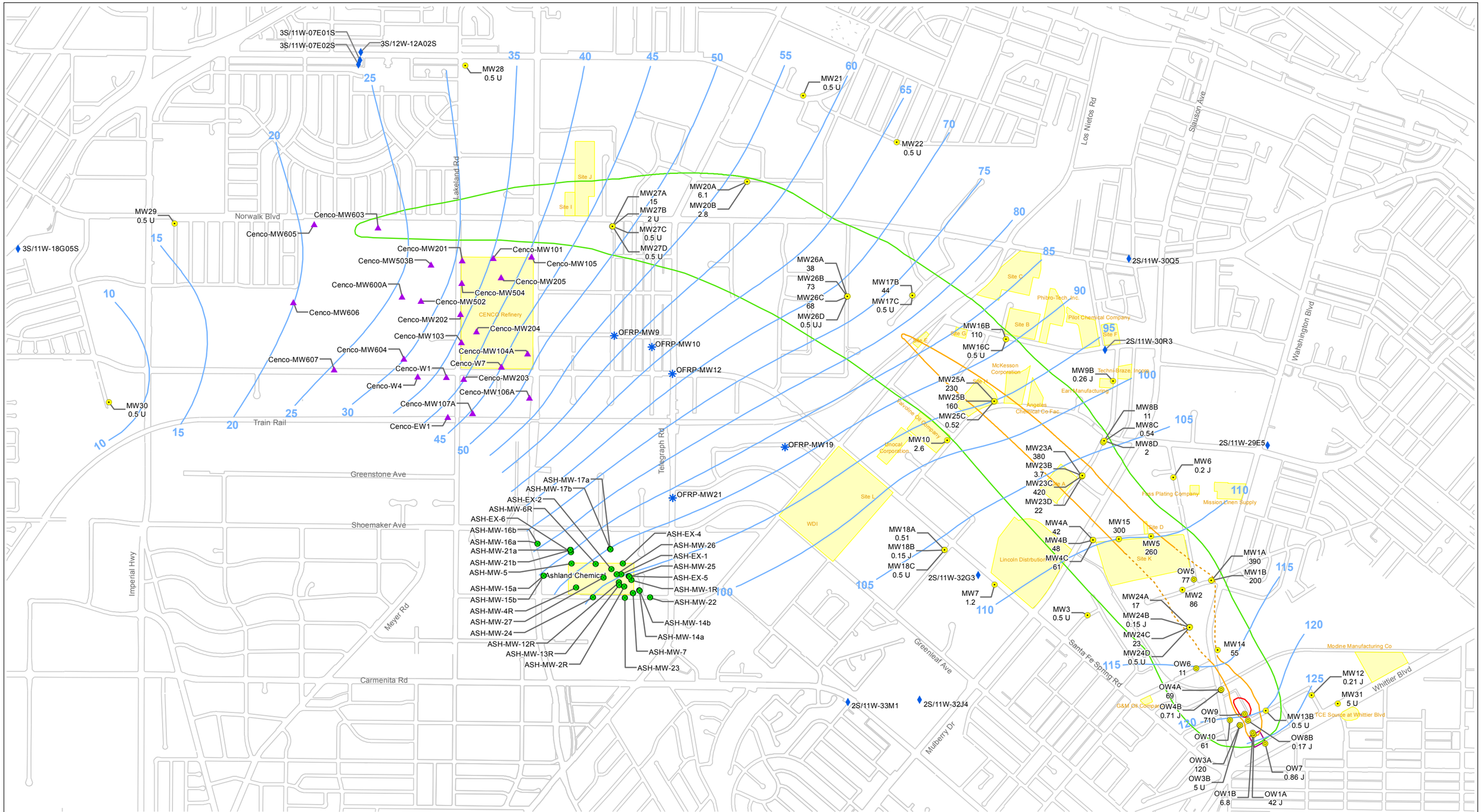
N

0 1000 2000 Feet

Figure 3-9b
Composite Freon113 Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Map_2010Annual\OMEG_1Q2009_Freon113.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite Freon113 Plume Extent

- 500 ug/L (Dashed where approximated)
- 150 ug/L (Dashed where approximated)
- 5 ug/L (Dashed where approximated)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

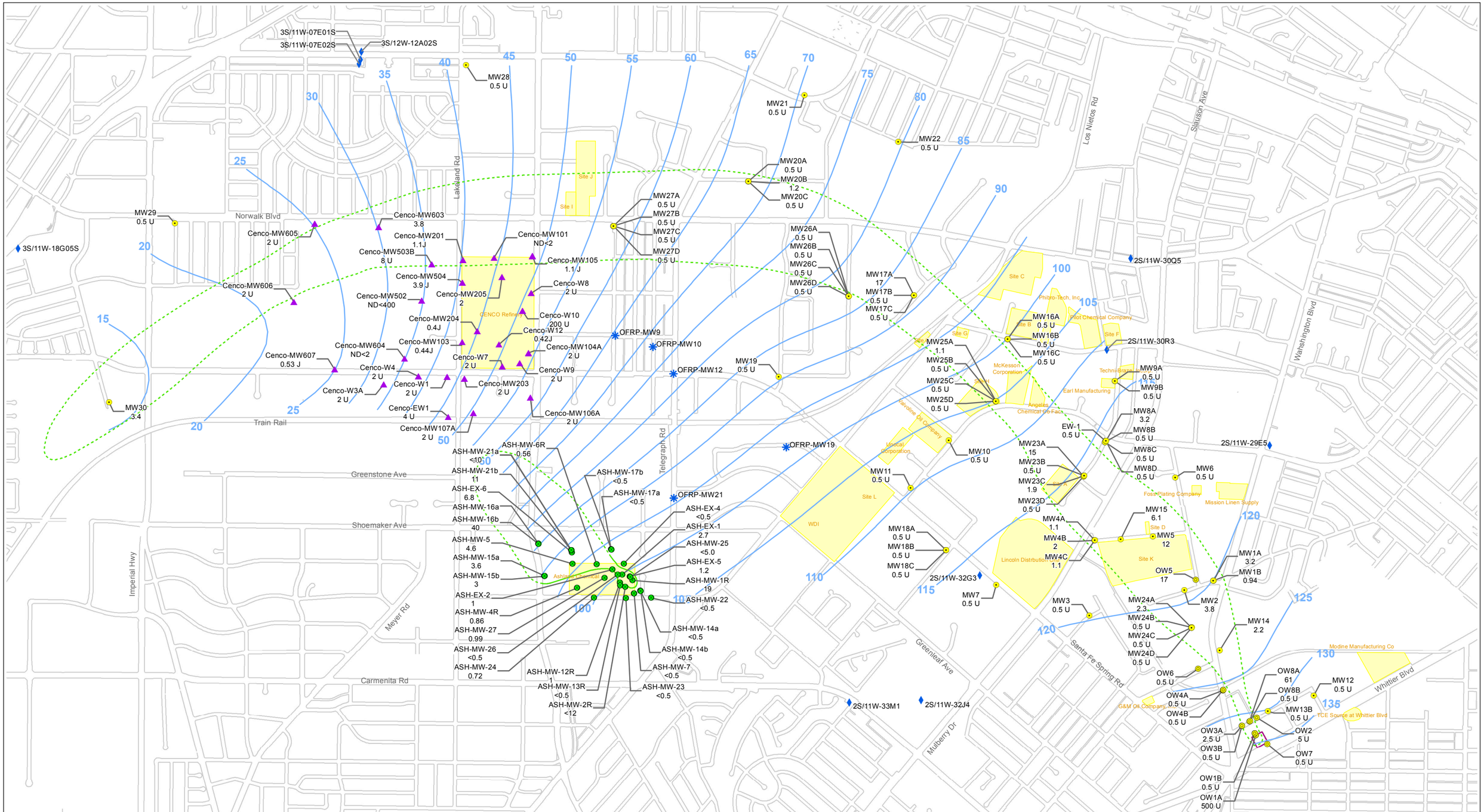
N

0 1000 2000 Feet

Figure 3-9c
Composite Freon113 Distribution
Third Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_Freon113.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility
- 1 ug/L (Dashed where approximate)
- Water Level Contour First Quarter 2008

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

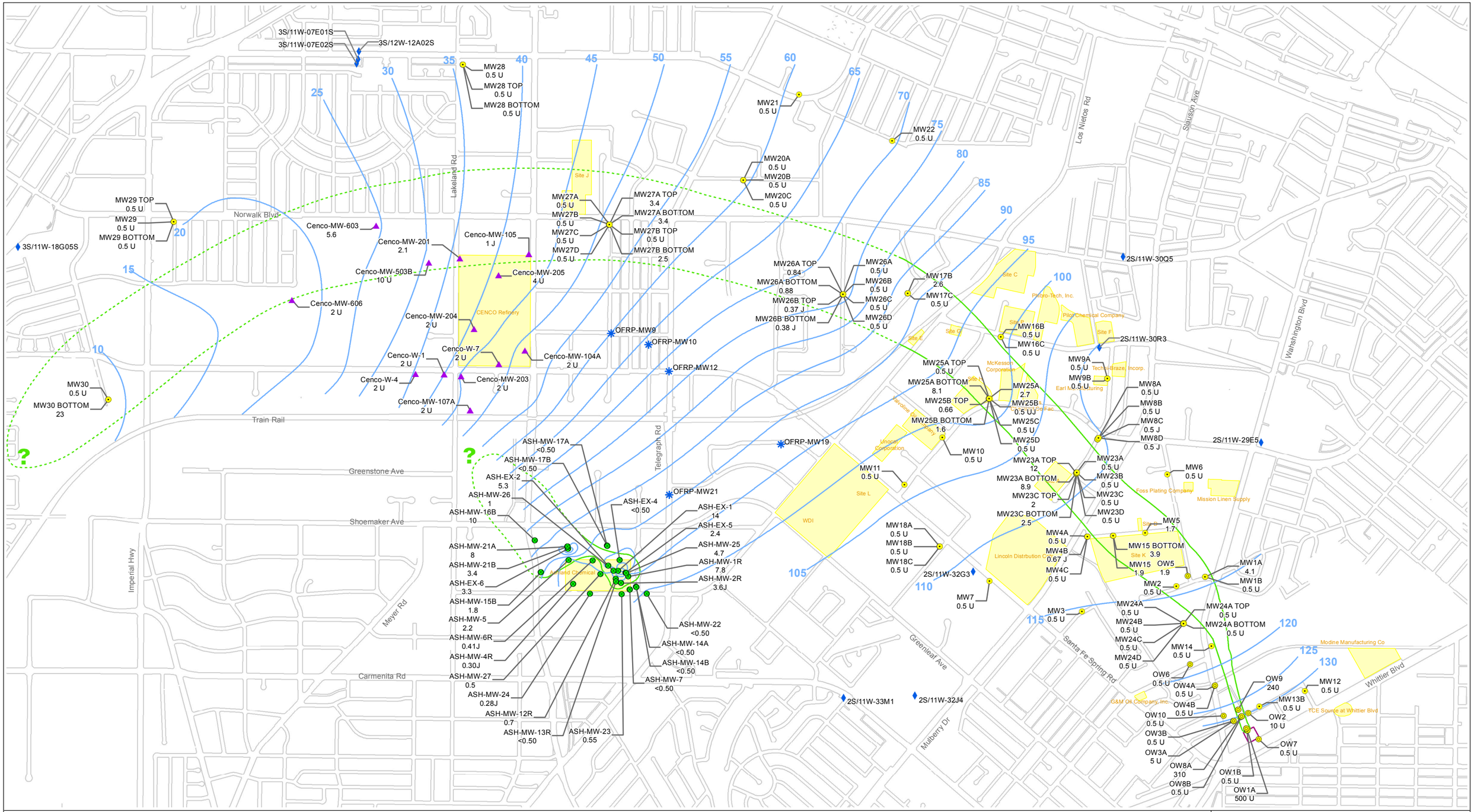
N

0 1000 2000 Feet

Figure 3-10a
Composite 1,2-DCA Distribution
First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_1,2-DCA.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well (1st Quarter, 2009)
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility
- 1 ug/L (Dashed where approximate)
- Water Level Contour First Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceding upper level of instrument calibration range.
4) NS - Not Sampled

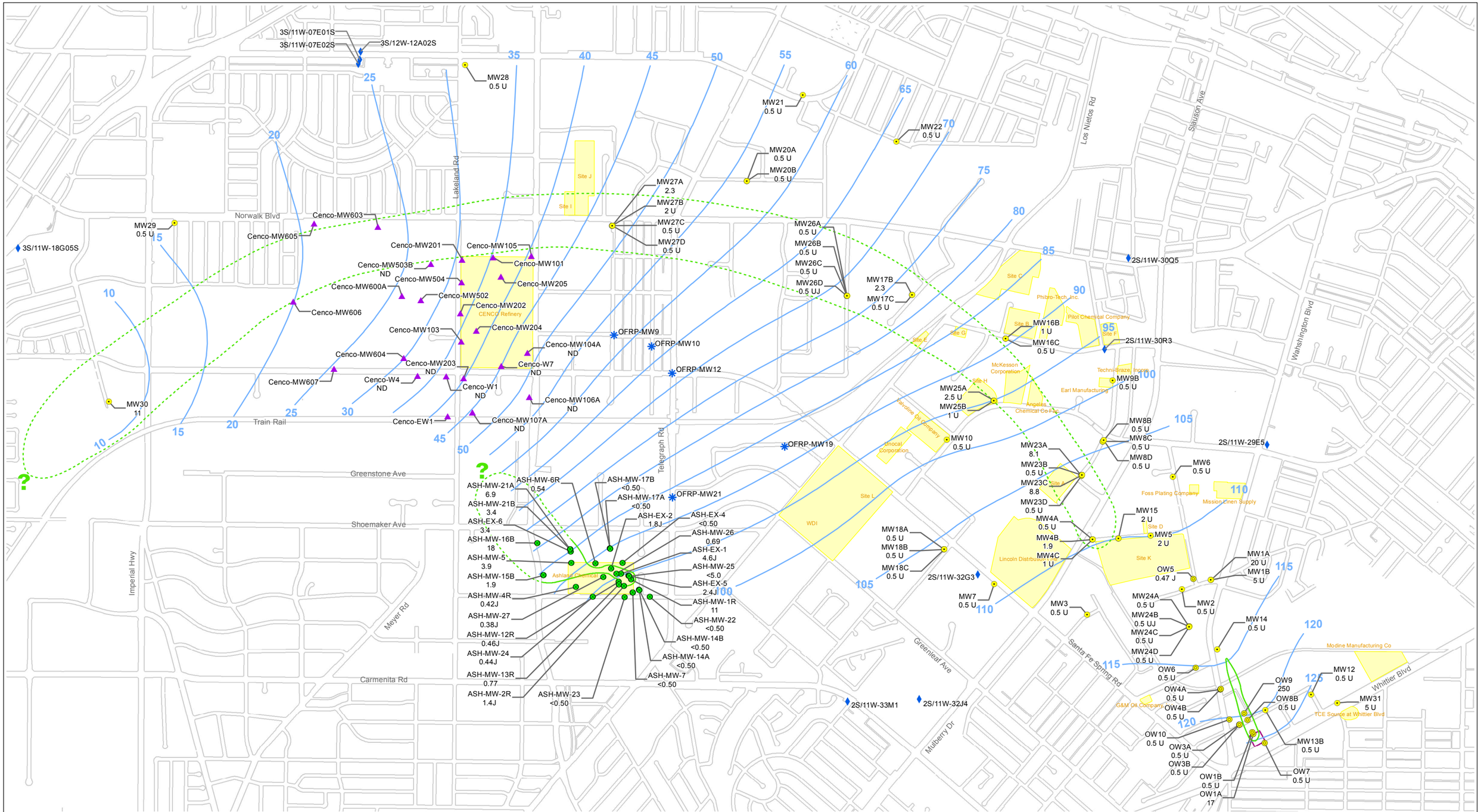
N

0 1000 2000 Feet

Figure 3-10b
Composite 1,2-DCA Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2009_1,2-DCA.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility
- 1 ug/L (Dashed where approximate)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

N

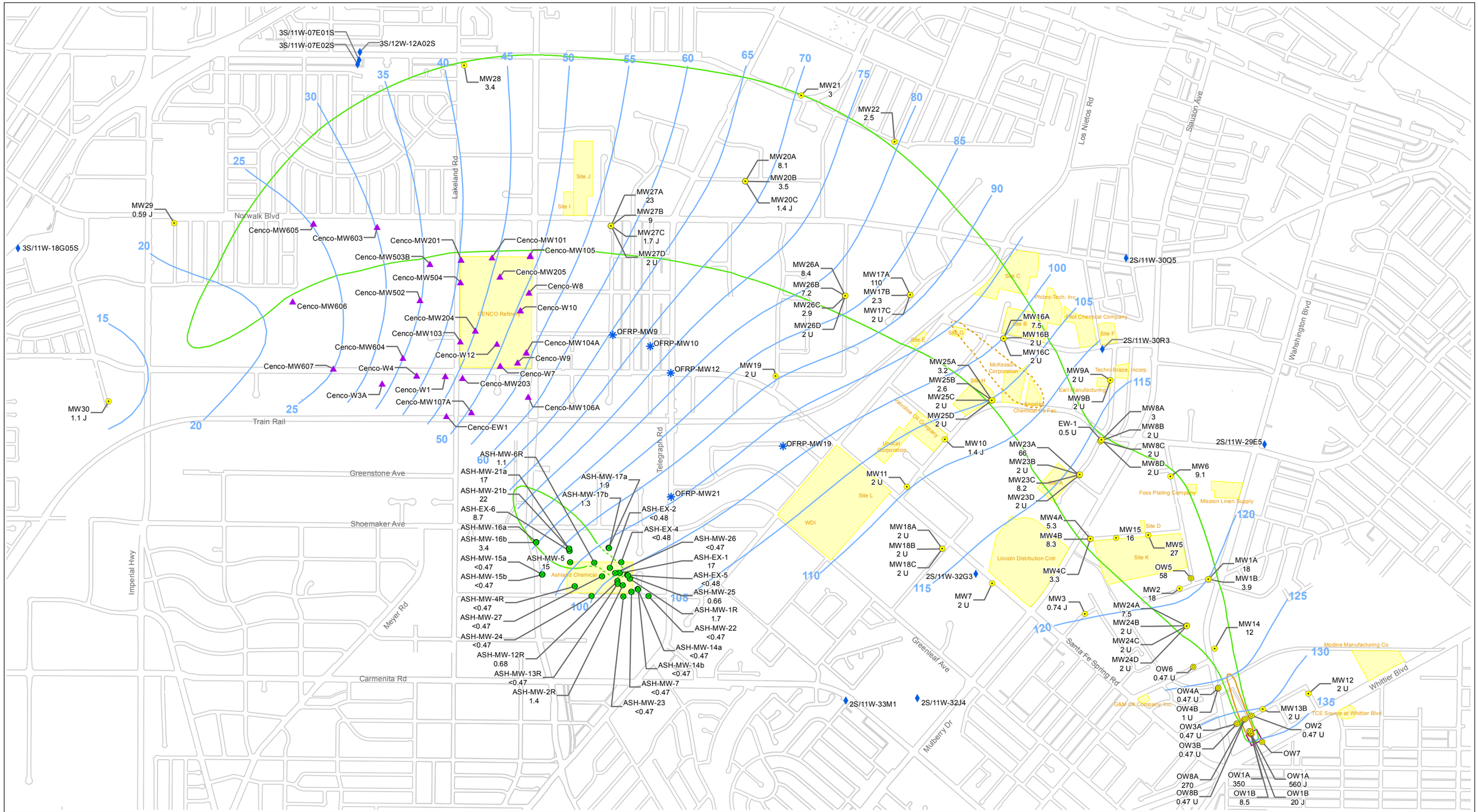
0 1000 2000 Feet

Figure 3-10c
Composite 1,2-DCA Distribution
Third Quarter 2009

Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_1,2-DCA.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite1,4 Dioxane Plume Extent

- 100 ug/L (Dashed where approximated)
- 3 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2008

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

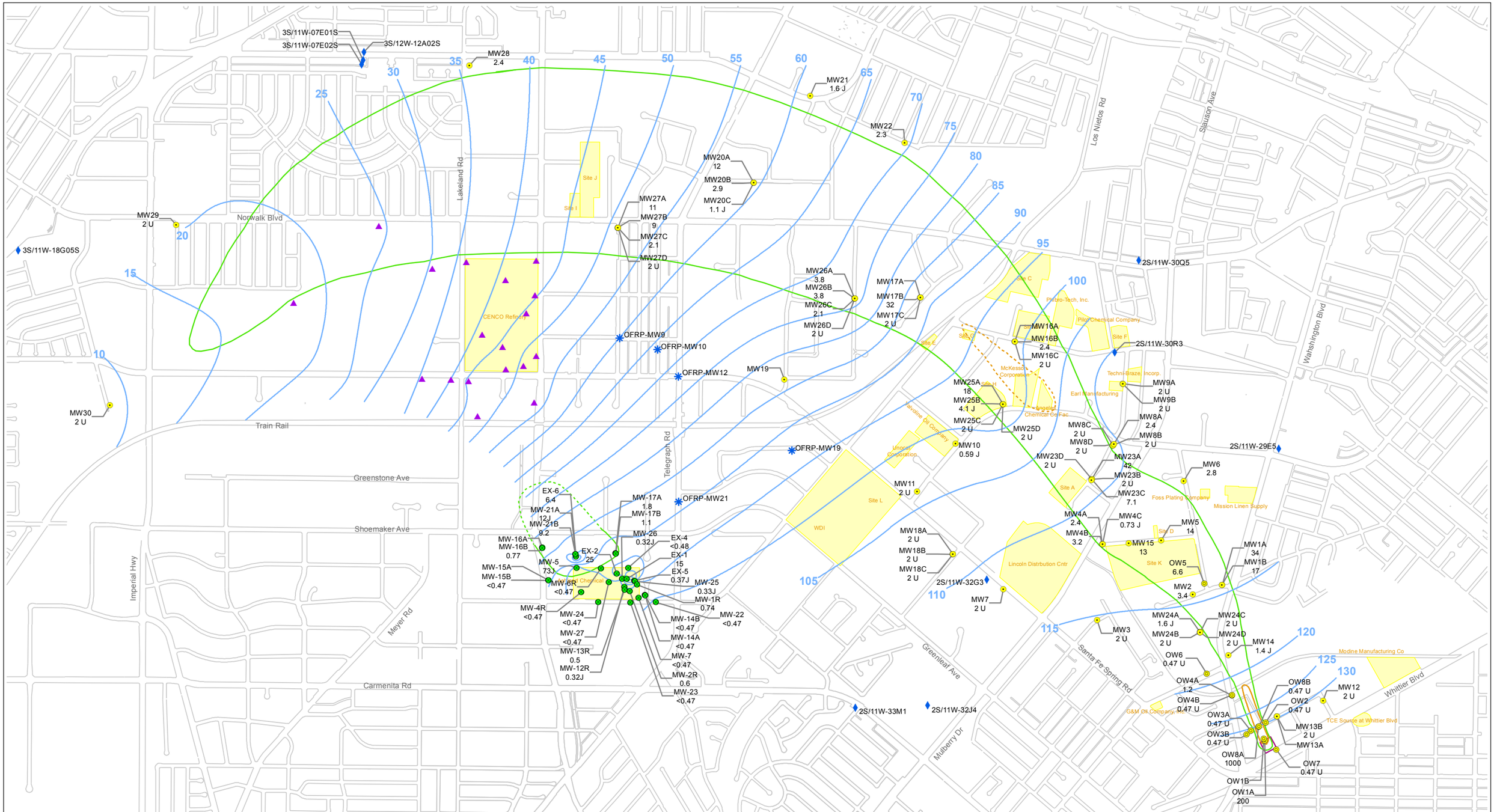
N

0 1000 2000 Feet

Figure 3-11a
Composite 1,4 Dioxane Distribution
First Quarter 2008
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_1Q2008_1,4 Dioxane.mxd



Legend

- EPA Monitoring Well (March 2009)
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well (March 2009)
- CENCO Well 1st Quarter, 2009
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite1,4 Dioxane Plume Extent 1Q2009

- 100 ug/L (Dashed where approximated)
- 3 ug/L (Dashed where approximated)
- Water Level Contour First Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

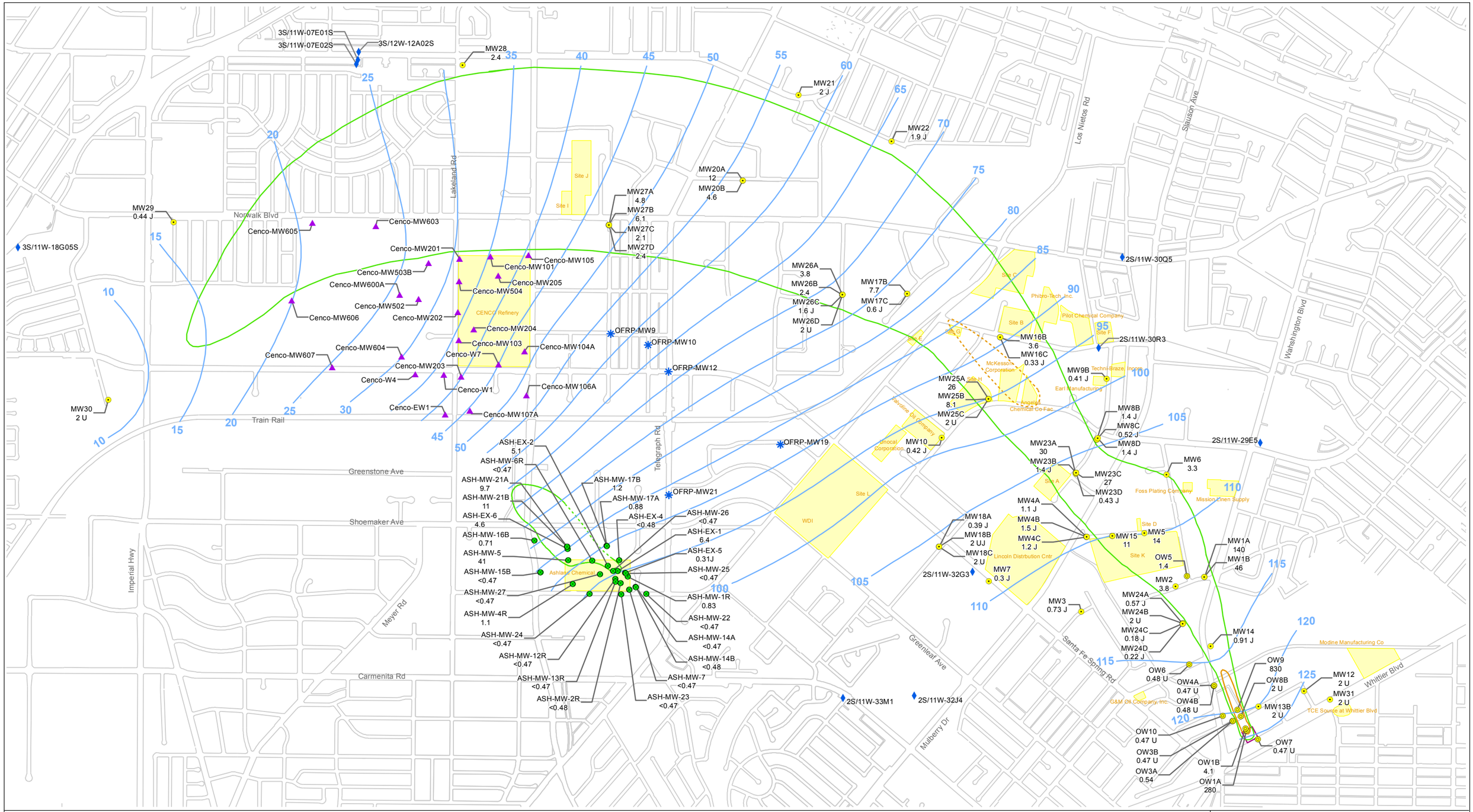
N

0 1000 2000 Feet

Figure 3-11b
Composite 1,4 Dioxane Distribution
First Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_1Q_2009\Map_2010Annual\OMEG_1Q2009_1,4 Dioxane.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

Composite1,4 Dioxane Plume Extent

- 100 ug/L (Dashed where approximated)
- 3 ug/L (Dashed where approximated)
- Water Level Contour Third Quarter 2009

Notes:
1) J - Estimated Value upper level of instrument calibration range.
2) U - Non-Detect
3) E - Estimated value as the concentration exceeding upper level of instrument calibration range.
4) NS - Not Sampled

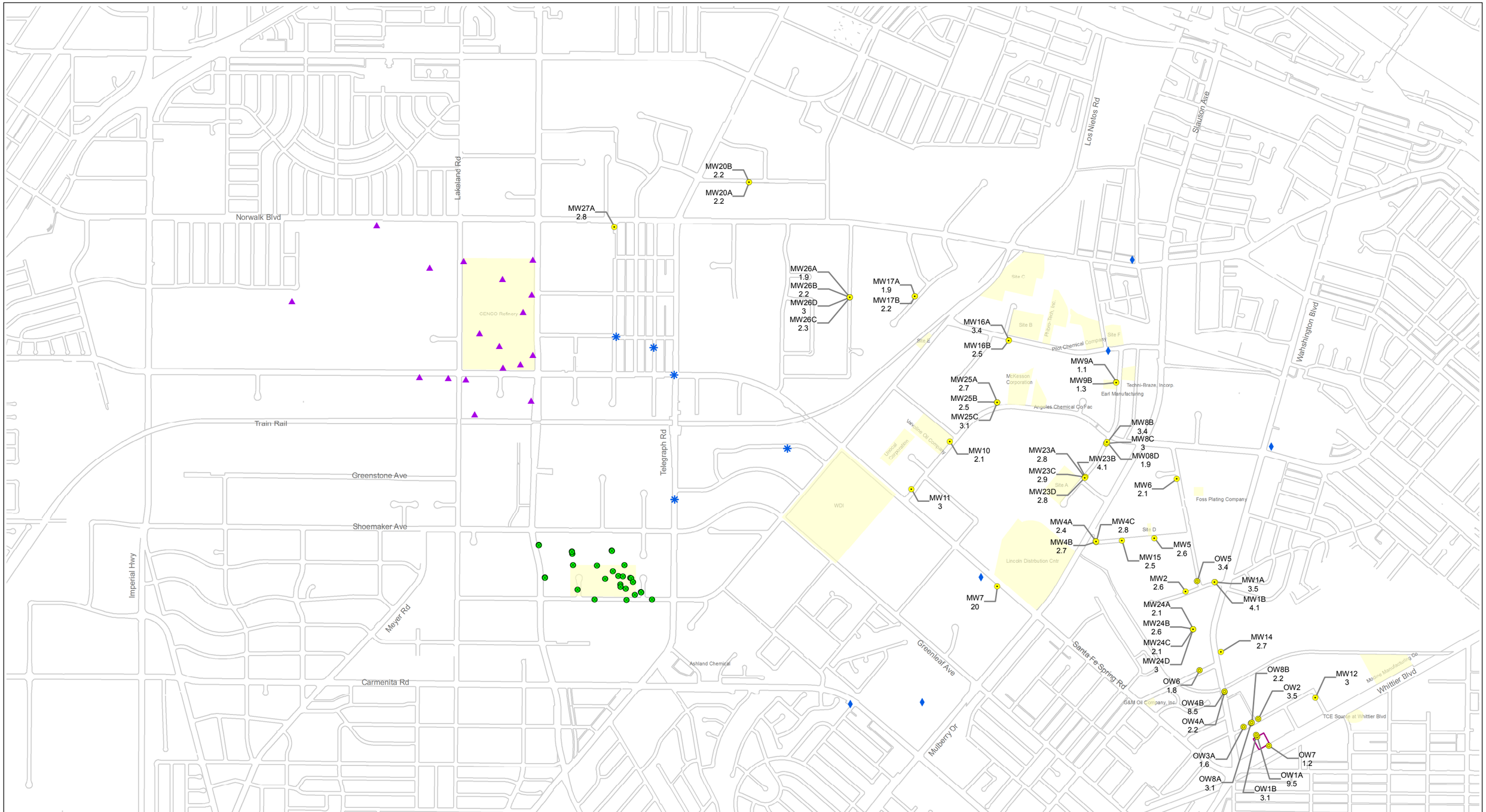
N

0 1000 2000 Feet

Figure 3-11c
Composite 1,4 Dioxane Distribution
Third Quarter 2009
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\OMEGA_2010_Annual_Report\Maps\OMEG_3Q2009_1,4 Dioxane.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well
- CENCO Well
- Ashland Chemical Well
- Oil Field Reclamation Project(OFRP)
- Production Well
- Approximate Boudary of Facilities
- Former Omega Facility

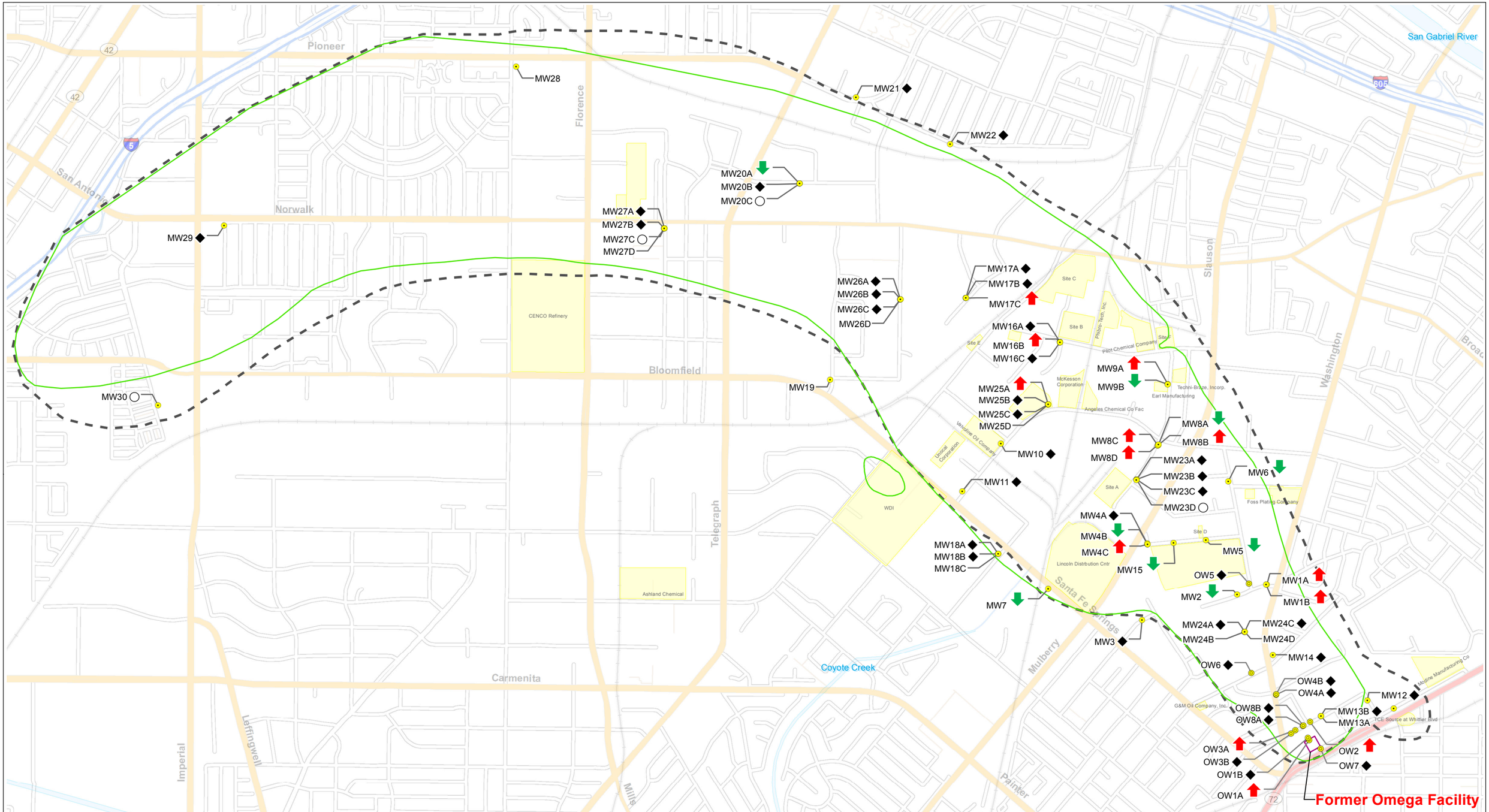
N

0 1000 2000 Feet

Figure 3-12
Freon 113 to Freon 11 Ratios
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Tredn\Freon113_11.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

PCE Contour Line

- 5 ug/L (March 2009)

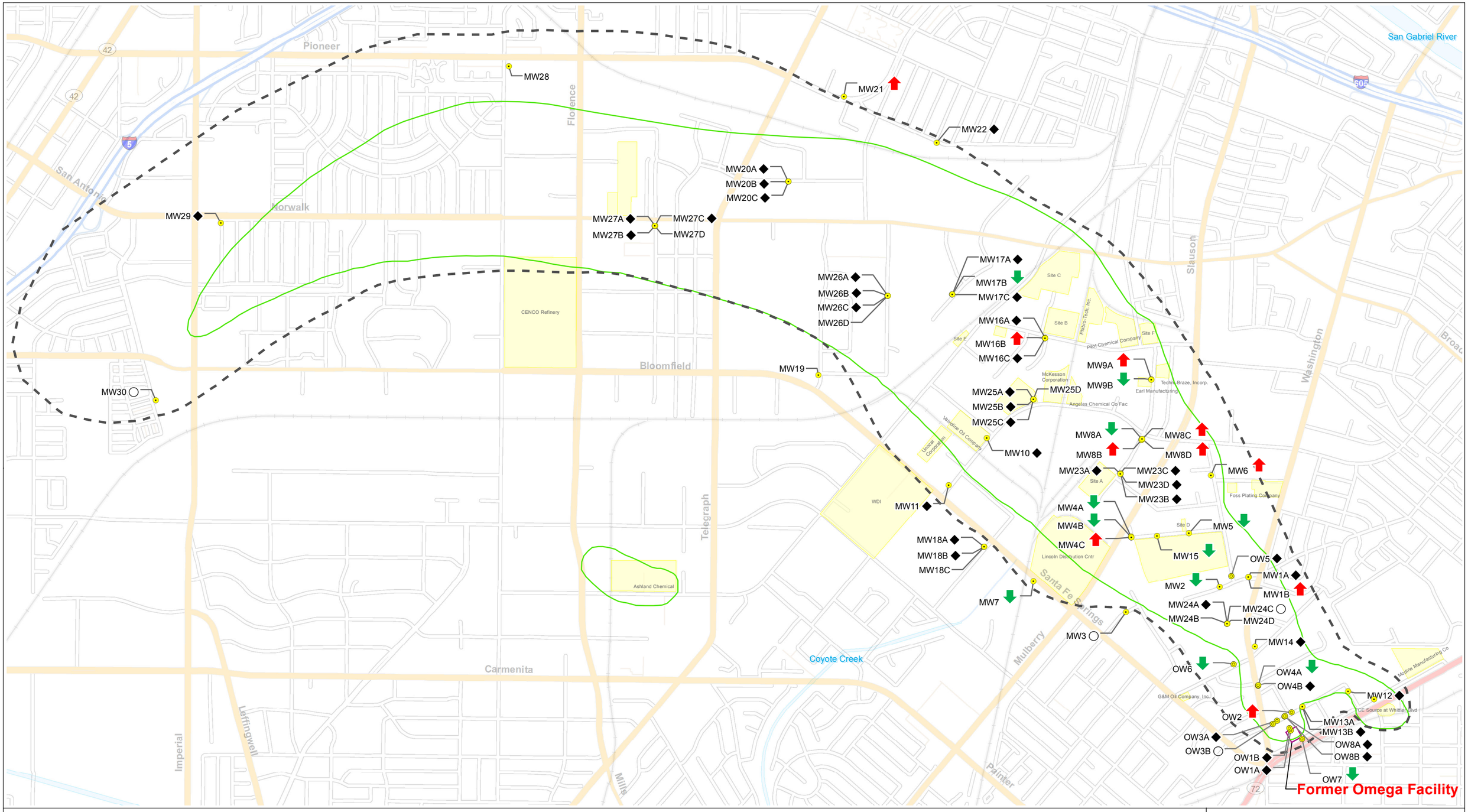
N

0 1000 2000 Feet

Figure 13
PCE Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\PCE_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

TCE Contour Line

- 5 ug/L (March 2009)

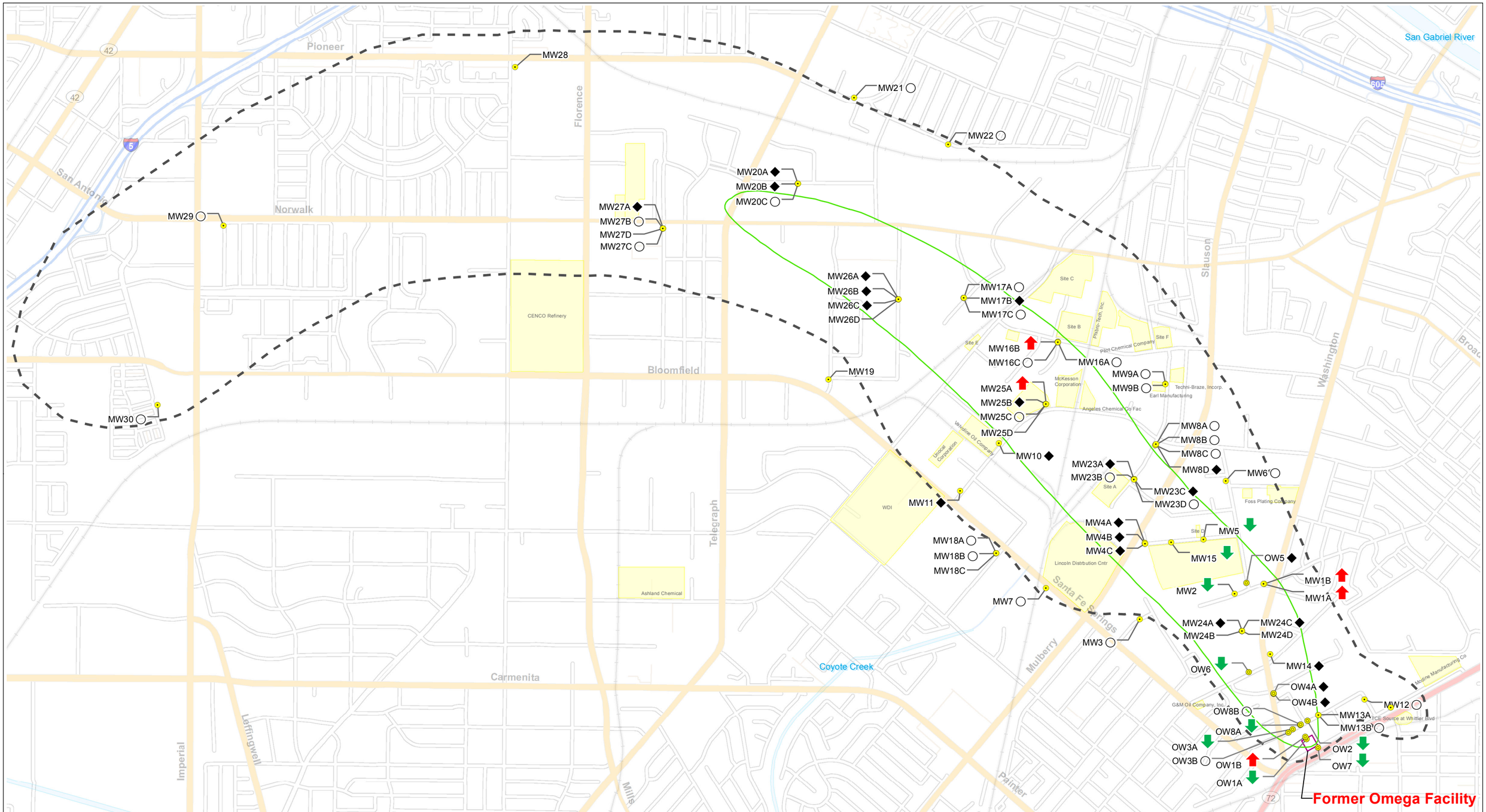
N

0 1000 2000 Feet

Figure 14
TCE Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\TCE_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

Freon 11 Contour Line

- 5 ug/L (March 2009)

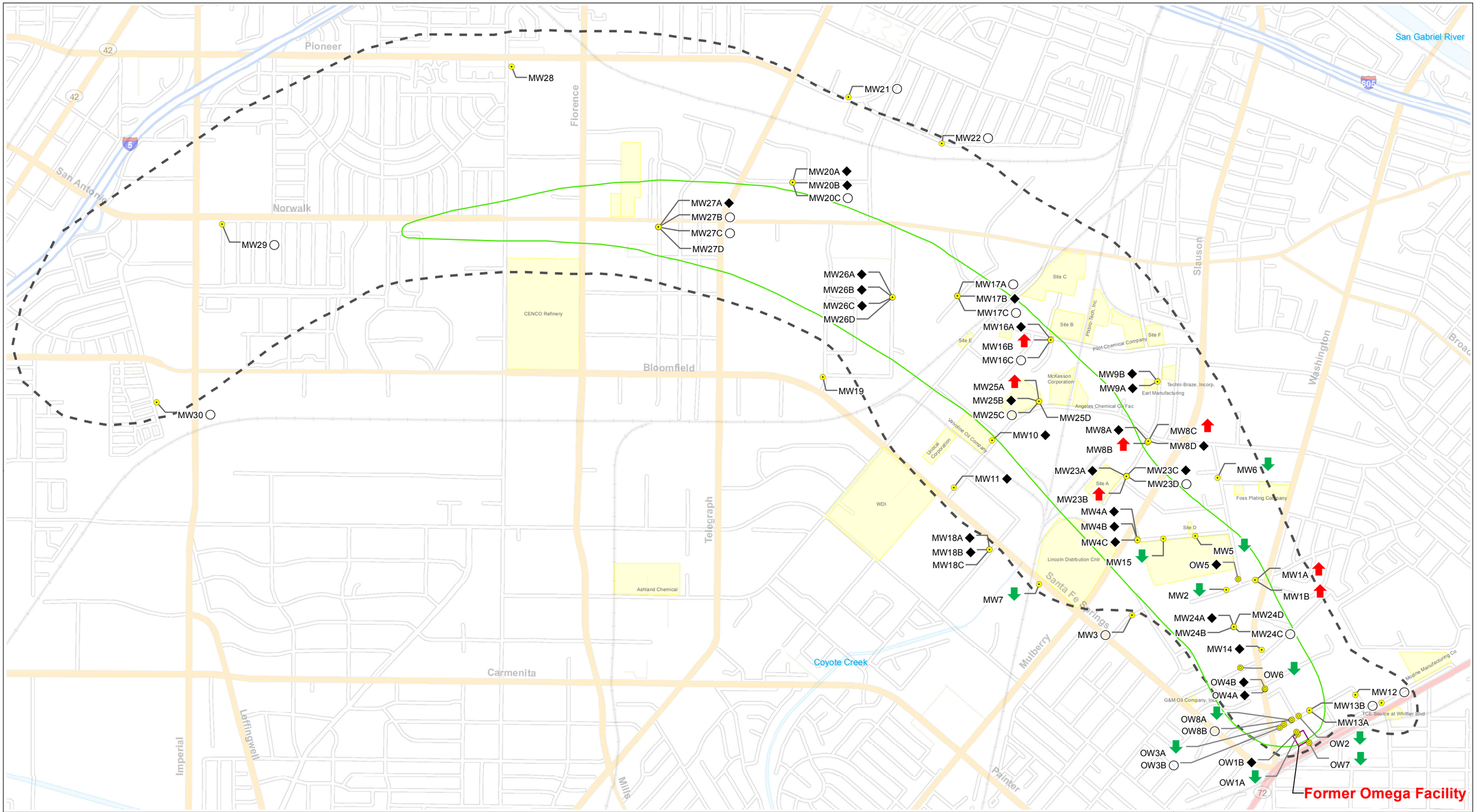
N

0 1000 2000 Feet

Figure 15
Freon 11 Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\F11_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

Freon 113 Contour Line

- 5 ug/L (March 2009)

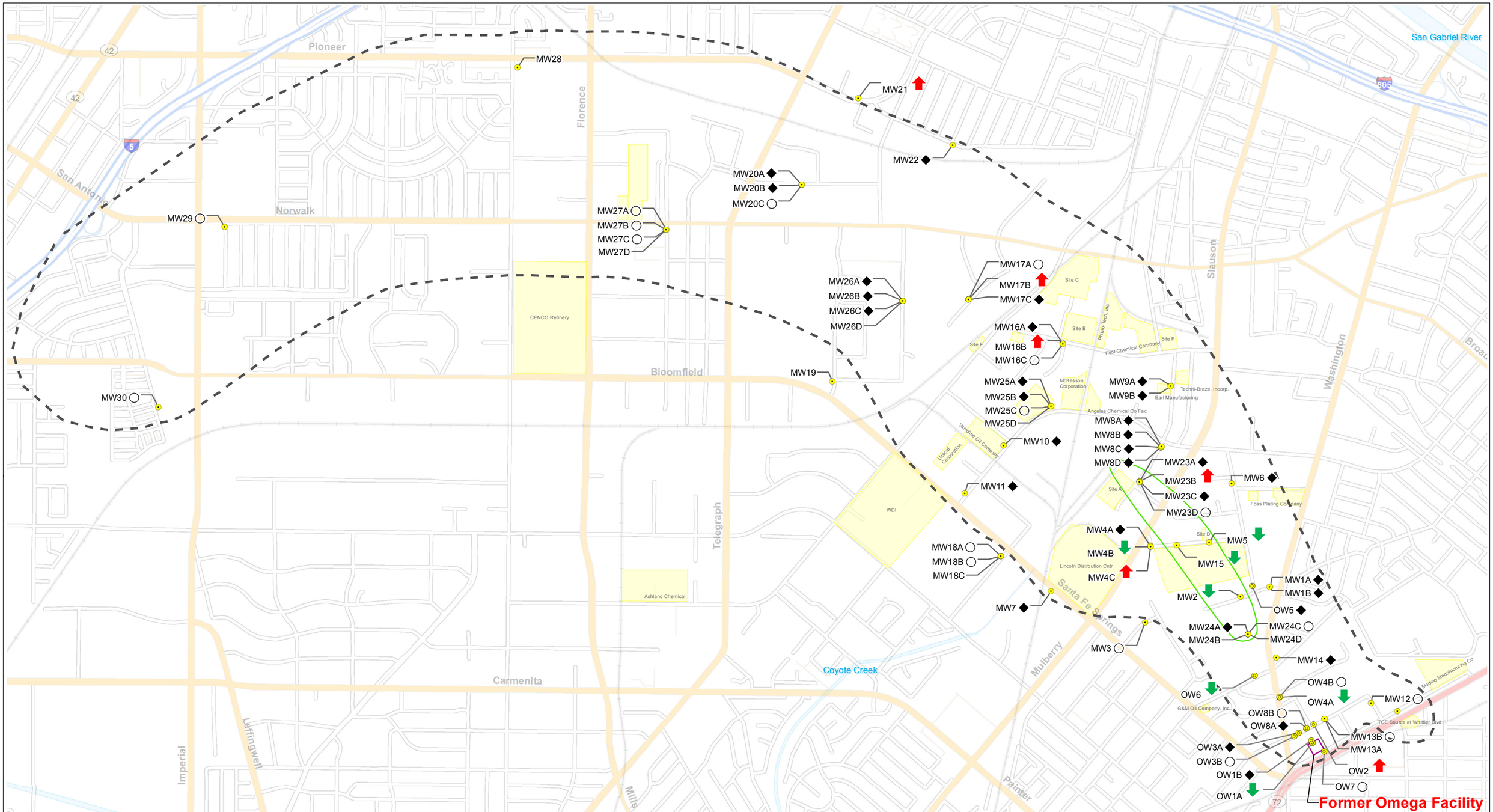
N

0 1000 2000 Feet

Figure 16
Freon 113 Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\F113_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

TCLME Contour Line

- 80 ug/L (March 2009)

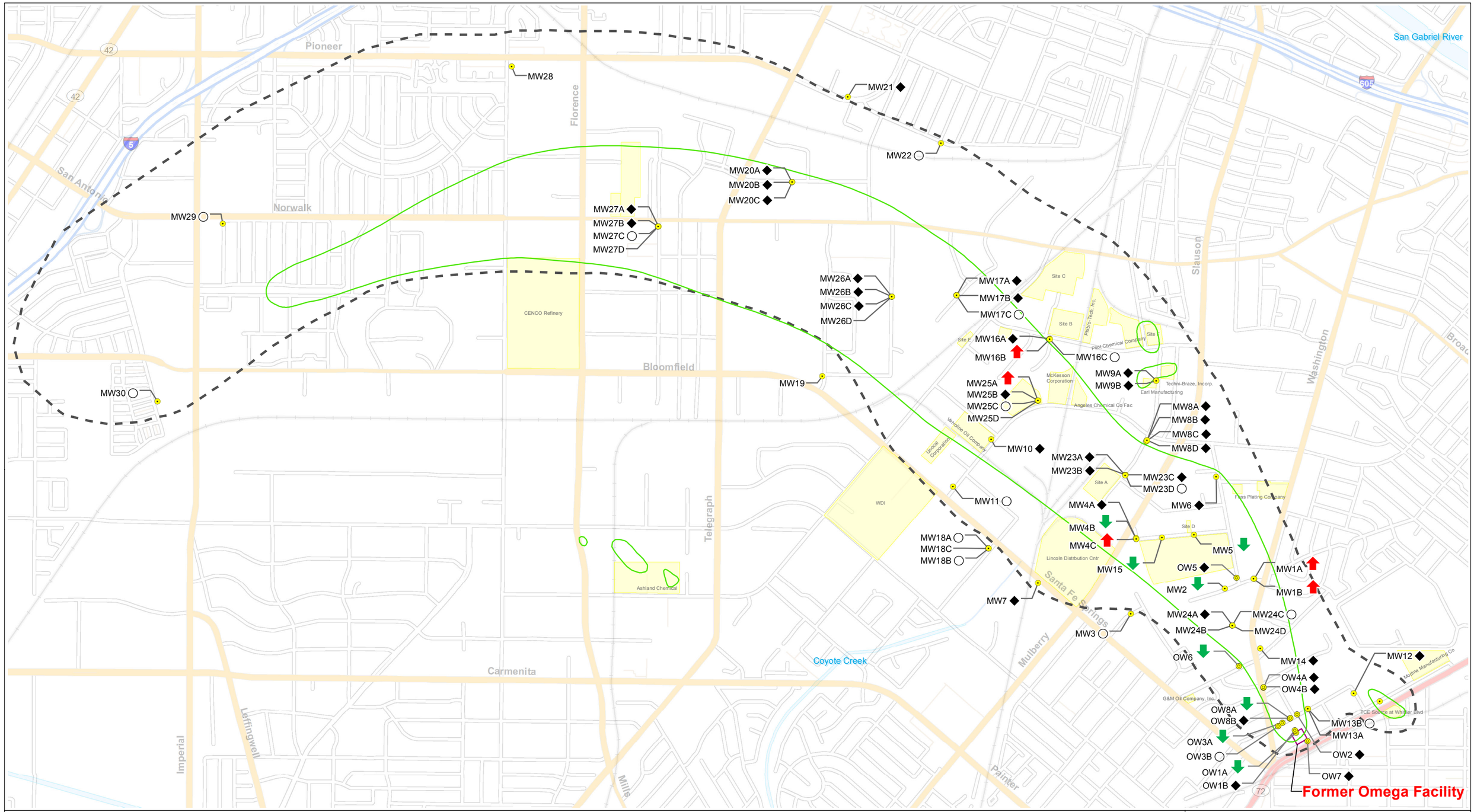
N

0 1000 2000 Feet

Figure 17
Trichloromethylene Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\TCLME_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

1,1 DCE Contour Line

- 6 ug/L (March 2009)

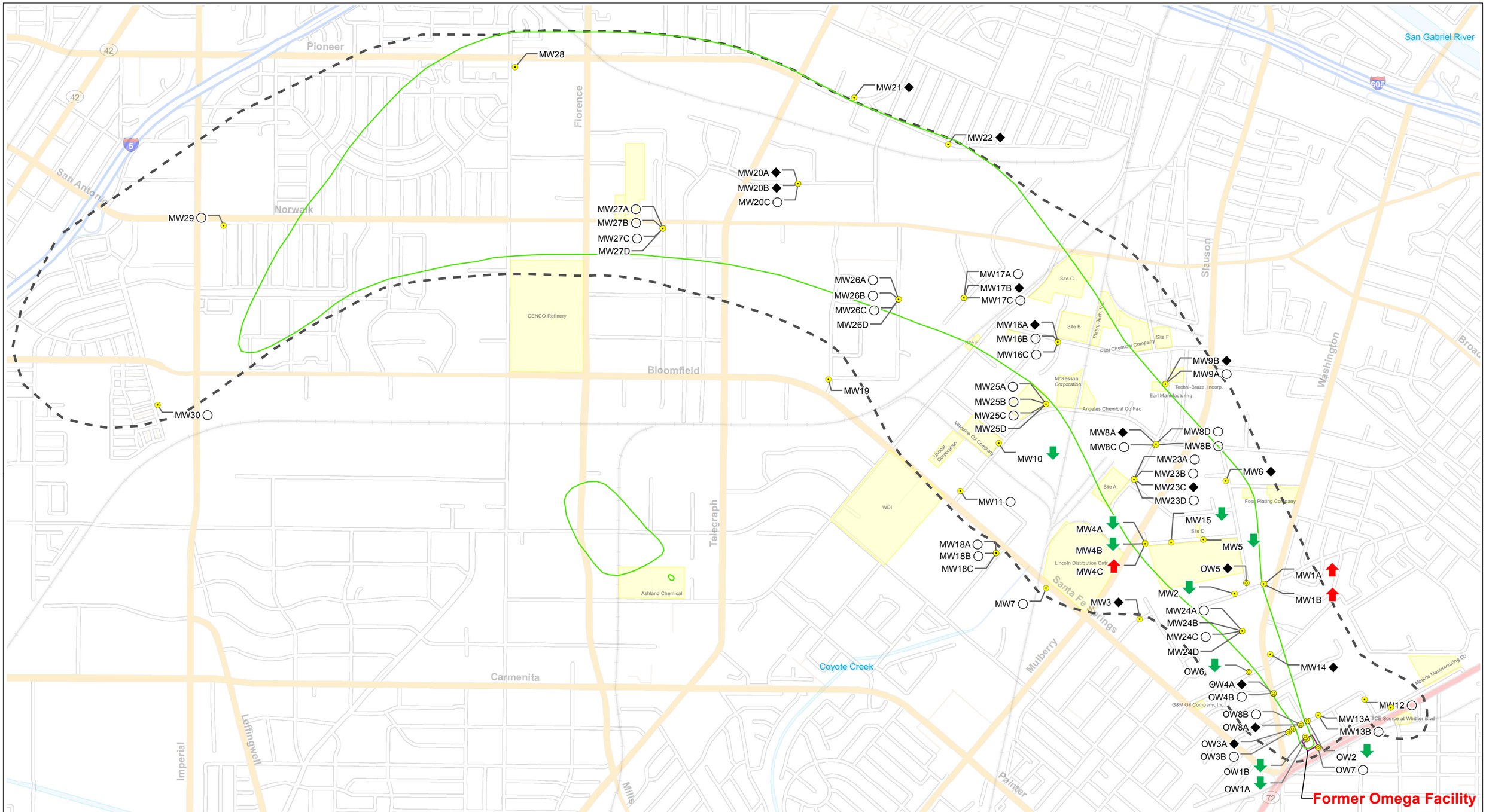
N

0 1000 2000 Feet

Figure 18
1,1 DCE Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\11DCE_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

1,4 Dioxane Contour Line

- 3 ug/L (March 2009)

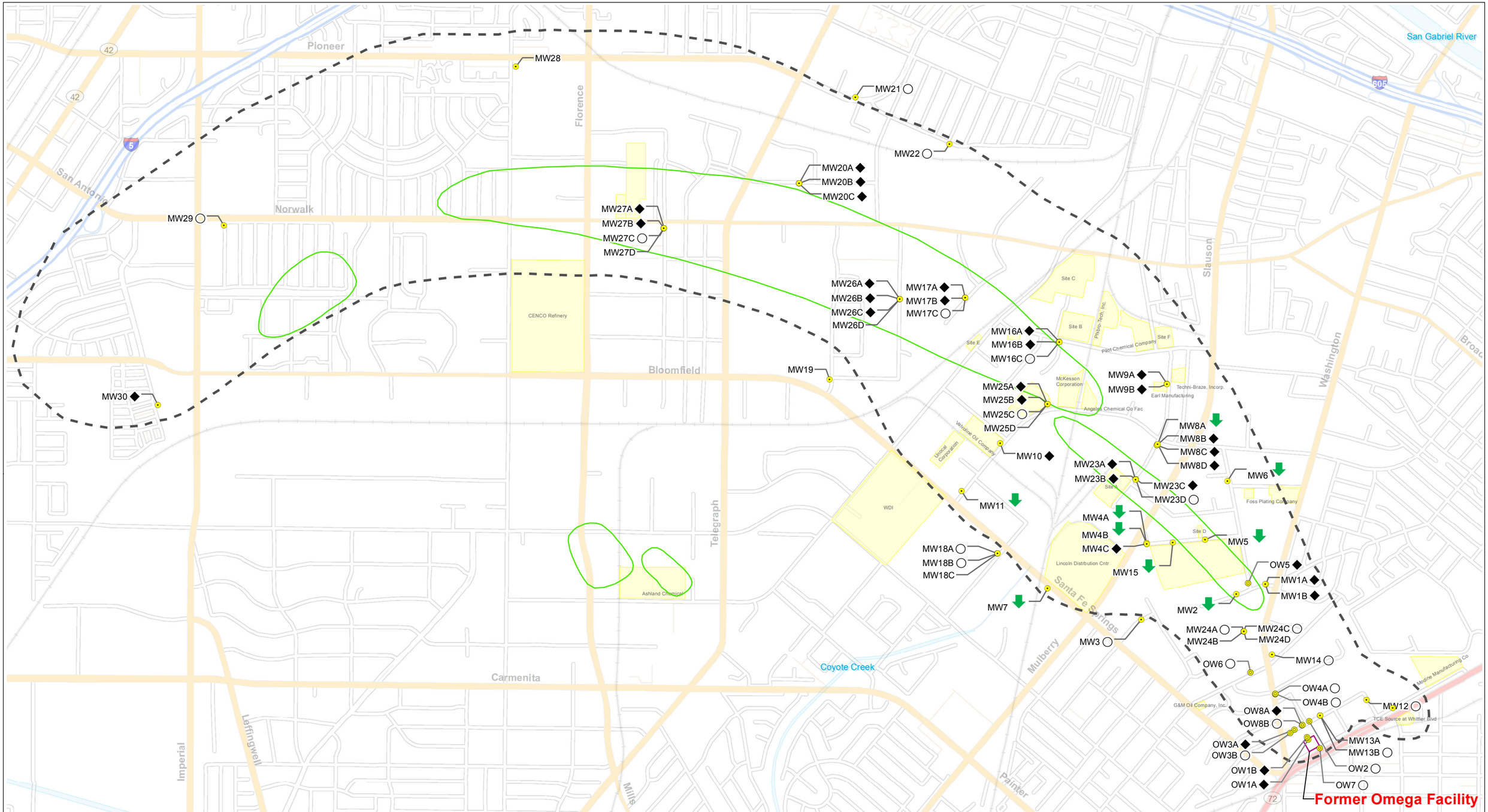
N

0 1000 2000 Feet

Figure 19
1,4 DioxaneTemporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\14Dioxane_Omega_MTRX_Trend.mxd



Legend

- EPA Monitoring Well
- Omega Potentially Responsible Parties Organized Group(OPOG) Monitoring Well

Trend

- Increasing
- Decreasing
- No Trend
- Not Sufficient Data

- OU2 Outline
- Approximate Boundary of Facilities
- Former Omega Facility

cis-1,2 DCE Contour Line

- 6 ug/L (March 2009)

N

0 1000 2000 Feet

Figure 20
cis-1,2 DCE Temporal Trend Distribution
Omega Chemical Superfund Site

CH2MHILL

Path: Y:\2009-CH2Mhill\Omega\Omega_MTRX_Trend\Mxd\CIS12DCE_Omega_MTRX_Trend.mxd

Appendix A
Monitoring Well Purge Forms
(on CD only)

Appendix A.1
1Q2008
Well Purge Forms
(on CD only)

Appendix A.2
1Q2009
Well Purge Forms
(on CD only)

Appendix A.3
3Q2009
Well Purge Forms
(on CD only)

Appendix B
Chain-of-Custody Forms
(on CD only)

Appendix B.1
OU1 Chain-of-Custody Forms
(on CD only)

Appendix B.1.1
1Q2008
OU1 Chain-of-Custody Forms
(on CD only)

Appendix B.1.2
1Q2009
OU1 Chain-of-Custody Forms
(on CD only)

Appendix B.1.3
3Q2009
OU1 Chain-of-Custody Forms
(on CD only)

Appendix B.2
OU2 Chain-of-Custody Forms
(on CD only)

Appendix B.2.1
1Q2008
OU2 Chain-of-Custody Forms
(on CD only)

Appendix B.2.2
1Q2009
OU2 Chain-of-Custody Forms
(on CD only)

Appendix B.2.3
3Q2009
OU2 Chain-of-Custody Forms
(on CD only)

Appendix C
Data Needs and Uses
(on CD only)

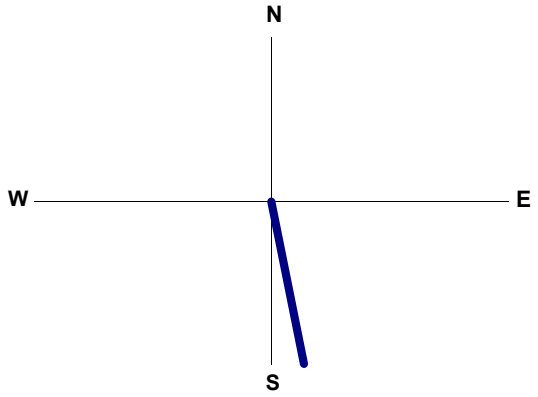
Appendix D
OU2 Shallow Groundwater Gradient Calculations

Groundwater Flow Gradient

Date: 1Q2008

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW30	401820.19	3753277.41	3.54
Cenco-MW-606	401299.00	3754238.00	6.43
Cenco-MW-607	401650.00	3754450.00	6.89

Gradient: 0.0028 (dimensionless)

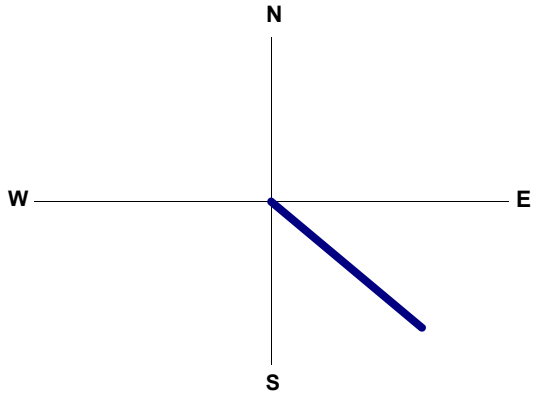


Groundwater Flow Gradient

Date: 1Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW30	401820.19	3753277.41	2.58
MW29	400888.76	3753618.89	6.22
Cenco-MW-607	401650.00	3754450.00	6.89

Gradient: 0.0043 (dimensionless)

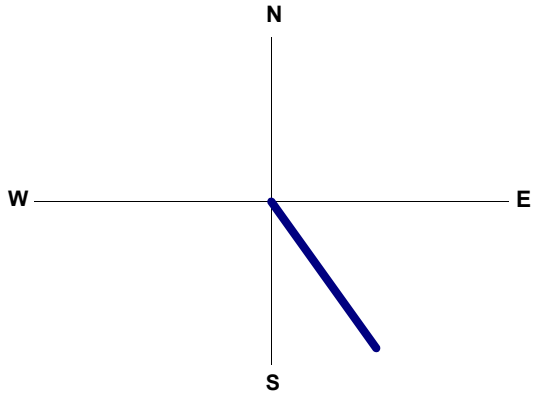


Groundwater Flow Gradient

Date: 3Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW30	401820.19	3753277.41	1.35
MW29	400888.76	3753618.89	5.43
Cenco-W-4	401686.00	3754886.00	9.86

Gradient: 0.0057 (dimensionless)

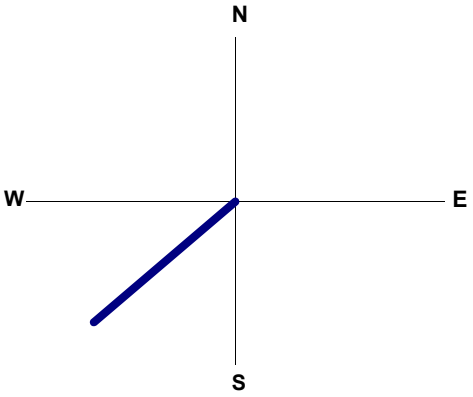


Groundwater Flow Gradient

Date: 1Q2008

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW19	401687.06	3756760.85	27.57
MW20A	400670.84	3756601.72	20.63
MW27A	400902.97	3755901.78	17.52

Gradient: 0.0086 (dimensionless)

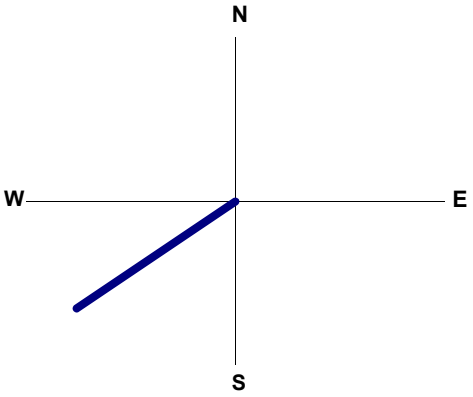


Groundwater Flow Gradient

Date: 1Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW19	401687.06	3756760.85	25.83
MW20A	400670.84	3756601.72	18.09
MW27A	400902.97	3755901.78	15.60

Gradient: 0.0089 (dimensionless)

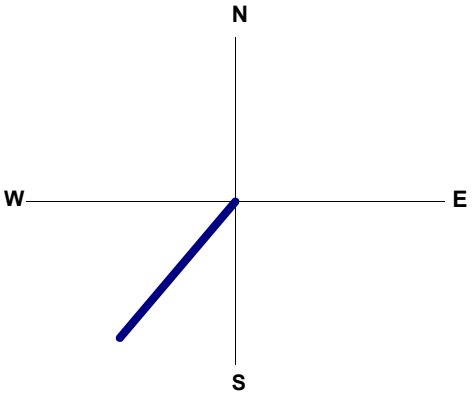


Groundwater Flow Gradient

Date: 3Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW26A	401270.06	3757125.16	21.48
MW20A	400670.84	3756601.72	17.19
MW27A	400902.97	3755901.78	14.64

Gradient: 0.0056 (dimensionless)

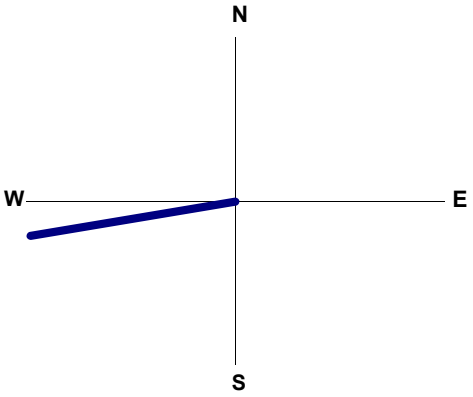


Groundwater Flow Gradient

Date: 1Q2008

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW2	402799.48	3758870.16	36.43
MW3	402931.54	3758376.49	36.47
MW5	402519.71	3758707.96	35.95

Gradient: 0.0016 (dimensionless)

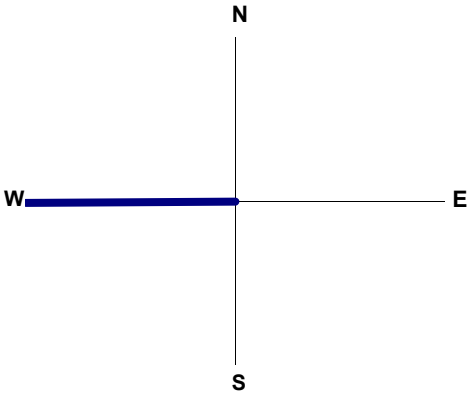


Groundwater Flow Gradient

Date: 1Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW2	402799.48	3758870.16	34.73
MW3	402931.54	3758376.49	35.05
MW5	402519.71	3758707.96	34.03

Gradient: 0.0025 (dimensionless)

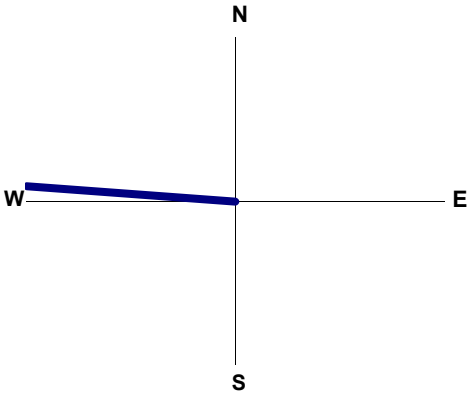


Groundwater Flow Gradient

Date: 3Q2009

Well ID	Easting, x (meters)	Northing, y (meters)	Groundwater Elevation (meters)
MW2	402799.48	3758870.16	33.99
MW3	402931.54	3758376.49	34.37
MW5	402519.71	3758707.96	33.41

Gradient: 0.0022 (dimensionless)



Appendix E
VOC Detection Summary: 1Q2008, 1Q2009, and 3Q2009

Appendix E.1
1Q2008

Appendix E1
Summary of Detections - First Quarter 2008
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	12	0.50 to 5.00	0.2 J to 2600	OW1A	200	1	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	NA	0.50 to 50.0	ND	NE	1	0	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	44	0.50 to 5000	0.23 J to 1200	OW8A	1200	0	CA/USEPA Primary MCL
1,1,2-Trichloroethane	7	0.50 to 50.0	0.21 J to 0.8	MW23A	5	0	CA/USEPA Primary MCL
1,1-Dichloroethane	26	0.50 to 5.00	0.22 J to 100	MW17A	5	7	CA Primary MCL
1,1-Dichloroethene	50	0.50 to 1.00	0.21 J to 1000	OW1A	6	34	CA Primary MCL
1,1-Dichloropropene	NA	0.50 to 50.0	ND	NE	NE	0	
1,2,3-Trichlorobenzene	NA	0.50 to 50.0	ND	NE	NE	0	
1,2,3-Trichloropropane	NA	0.50 to 50.0	ND	NE	0.005	0	CA Department of Health Services State notification
1,2,4-Trichlorobenzene	NA	0.50 to 50.0	ND	NE	5	0	CA Primary MCL
1,2,4-Trimethylbenzene	NA	0.50 to 50.0	ND	NE	330	0	CA Department of Health Services State notification
1,2-Dibromo-3-chloropropane	NA	0.50 to 5000	ND	NE	0.2	0	CA/USEPA Primary MCL
1,2-Dibromoethane	NA	0.50 to 50.0	ND	NE	0.05	0	CA/USEPA Primary MCL
1,2-Dichlorobenzene	1	0.50 to 50.0	0.22 J	MW6	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	20	0.50 to 500	0.94 to 280	EW-2	0.5	20	CA Primary MCL
1,2-Dichloropropane	NA	0.50 to 50.0	ND	NE	5	0	CA/USEPA Primary MCL
1,3,5-Trimethylbenzene	NA	0.50 to 50.0	ND	NE	330	0	CA Department of Health Services State notification
1,3-Dichlorobenzene	NA	0.50 to 50.0	ND	NE	600	0	CA Department of Health Services State notification
1,4-Dichlorobenzene	NA	0.50 to 50.0	ND	NE	5	0	CA Primary MCL
2,2-Dichloropropane	NA	0.50 to 50.0	ND	NE	NE	0	
2-Chlorotoluene	NA	0.50 to 50.0	ND	NE	140	0	CA Department of Health Services State notification
2-Hexanone	NA	5	ND	NE	NE	0	
4-Chlorotoluene	NA	0.50 to 50.0	ND	NE	140	0	CA Department of Health Services State notification
Benzene	5	0.50 to 500	0.21 J to 0.29 J	MW23A	1	0	CA Primary MCL
Bromochloromethane	NA	0.50 to 50.0	ND	NE	NE	0	
Bromodichloromethane	NA	0.50 to 50.0	ND	NE	80	0	CA/USEPA Primary MCL
Bromoform	NA	0.50 to 50.0	ND	NE	80	0	CA/USEPA Primary MCL
Carbon disulfide	NA	0.5	ND	NE	160	0	CA Department of Health Services State notification
Carbon tetrachloride	4	0.50 to 500	0.2 J to 0.37 J	MW17C	0.5	0	CA Primary MCL
Chlorobenzene	NA	0.50 to 50.0	ND	NE	70	0	CA Primary MCL
Chloroethane	NA	0.50 to 50.0	ND	NE	16	0	Other taste and Odor
Chloroform	44	0.50 to 1000	0.23 J to 1100	EW-2	80	6	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	40	0.50 to 50.0	0.24 J to 170 J	MW17A	6	15	CA Primary MCL
cis-1,3-Dichloropropene	1	0.50 to 500	0.21 J	MW26C	0.5	0	CA Primary MCL for 1,3-dichloropropene
Dibromochloromethane	NA	0.50 to 50.0	ND	NE	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	13	0.50 to 5000	0.25 J to 2.9	MW15	1000	0	CA Department of Health Services State notification
Dichlorotrifluoroethane	1	NA	4.2 J	OW1B	NE	0	
Ethylbenzene	NA	0.50 to 50.0	ND	NE	300	0	CA Primary MCL
Isopropylbenzene	NA	0.50 to 50.0	ND	NE	770	0	CA Department of Health Services State notification
m,p-Xylenes	NA	0.50 to 5.00	ND	NE	1750	0	CA Primary MCL
Methyl cyclohexane	NA	0.5	ND	NE	NE	0	

Appendix E1
Summary of Detections - First Quarter 2008
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
Methyl isobutyl ketone	NA	5	ND	NE	120	0	CA Department of Health Services State notification
Methyl tert-butyl ether	19	0.50 to 5.00	0.2 J to 3.9	MW30	13	0	CA Primary MCL
Methylene chloride	4	0.50 to 5000	5 J to 480 J	OW1A	5	3	CA/USEPA Primary MCL
Naphthalene	NA	0.50 to 50.0	ND	NE	17	0	CA Department of Health Services State notification
N-butylbenzene	NA	0.50 to 50.0	ND	NE	260	0	CA Department of Health Services State notification
n-Propylbenzene	NA	0.50 to 50.0	ND	NE	260	0	CA Department of Health Services State notification
o-Xylene	NA	0.50 to 50.0	ND	NE	1750	0	CA Primary MCL
p-Isopropyltoluene	NA	0.50 to 50.0	ND	NE	NE	0	
sec-Butylbenzene	NA	0.50 to 50.0	ND	NE	260	0	CA Department of Health Services State notification
Styrene	NA	0.50 to 50.0	ND	NE	100	0	CA/USEPA Primary MCL
t-Butylbenzene	NA	0.50 to 50.0	ND	NE	260	0	CA Department of Health Services State notification
Tetrachloroethene	66	0.5	0.2 J to 170000 J	OW1A	5	48	CA/USEPA Primary MCL
Toluene	NA	0.50 to 50.0	ND	NE	150	0	CA Primary MCL
trans-1,2-Dichloroethene	15	0.50 to 50.0	0.22 J to 56 J	MW23A	10	5	CA Primary MCL
trans-1,3-Dichloropropene	NA	0.50 to 500	ND	NE	0.5	0	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	62	0.50 to 1.00	0.28 J to 3800	OW1A	5	43	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	38	0.50 to 50.0	0.65 to 370	MW15	150	7	CA Primary MCL
Vinyl chloride	2	0.50 to 500	0.4 J to 0.43 J	MW27B	0.5	0	CA Primary MCL

Notes:
J = Estimated value
ug/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

First Quarter 2008 QC Sample Results
Omega Chemical Corporation Superfund Site

Analyte	Concentration [µg/L]	Qualifier	Method Detection Limit [µg/L]	Report Detection Limit [µg/L]
Ambient Blanks				
OC2-AB1-W-2-648 2/21/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloroform	0.98		0.12	0.5
Methylene chloride	1.2		0.1	0.5
OC2-AB2-W-2-667 2/26/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloroform	0.99		0.12	0.5
Methylene chloride	1.2		0.1	0.5
OC2-AB3-W-2-678 2/28/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloroform	1.0		0.12	0.5
Methylene chloride	1.2		0.1	0.5
OC2-AB4-W-2-701 3/3/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloroform	0.95		0.12	0.5
Methylene chloride	1.1		0.1	0.5
OC2-AB5-W-2-715 3/5/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloroform	0.94		0.12	0.5
Methylene chloride	1.2		0.1	0.5
Trip Blanks				
OC2-TB1-W-4-657 2/25/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
OC2-TB2-W-4-673 2/27/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
Chloromethane	0.22	J	0.15	0.5
OC2-TB3-W-4-692 2/29/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05
OC2-TB4-W-4-707 3/4/2008				
1,2-Dibromo-3-chloropropane	0.05	R	0.0005	0.05

Notes:

J = Estimated value
µg/L = micrograms per Liter

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW18A-W-0-670	OC2-MW18A-W-1-671		
MW18A	02/27/08	1,4-Dioxane (p-dioxane)	µg/L	2 U	2 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	0.5 U	0.5 U	NC	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW18A-W-0-670	**OC2-MW18A-W-1-671**		
MW18A	02/27/08	Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	4.5	4.3	5	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	0.83	0.79	5	A
		Trichlorofluoromethane (Freon 11)	µg/L	0.5 U	0.5 U	NC	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				OC2-MW1A-W-0-659	**OC2-MW1A-W-1-660**		
MW1A	02/26/08	1,4-Dioxane (p-dioxane)	µg/L	18	11	48	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	140	130	7	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.57	0.67	16	A
		1,1-Dichloroethene	µg/L	53 J	60 J	12	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	3	3.2	6	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 UJ	0.5 UJ	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW1A-W-0-659	**OC2-MW1A-W-1-660**		
MW1A	02/26/08	Chloroform	µg/L	15	16	6	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	18 J	20 J	11	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	290	290	0	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.79 J	0.89 J	12	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	460	480	4	A
		Trichlorofluoromethane (Freon 11)	µg/L	33	0.5 U	NC	MD
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				OC2-MW20A-W-0-699	**OC2-MW20A-W-1-700**		
MW20A	03/03/08	1,4-Dioxane (p-dioxane)	µg/L	8.1	7.9	2	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	11	11	0	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	3.9	3.9	0	A
		1,1-Dichloroethene	µg/L	15 J	17 J	13	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW20A-W-0-699	**OC2-MW20A-W-1-700**		
MW20A	03/03/08	1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	0.62	0.67	8	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	1.4 J	1.4 J	0	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	25	25	0	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	37	38	3	A
		Trichlorofluoromethane (Freon 11)	µg/L	4.3	4.1	5	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				OC2-MW25A-W-0-687	**OC2-MW25A-W-1-688**		
MW25A	02/29/08	1,4-Dioxane (p-dioxane)	µg/L	3.1	3.2	3	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW25A-W-0-687	OC2-MW25A-W-1-688		
MW25A	02/29/08	1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	38	31	20	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.97	1.2	21	A
		1,1-Dichloroethene	µg/L	24 J	23 J	4	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	1.1	0.97	13	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 UJ	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 UJ	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 UJ	0.5 U	NC	A
		Chloroform	µg/L	8.6	8.5	1	A
		Chloromethane	µg/L	0.5 UJ	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	4.4 J	4.3 J	2	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 UJ	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.32 J	0.3 J	6	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW25A-W-0-687	**OC2-MW25A-W-1-688**		
MW25A	02/29/08	Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	100	100	0	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	3.6 J	0.5 U	NC	MD
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	43	45	5	A
		Trichlorofluoromethane (Freon 11)	µg/L	7.4	7.7	4	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				OC2-MW26C-W-0-709	**OC2-MW26C-W-1-710**		
MW26C	03/05/08	1,4-Dioxane (p-dioxane)	µg/L	2.9	2.7	7	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	120	91	27	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.94	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	25 J	21 J	17	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.2 J	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	1	0.96	4	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW26C-W-0-709	**OC2-MW26C-W-1-710**		
MW26C	03/05/08	Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	4.8 J	4.5 J	6	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.21 J	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	73	67	9	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	99	93	6	A
		Trichlorofluoromethane (Freon 11)	µg/L	43	37	15	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				OC2-MW8D-W-649	**OC2-MW8D-W-1-650**		
MW8D	02/25/08	1,4-Dioxane (p-dioxane)	µg/L	2 U	2 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	6	5.5	9	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	1.3	1.2	8	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				OC2-MW8D-W-649	OC2-MW8D-W-1-650		
MW8D	02/25/08	1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.22 J	0.22 J	0	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	0.84	0.84	0	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	0.65	0.62	5	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	6.6	6.5	2	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	100	110	10	A
		Trichlorofluoromethane (Freon 11)	µg/L	2.9	2.9	0	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A

Notes

RPD - Relative Percent Difference = { (Primary Sample - Field Duplicate) / (Primary Sample + Field Duplicate) / 2 } x 100
RPD is calculated and shown only when both the primary and Field Duplicate samples are detected above the Reporting Limit

Guidance for Comparing Split Sample Data:

Agreement (A)
Disagreement (D): >3x difference when one result is <RL, >2x difference
Major Disagreement (MD): >5x difference when one result is <RL, >3x difference
.
NC - not calculated
µg/L - micrograms per liter
mg/L - milligrams per liter
U - Not detected at or above the reporting limit.
UJ - Not detected at or above the reporting limit. The reporting limit is an estimate.
J - Estimated value.

Appendix E.2
1Q2009

Appendix E2
Summary of Detections - First Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	7	0.50 to 20.0	0.23 J to 2000	OW1A	200	2	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	1	0	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	43	0.50 to 5000	0.3 J to 1700	OW8A	1200	1	CA/USEPA Primary MCL
1,1,2-Trichloroethane	4	0.50 to 20.0	0.5 J to 90 J	OW8A	5	1	CA/USEPA Primary MCL
1,1-Dichloroethane	23	0.50 to 20.0	0.2 J to 74 J	OW8A	5	5	CA Primary MCL
1,1-Dichloroethene	49	0.50 to 1.00	0.22 J to 1500	OW9	6	32	CA Primary MCL
1,1-Dichloropropene	NA	1.00 to 20.0	ND	NE	NE	0	
1,2,3-Trichlorobenzene	6	0.50 to 20.0	0.5 J	MW10, MW8D	NE	0	
1,2,3-Trichloropropane	NA	1.00 to 20.0	ND	NE	0.005	0	CA Department of Health Services State notification
1,2,4-Trichlorobenzene	6	0.50 to 20.0	0.5 J	MW10, MW8D	5	0	CA Primary MCL
1,2,4-Trimethylbenzene	NA	1.00 to 20.0	ND	NE	330	0	CA Department of Health Services State notification
1,2-Dibromo-3-chloropropane	5	0.50 to 5000	0.5 J	MW1A, MW8D	0.200000003	5	CA/USEPA Primary MCL
1,2-Dibromoethane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	0.050000001	3	CA/USEPA Primary MCL
1,2-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 11 J	OW1B	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	11	0.50 to 500	0.5 J to 310	OW8A	0.5	9	CA Primary MCL
1,2-Dichloropropane	3	0.50 to 20.0	0.5 J	MW1A, MW8D	5	0	CA/USEPA Primary MCL
1,3,5-Trimethylbenzene	NA	1.00 to 20.0	ND	NE	330	0	CA Department of Health Services State notification
1,3-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 0.52 J	OW1B	600	0	CA Department of Health Services State notification
1,4-Dichlorobenzene	7	0.50 to 20.0	0.5 J to 1.4 J	OW1B	5	0	CA Primary MCL
2,2-Dichloropropane	NA	1.00 to 20.0	ND	NE	NE	0	
2-Chlorotoluene	NA	1.00 to 20.0	ND	NE	140	0	CA Department of Health Services State notification
2-Hexanone	3	5	5 J	MW1A, MW8D	NE	0	
4-Chlorotoluene	NA	1.00 to 20.0	ND	NE	140	0	CA Department of Health Services State notification
Benzene	4	0.50 to 500	0.44 J to 21 J	OW1B	1	1	CA Primary MCL
Bromochloromethane	2	0.50 to 20.0	0.5 J	MW8C, MW8D	NE	0	
Bromodichloromethane	4	0.50 to 20.0	0.5 J to 0.91 J	OW7	80	0	CA/USEPA Primary MCL
Bromoform	7	0.50 to 20.0	0.5 J to 0.99 J	OW7	80	0	CA/USEPA Primary MCL
Carbon disulfide	2	0.5	0.5 J	MW8C, MW8D	160	0	CA Department of Health Services State notification
Carbon tetrachloride	3	0.50 to 500	0.23 J to 0.5 J	MW1A, MW8C	0.5	0	CA Primary MCL
Chlorobenzene	4	0.50 to 20.0	0.5 J to 2.7 J	OW1B	70	0	CA Primary MCL
Chloroethane	2	0.50 to 20.0	0.5 J	MW8C, MW8D	16	0	Other taste and Odor
Chloroform	37	0.50 to 1000	0.21 J to 1100	OW9	80	2	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	34	0.50 to 20.0	0.22 J to 170 J	MW1A	6	9	CA Primary MCL
cis-1,3-Dichloropropene	3	0.50 to 500	0.5 J	MW1A, MW8D	0.5	0	CA Primary MCL for 1,3-dichloropropene
Dibromochloromethane	5	0.50 to 20.0	0.5 J to 1.2	OW7	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	3	0.50 to 5000	0.42 J to 0.5 J	MW8C, MW8D	1000	0	CA Department of Health Services State notification
Ethylbenzene	4	0.50 to 20.0	0.5 J to 1.5 J	OW1B	300	0	CA Primary MCL
Isopropylbenzene	4	0.50 to 20.0	0.5 J to 2.3 J	OW1B	770	0	CA Department of Health Services State notification
m,p-Xylenes	4	0.50 to 20.0	0.5 J to 1.1 J	OW1B	1750	0	CA Primary MCL
Methyl cyclohexane	4	0.5	0.5 J to 1.1	MW27B	NE	0	
Methyl isobutyl ketone	3	5	5 J	MW1A, MW8D	120	0	CA Department of Health Services State notification
Methyl tert-butyl ether	5	0.50 to 20.0	0.28 J to 1.1	MW30	13	0	CA Primary MCL

Appendix E2
Summary of Detections - First Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
Methylene chloride	4	0.50 to 5000	0.5 J to 1200	OW8A	5	2	CA/USEPA Primary MCL
Naphthalene	NA	1.00 to 20.0	ND	NE	17	0	CA Department of Health Services State notification
N-butylbenzene	NA	1.00 to 20.0	ND	NE	260	0	CA Department of Health Services State notification
n-Propylbenzene	NA	1.00 to 20.0	ND	NE	260	0	CA Department of Health Services State notification
o-Xylene	4	0.50 to 20.0	0.5 J to 1.2 J	OW1B	1750	0	CA Primary MCL
p-Isopropyltoluene	NA	1.00 to 20.0	ND	NE	NE	0	
sec-Butylbenzene	NA	1.00 to 20.0	ND	NE	260	0	CA Department of Health Services State notification
Styrene	3	0.50 to 20.0	0.5 J	MW1A, MW8D	100	0	CA/USEPA Primary MCL
t-Butylbenzene	NA	1.00 to 20.0	ND	NE	260	0	CA Department of Health Services State notification
Tetrachloroethene	61	0.5	0.21 J to 150000	OW1A	5	45	CA/USEPA Primary MCL
Toluene	5	0.50 to 20.0	0.5 J to 38 J	OW1B	150	0	CA Primary MCL
trans-1,2-Dichloroethene	12	0.50 to 20.0	0.2 J to 49 J	OW8A	10	1	CA Primary MCL
trans-1,3-Dichloropropene	3	0.50 to 500	0.5 J	MW1A, MW8D	0.5	0	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	57	0.50 to 1.00	0.33 J to 11000 J	OW1B	5	41	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	40	0.50 to 1000	0.5 J to 280	OW9	150	3	CA Primary MCL
Vinyl chloride	3	0.50 to 500	0.5 J to 0.9	MW27A	0.5	1	CA Primary MCL

Notes:
J = Estimated value
ug/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

First Quarter 2009 QC Sample Results
Omega Chemical Corporation Superfund Site

Analyte	Concentration [µg/L]	Qualifier	Method Detection Limit [µg/L]	Report Detection Limit [µg/L]
Trip Blanks				
Y4N63 3/3/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Chloroform	0.4	J	0.12	0.5
Y4N67 3/4/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Chloroform	0.42	J	0.12	0.5
Y4N79 3/5/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Chloroform	0.4	J	0.12	0.5
Y4N84 3/6/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Chloroform	0.41	J	0.12	0.5
Y4N92 3/9/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Y4N97 3/10/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Y4NA3 3/11/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Y4NA8 3/12/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Y4NB7 3/13/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Y4NC7 3/16/2009				
1,2-Dibromo-3-chloropropane	0.05	R	0.0077	0.05
Tetrachloroethene	0.34	J	0.096	0.5

Notes:

J = Estimated value
µg/L = micrograms per Liter

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4N71	Y4N72		
MW15	03/05/09	1,4-Dioxane (p-dioxane)	µg/L	13	13	0	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	170	150 J	13	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	170	170	0	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.43 J	0.49 J	13	A
		1,1-Dichloroethene	µg/L	120 J	140 J	15	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	1.9	1.8	5	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	10 UJ	10 UJ	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	24	23 J	4	A
		Chloroform	µg/L	24	24	0	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	0.86	0.9	5	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4N71	**Y4N72**		
MW15	03/05/09	Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.28 J	0.32 J	13	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	120	120	0	A
		Tetrachloroethene	µg/L	120	260 J	74	D
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.21 J	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	44	62 J	34	A
		Trichloroethene	µg/L	44	44	0	A
		Trichlorofluoromethane (Freon 11)	µg/L	63 J	78	21	A
		Trichlorofluoromethane (Freon 11)	µg/L	77	78	1	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4N98	**Y4N99**		
MW17B	03/11/09	1,4-Dioxane (p-dioxane)	µg/L	32	33	3	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	11	9.5	15	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	16	18	12	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	40	26	42	A
		1,1-Dichloroethene	µg/L	62 J	60 J	3	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	2.5	2.6	4	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4N98	**Y4N99**		
MW17B	03/11/09	Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	7.6	7.2	5	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	40 J	42 J	5	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	130	79	49	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.24 J	0.23 J	4	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	90	54	50	A
		Trichlorofluoromethane (Freon 11)	µg/L	9.8	9.5	3	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4NC4	**Y4NC5**		
MW23C	03/16/09	1,4-Dioxane (p-dioxane)	µg/L	7.1	7.4	4	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	79 J	63	23	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	30	63	71	D
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.32 J	0.29 J	10	A
		1,1-Dichloroethene	µg/L	59 J	56 J	5	A
		1,2,3-Trichlorobenzene	µg/L	0.5 UJ	0.5 UJ	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4NC4	Y4NC5		
MW23C	03/16/09	1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	14	14 J	0	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	2.2 J	2.3 J	4	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 UJ	5 UJ	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	130 J	84	43	A
		Tetrachloroethene	µg/L	74	84	13	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	70	72	3	A
		Trichloroethene	µg/L	92 J	72	24	A
		Trichlorofluoromethane (Freon 11)	µg/L	14	22	44	A
		Trichlorofluoromethane (Freon 11)	µg/L	31 J	22	34	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4NC4	**Y4NC5**		
MW23C	03/16/09	Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4NB2	**Y4NB4**		
MW26D	03/13/09	1,4-Dioxane (p-dioxane)	µg/L	2 U	2.3	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 UJ	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	0.5 U	45	NC	MD
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	0.5 U	7.7 J	NC	MD
		1,2,3-Trichlorobenzene	µg/L	0.5 UJ	0.5 UJ	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 UJ	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	2.5 UJ	NC	MD
		Bromomethane	µg/L	0.5 UJ	0.5 UJ	NC	A
		Carbon disulfide	µg/L	0.5 UJ	0.5 UJ	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 UJ	0.5 UJ	NC	A
		Chloroform	µg/L	0.5 U	0.52	NC	A
		Chloromethane	µg/L	0.5 UJ	0.5 UJ	NC	A
		cis-1,2-Dichloroethene	µg/L	0.5 U	2.4 J	NC	D
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 UJ	0.5 UJ	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4NB2	**Y4NB4**		
MW26D	03/13/09	Methyl ethyl ketone	µg/L	5 UJ	5 UJ	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	0.5 U	44	NC	MD
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	0.5 U	61	NC	MD
		Trichlorofluoromethane (Freon 11)	µg/L	0.5 U	15	NC	MD
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4N85	**Y4N86**		
MW30	03/09/09	1,4-Dioxane (p-dioxane)	µg/L	2 U	2 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 UJ	0.5 UJ	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4N85	**Y4N86**		
MW30	03/09/09	Chloroform	µg/L	0.5 U	0.5 U	NC	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	0.22 J	0.5 U	NC	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	1.1	1.1	0	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	0.5 U	0.5 U	NC	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	0.5 U	0.5 U	NC	A
		Trichlorofluoromethane (Freon 11)	µg/L	0.5 U	0.5 U	NC	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4N60	**Y4N61**		
MW8B	03/03/09	1,4-Dioxane (p-dioxane)	µg/L	2 U	2 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.05 R	0.05 R	0	A
		1,2-Dibromoethane	µg/L	0.05 U	0.05 U	NC	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	0.5 U	0.31 J	NC	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	0.44 J	0.52 J	17	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 J	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 J	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 J	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 J	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 J	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4N60	Y4N61		
MW8B	03/03/09	1,4-Dichlorobenzene	µg/L	0.5 U	0.5 J	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 J	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.5 U	0.5 U	NC	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	0.5 UJ	0.5 UJ	NC	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	1.2 J	1.4 J	15	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 UJ	5 UJ	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	15	33	75	D
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	3.7	4.3	15	A
		Trichlorofluoromethane (Freon 11)	µg/L	0.5 U	0.5 U	NC	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A

Notes

RPD - Relative Percent Difference = { (Primary Sample - Field Duplicate) / (Primary Sample + Field Duplicate) / 2 } x 100
RPD is calculated and shown only when both the primary and Field Duplicate samples are detected above the Reporting Limit

Guidance for Comparing Split Sample Data:

Agreement (A)
Disagreement (D): >3x difference when one result is <RL, >2x difference
Major Disagreement (MD): >5x difference when one result is <RL, >3x difference
.
NC - not calculated
µg/L - micrograms per liter
mg/L - milligrams per liter
U - Not detected at or above the reporting limit.
UJ - Not detected at or above the reporting limit. The reporting limit is an estimate.
J - Estimated value.

Appendix E.3
3Q2009

Appendix E3
Summary of Detections - Third Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
1,1,1-Trichloroethane	6	0.50 to 5.00	0.13 J to 1900	OW1a	200	1	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	NA	0.50 to 5.00	ND	NE	1	0	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	48	0.50 to 5.00	0.15 J to 710	OW9	1200	0	CA/USEPA Primary MCL
1,1,2-Trichloroethane	2	0.50 to 5.00	0.16 J to 13	MW27A	5	1	CA/USEPA Primary MCL
1,1-Dichloroethane	28	0.50 to 5.00	0.12 J to 46 J	OW9	5	7	CA Primary MCL
1,1-Dichloroethene	45	0.50 to 1.00	0.45 J to 1600	OW9	6	35	CA Primary MCL
1,1-Dichloropropene	NA	1.00 to 100	ND	NE	NE	0	
1,2,3-Trichlorobenzene	NA	0.50 to 5.00	ND	NE	NE	0	
1,2,3-Trichloropropane	NA	1.00 to 100	ND	NE	0.005	0	CA Department of Health Services State notification
1,2,4-Trichlorobenzene	NA	0.50 to 5.00	ND	NE	5	0	CA Primary MCL
1,2,4-Trimethylbenzene	NA	1.00 to 100	ND	NE	330	0	CA Department of Health Services State notification
1,2-Dibromo-3-chloropropane	NA	0.50 to 500	ND	NE	0.200000003	0	CA/USEPA Primary MCL
1,2-Dibromoethane	NA	0.50 to 5.00	ND	NE	0.050000001	0	CA/USEPA Primary MCL
1,2-Dichlorobenzene	1	0.50 to 5.00	18	OW1a	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	9	0.50 to 5.00	0.47 J to 250	OW9	0.5	8	CA Primary MCL
1,2-Dichloropropane	2	0.50 to 5.00	0.51 to 5.1	MW20A	5	1	CA/USEPA Primary MCL
1,3,5-Trimethylbenzene	NA	1.00 to 100	ND	NE	330	0	CA Department of Health Services State notification
1,3-Dichlorobenzene	NA	0.50 to 5.00	ND	NE	600	0	CA Department of Health Services State notification
1,4-Dichlorobenzene	NA	0.50 to 5.00	ND	NE	5	0	CA Primary MCL
2,2-Dichloropropane	NA	1.00 to 100	ND	NE	NE	0	
2-Chlorotoluene	NA	1.00 to 100	ND	NE	140	0	CA Department of Health Services State notification
2-Hexanone	NA	10.0 to 50.0	ND	NE	NE	0	
4-Chlorotoluene	NA	1.00 to 100	ND	NE	140	0	CA Department of Health Services State notification
Benzene	2	0.50 to 50.0	0.29 J to 6.2	OW1a	1	1	CA Primary MCL
Bromochloromethane	NA	0.50 to 5.00	ND	NE	NE	0	
Bromodichloromethane	5	0.50 to 5.00	0.12 J to 0.97 J	OW7	80	0	CA/USEPA Primary MCL
Bromoform	1	0.50 to 5.00	0.14 J	MW2	80	0	CA/USEPA Primary MCL
Carbon disulfide	1	0.50 to 5.00	7.3 J	MW1A	160	0	CA Department of Health Services State notification
Carbon tetrachloride	13	0.50 to 50.0	0.11 J to 0.36 J	MW16B	0.5	0	CA Primary MCL
Chlorobenzene	1	0.50 to 5.00	6.8 J	OW1a	70	0	CA Primary MCL
Chloroethane	1	0.50 to 5.00	0.31 J	MW12	16	0	Other taste and Odor
Chloroform	46	0.50 to 2.00	0.24 J to 1100	OW9	80	3	CA/USEPA Primary MCL
cis-1,2-Dichloroethene	40	0.50 to 5.00	0.16 J to 110	MW12	6	16	CA Primary MCL
cis-1,3-Dichloropropene	NA	0.50 to 50.0	ND	NE	0.5	0	CA Primary MCL for 1,3-dichloropropene
Dibromochloromethane	2	0.50 to 5.00	0.12 J to 0.96 J	OW7	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	9	0.50 to 500	0.11 J to 0.9 J	MW23C	1000	0	CA Department of Health Services State notification
Ethylbenzene	NA	0.50 to 5.00	ND	NE	300	0	CA Primary MCL
Isopropylbenzene	NA	0.50 to 5.00	ND	NE	770	0	CA Department of Health Services State notification
m,p-Xylenes	NA	0.50 to 5.00	ND	NE	1750	0	CA Primary MCL
Methyl cyclohexane	1	0.50 to 5.00	13	MW27A	NE	0	
Methyl isobutyl ketone	NA	10.0 to 50.0	ND	NE	120	0	CA Department of Health Services State notification

Appendix E3
Summary of Detections - Third Quarter 2009
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits of NonDetects (µg/L)	Range of Detected Concentrations	Location of Maximum Detect	Screening Level (µg/L)	Number of Locations > Screening Level	Screening Level Source
Methyl tert-butyl ether	22	0.50 to 5.00	0.12 J to 2.3 J	MW23C	13	0	CA Primary MCL
Methylene chloride	2	0.50 to 500	0.58 J to 33 J	OW1a	5	1	CA/USEPA Primary MCL
Naphthalene	NA	1.00 to 100	ND	NE	17	0	CA Department of Health Services State notification
N-butylbenzene	NA	1.00 to 100	ND	NE	260	0	CA Department of Health Services State notification
n-Propylbenzene	NA	1.00 to 100	ND	NE	260	0	CA Department of Health Services State notification
o-Xylene	NA	0.50 to 5.00	ND	NE	1750	0	CA Primary MCL
p-Isopropyltoluene	NA	1.00 to 100	ND	NE	NE	0	
sec-Butylbenzene	NA	1.00 to 100	ND	NE	260	0	CA Department of Health Services State notification
Styrene	NA	0.50 to 5.00	ND	NE	100	0	CA/USEPA Primary MCL
t-Butylbenzene	NA	1.00 to 100	ND	NE	260	0	CA Department of Health Services State notification
Tetrachloroethene	61	0.5	0.23 J to 240000	OW1a	5	45	CA/USEPA Primary MCL
Toluene	2	0.50 to 5.00	2.3 J to 9.4 J	OW1a	150	0	CA Primary MCL
trans-1,2-Dichloroethene	19	0.50 to 5.00	0.11 J to 11	OW1a	10	1	CA Primary MCL
trans-1,3-Dichloropropene	NA	0.50 to 50.0	ND	NE	0.5	0	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	61	0.50 to 1.00	0.11 J to 2300	OW1a	5	40	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	40	0.50 to 5.00	0.1 J to 260	OW9	150	2	CA Primary MCL
Vinyl chloride	3	0.50 to 50.0	0.15 J to 2.8	MW27A	0.5	1	CA Primary MCL

Notes:
J = Estimated value
µg/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

Third Quarter 2009 QC Sample Results
Omega Chemical Corporation Superfund Site

Analyte	Concentration [µg/L]	Qualifier	Method Detection Limit [µg/L]	Report Detection Limit [µg/L]
Ambient Blanks				
Y4ZA9 9/1/2009				
Methylene chloride	0.46	J	0.0249	0.5
Y4ZC5 9/3/2009				
Chloromethane	0.13	J	0.0582	0.5
Toluene	0.23	J	0.0748	0.5
Y4ZD3 9/4/2009				
Toluene	0.24	J	0.0748	0.5
1,4-Dioxane (p-dioxane)	0.23	J		0.002
Y4ZE0 9/8/2009				
1,4-Dioxane (p-dioxane)	0.24	J		0.002
Y4ZF0 9/9/2009				
m,p-Xylenes	0.18	J	0.0934	0.5
o-Xylene	0.18	J	0.0819	0.5
Toluene	0.23	J	0.0748	0.5
Y4ZG1 9/11/2009				
Acetone	5.1	J	2.22	5
1,4-Dioxane (p-dioxane)	3.1			2
Y4ZH0 9/14/2009				
Toluene	0.23	J	0.0748	0.5

Notes:

J = Estimated value
µg/L = micrograms per Liter

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4ZC9	Y4ZD0		
MW15	09/04/09	1,4-Dioxane (p-dioxane)	µg/L	10	11	10	A
		1,1,1-Trichloroethane	µg/L	2 U	2 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	2 U	2 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	300	270	11	A
		1,1,2-Trichloroethane	µg/L	2 U	2 U	NC	A
		1,1-Dichloroethane	µg/L	0.84 J	0.84 J	0	A
		1,1-Dichloroethene	µg/L	280	250	11	A
		1,2,3-Trichlorobenzene	µg/L	2 U	2 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	2 U	2 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	2 U	2 U	NC	A
		1,2-Dibromoethane	µg/L	2 U	2 U	NC	A
		1,2-Dichlorobenzene	µg/L	2 U	2 U	NC	A
		1,2-Dichloroethane	µg/L	2 U	2 U	NC	A
		1,2-Dichloropropane	µg/L	2 U	2 U	NC	A
		1,3-Dichlorobenzene	µg/L	2 U	2 U	NC	A
		1,4-Dichlorobenzene	µg/L	2 U	2 U	NC	A
		2-Hexanone	µg/L	20 U	20 U	NC	A
		Acetone	µg/L	20 U	20 U	NC	A
		Benzene	µg/L	2 U	2 U	NC	A
		Bromochloromethane	µg/L	2 U	2 U	NC	A
		Bromodichloromethane	µg/L	2 U	2 U	NC	A
		Bromoform	µg/L	2 U	2 U	NC	A
		Bromomethane	µg/L	2 U	2 U	NC	A
		Carbon disulfide	µg/L	2 U	2 U	NC	A
		Carbon tetrachloride	µg/L	2 U	2 U	NC	A
		Chlorobenzene	µg/L	2 U	2 U	NC	A
		Chloroethane	µg/L	2 U	2 U	NC	A
		Chloroform	µg/L	36	37	3	A
		Chloromethane	µg/L	2 U	2 U	NC	A
		cis-1,2-Dichloroethene	µg/L	0.86 J	0.89 J	3	A
		cis-1,3-Dichloropropene	µg/L	2 U	2 U	NC	A
		Cyclohexane	µg/L	2 U	2 U	NC	A
		Dibromochloromethane	µg/L	2 U	2 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.7 J	0.68 J	3	A
		Ethylbenzene	µg/L	2 U	2 U	NC	A
		Isopropylbenzene	µg/L	2 U	2 U	NC	A
		m,p-Xylenes	µg/L	2 U	2 U	NC	A
		Methyl acetate	µg/L	2 U	2 U	NC	A
		Methyl cyclohexane	µg/L	2 U	2 U	NC	A
		Methyl ethyl ketone	µg/L	20 U	20 U	NC	A
		Methyl isobutyl ketone	µg/L	20 U	20 U	NC	A
		Methyl tert-butyl ether	µg/L	0.59 J	0.58 J	2	A
		Methylene chloride	µg/L	2 U	2 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4ZC9	**Y4ZD0**		
MW15	09/04/09	o-Xylene	µg/L	2 U	2 U	NC	A
		Styrene	µg/L	2 U	2 U	NC	A
		Tetrachloroethene	µg/L	320	280	13	A
		Toluene	µg/L	2 U	2 U	NC	A
		trans-1,2-Dichloroethene	µg/L	2 U	2 U	NC	A
		trans-1,3-Dichloropropene	µg/L	2 U	2 U	NC	A
		Trichloroethene	µg/L	60	60	0	A
		Trichlorofluoromethane (Freon 11)	µg/L	130	120	8	A
		Vinyl chloride	µg/L	2 U	2 U	NC	A
				Y4ZB7	**Y4ZB8**		
MW23D	09/03/09	1,4-Dioxane (p-dioxane)	µg/L	0.39 J	0.43 J	10	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	20	22	10	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethene	µg/L	6.7 J	6.1	9	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	14	13	7	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A
		Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.24 J	0.23 J	4	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	0.93	0.81	14	A
		Chloromethane	µg/L	0.5 U	0.12 UJ	NC	MD
		cis-1,2-Dichloroethene	µg/L	1.3 J	1.1	17	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4ZB7	**Y4ZB8**		
MW23D	09/03/09	Dichlorodifluoromethane (Freon 12)	µg/L	0.5 U	0.5 U	NC	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.5 U	0.5 U	NC	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	18	18	0	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	91	95	4	A
		Trichlorofluoromethane (Freon 11)	µg/L	9	8	12	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A
				Y4ZF2	**Y4ZF3**		
MW26B	09/11/09	1,4-Dioxane (p-dioxane)	µg/L	2.4	2.3	4	A
		1,1,1-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2,2-Tetrachloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	µg/L	69	73	6	A
		1,1,2-Trichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,1-Dichloroethane	µg/L	0.55	0.54	2	A
		1,1-Dichloroethene	µg/L	30 J	29 J	3	A
		1,2,3-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2,4-Trichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromo-3-chloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dibromoethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloroethane	µg/L	0.5 U	0.5 U	NC	A
		1,2-Dichloropropane	µg/L	0.5 U	0.5 U	NC	A
		1,3-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		1,4-Dichlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		2-Hexanone	µg/L	5 U	5 U	NC	A
		Acetone	µg/L	5 U	5 U	NC	A
		Benzene	µg/L	0.5 U	0.5 U	NC	A
		Bromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromodichloromethane	µg/L	0.5 U	0.5 U	NC	A
		Bromoform	µg/L	0.5 U	0.5 U	NC	A
		Bromomethane	µg/L	0.5 U	0.5 U	NC	A

Location ID	Sample Date	Analyte Name	Units	Primary Sample	Field Duplicate	RPD	Agreement
				Y4ZF2	Y4ZF3		
MW26B	09/11/09	Carbon disulfide	µg/L	0.5 U	0.5 U	NC	A
		Carbon tetrachloride	µg/L	0.2 J	0.2 J	0	A
		Chlorobenzene	µg/L	0.5 U	0.5 U	NC	A
		Chloroethane	µg/L	0.5 U	0.5 U	NC	A
		Chloroform	µg/L	2	2	0	A
		Chloromethane	µg/L	0.5 U	0.5 U	NC	A
		cis-1,2-Dichloroethene	µg/L	4.4 J	4.2 J	5	A
		cis-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Dibromochloromethane	µg/L	0.5 U	0.5 U	NC	A
		Dichlorodifluoromethane (Freon 12)	µg/L	0.18 J	0.18 J	0	A
		Ethylbenzene	µg/L	0.5 U	0.5 U	NC	A
		Isopropylbenzene	µg/L	0.5 U	0.5 U	NC	A
		m,p-Xylenes	µg/L	0.5 U	0.5 U	NC	A
		Methyl acetate	µg/L	0.5 U	0.5 U	NC	A
		Methyl cyclohexane	µg/L	0.5 U	0.5 U	NC	A
		Methyl ethyl ketone	µg/L	5 U	5 U	NC	A
		Methyl isobutyl ketone	µg/L	5 U	5 U	NC	A
		Methyl tert-butyl ether	µg/L	0.42 J	0.45 J	7	A
		Methylene chloride	µg/L	0.5 U	0.5 U	NC	A
		o-Xylene	µg/L	0.5 U	0.5 U	NC	A
		Styrene	µg/L	0.5 U	0.5 U	NC	A
		Tetrachloroethene	µg/L	95	95	0	A
		Toluene	µg/L	0.5 U	0.5 U	NC	A
		trans-1,2-Dichloroethene	µg/L	0.12 J	0.11 J	9	A
		trans-1,3-Dichloropropene	µg/L	0.5 U	0.5 U	NC	A
		Trichloroethene	µg/L	110	110	0	A
		Trichlorofluoromethane (Freon 11)	µg/L	31	33	6	A
		Vinyl chloride	µg/L	0.5 U	0.5 U	NC	A

Notes

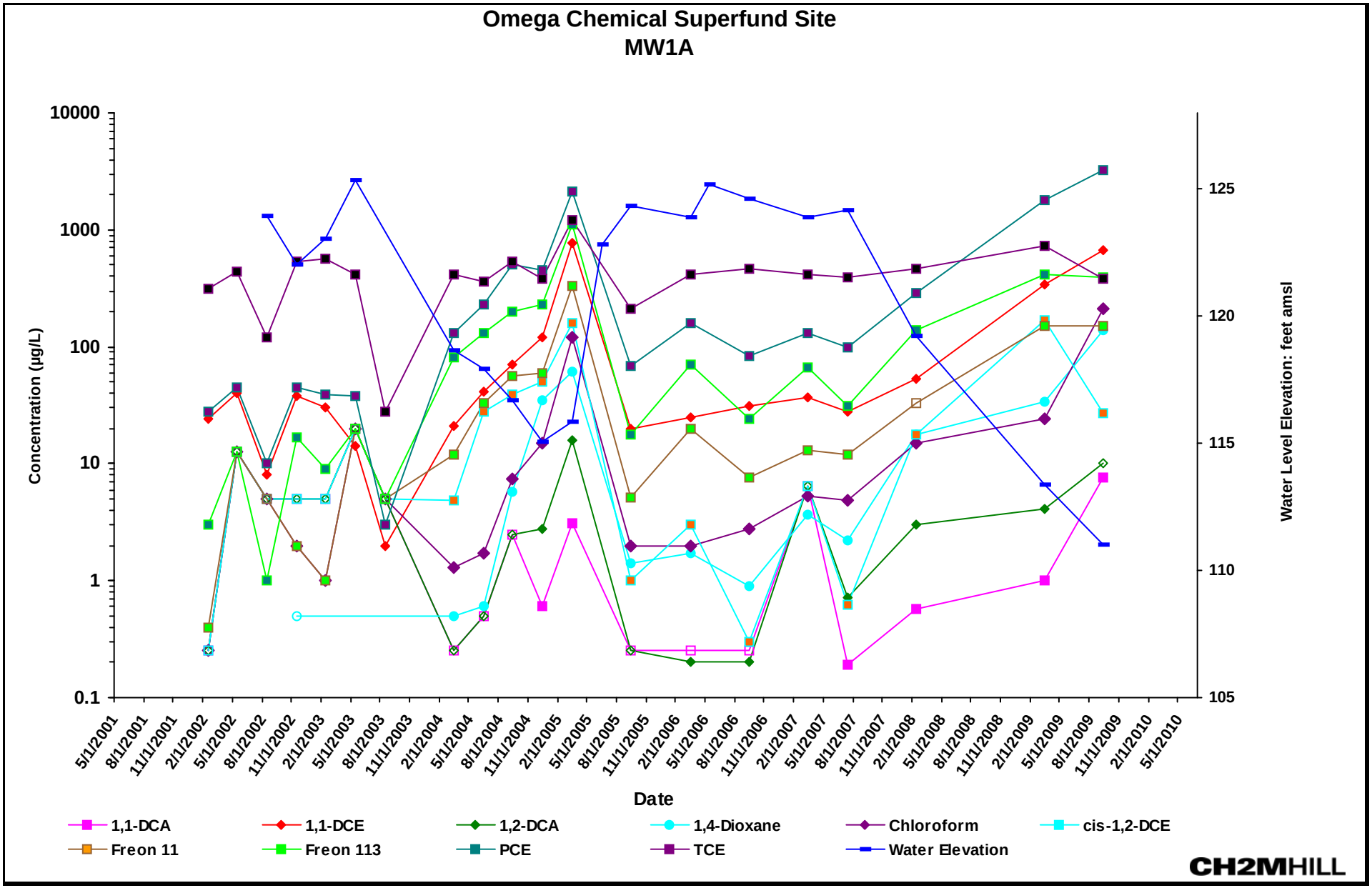
RPD - Relative Percent Difference = { (Primary Sample - Field Duplicate) / (Primary Sample + Field Duplicate) / 2 } x 100
RPD is calculated and shown only when both the primary and Field Duplicate samples are detected above the Reporting Limit

Guidance for Comparing Split Sample Data:

Agreement (A)
Disagreement (D): >3x difference when one result is <RL, >2x difference
Major Disagreement (MD): >5x difference when one result is <RL, >3x difference
.
NC - not calculated
µg/L - micrograms per liter
mg/L - milligrams per liter
U - Not detected at or above the reporting limit.
UJ - Not detected at or above the reporting limit. The reporting limit is an estimate.
J - Estimated value.

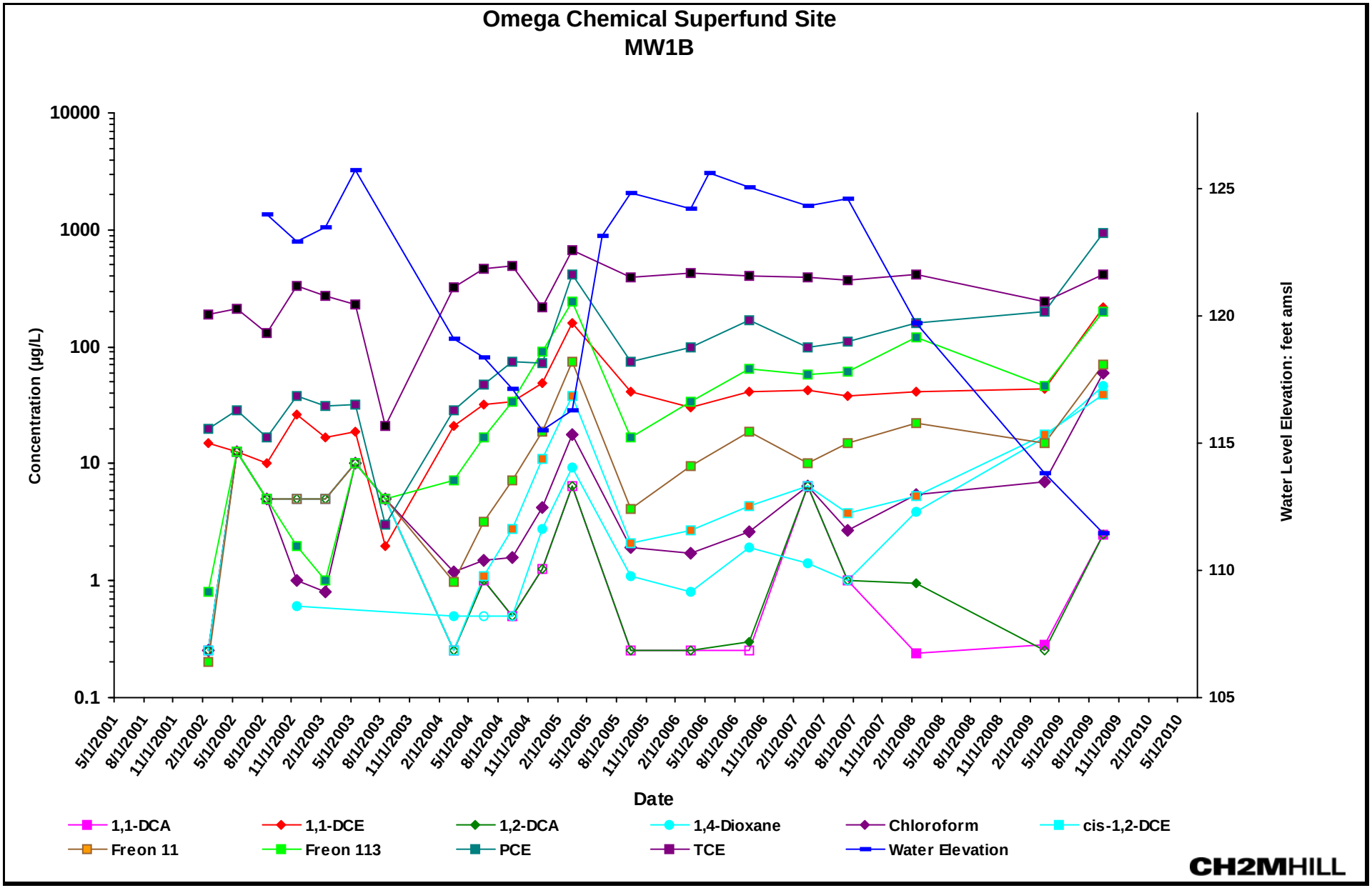
Appendix F
OU1 and OU2 Lab Reports
(on CD only)

Appendix G
VOC Time Series Plots



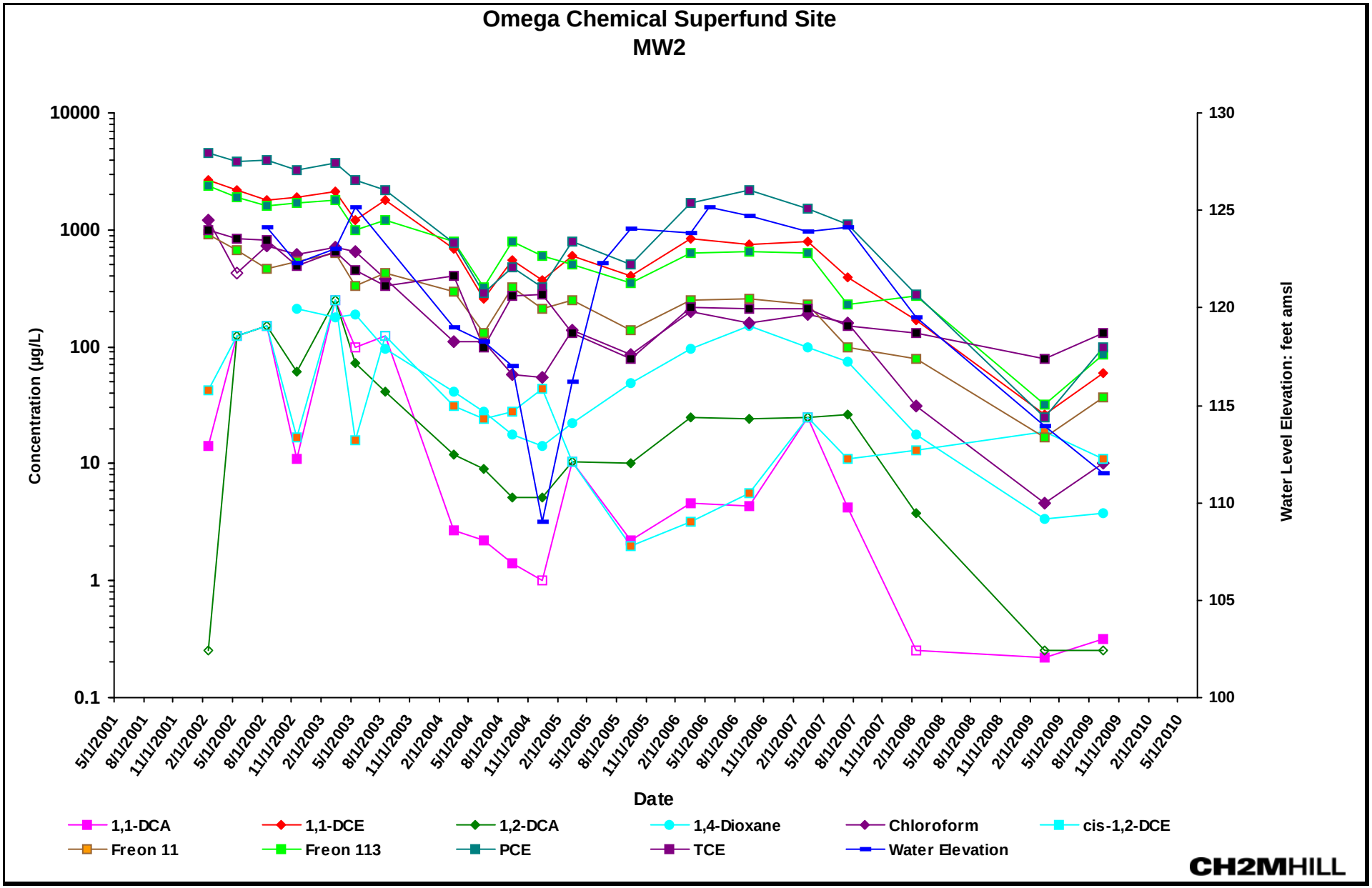
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



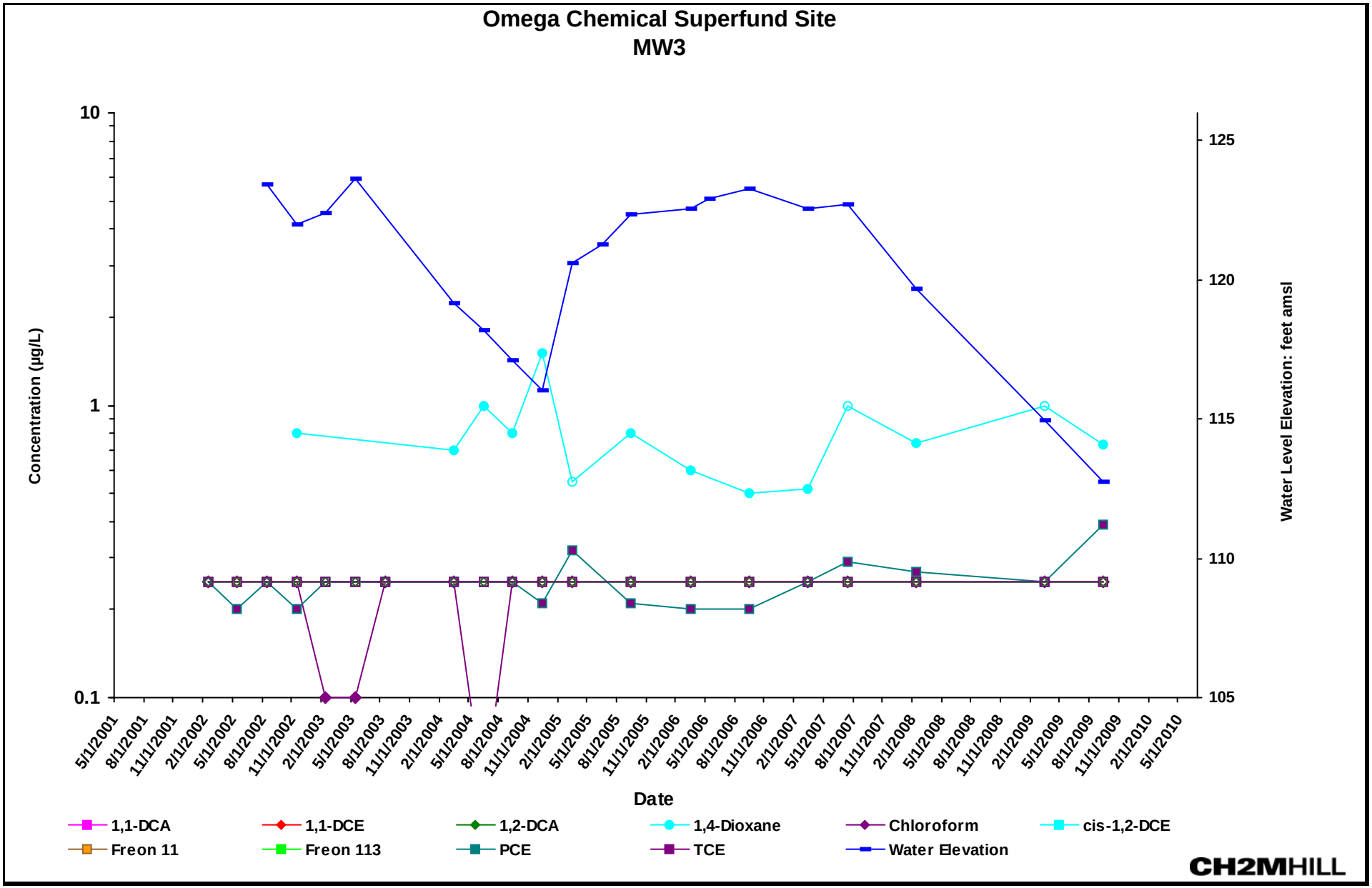
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

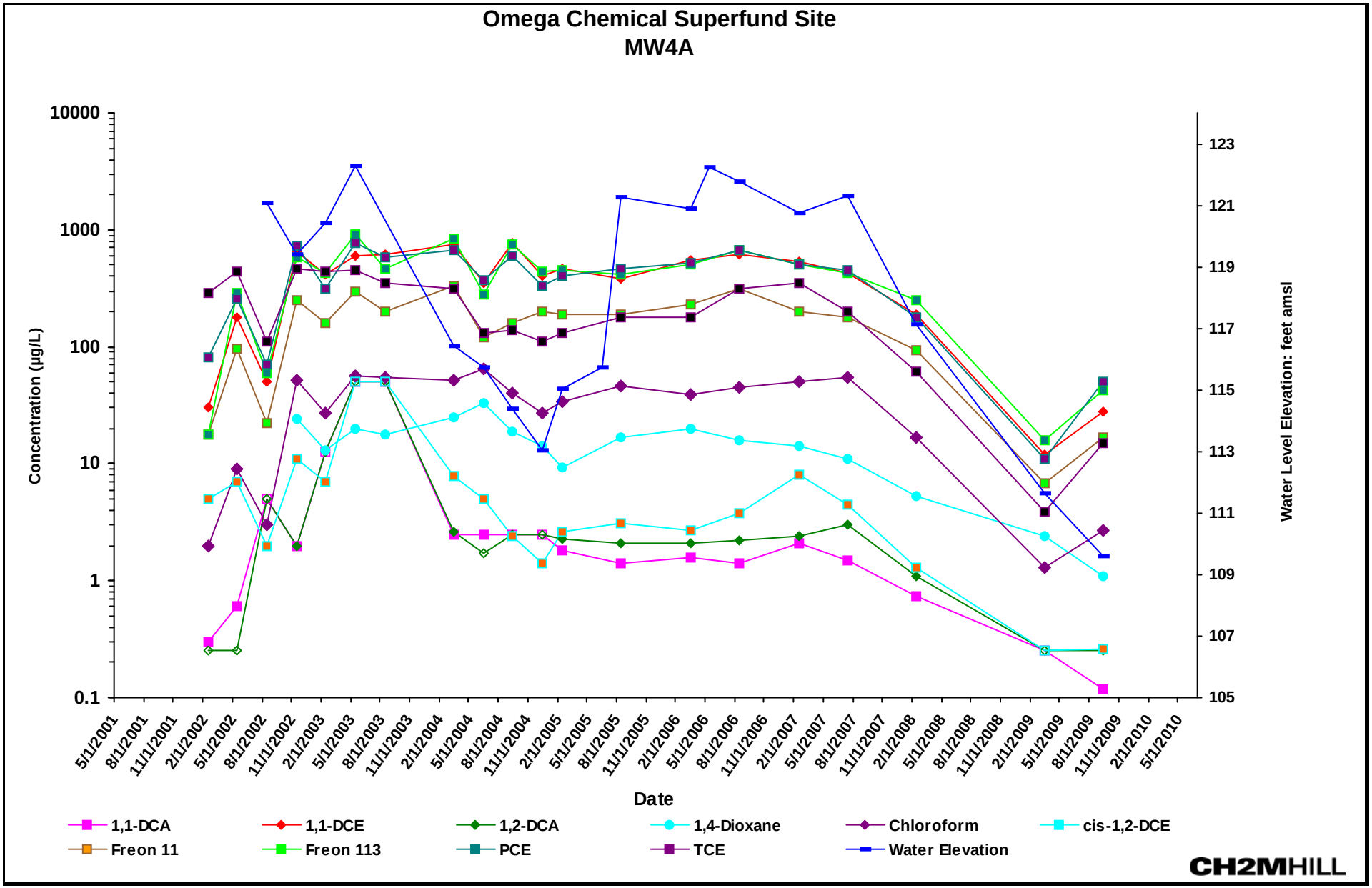


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

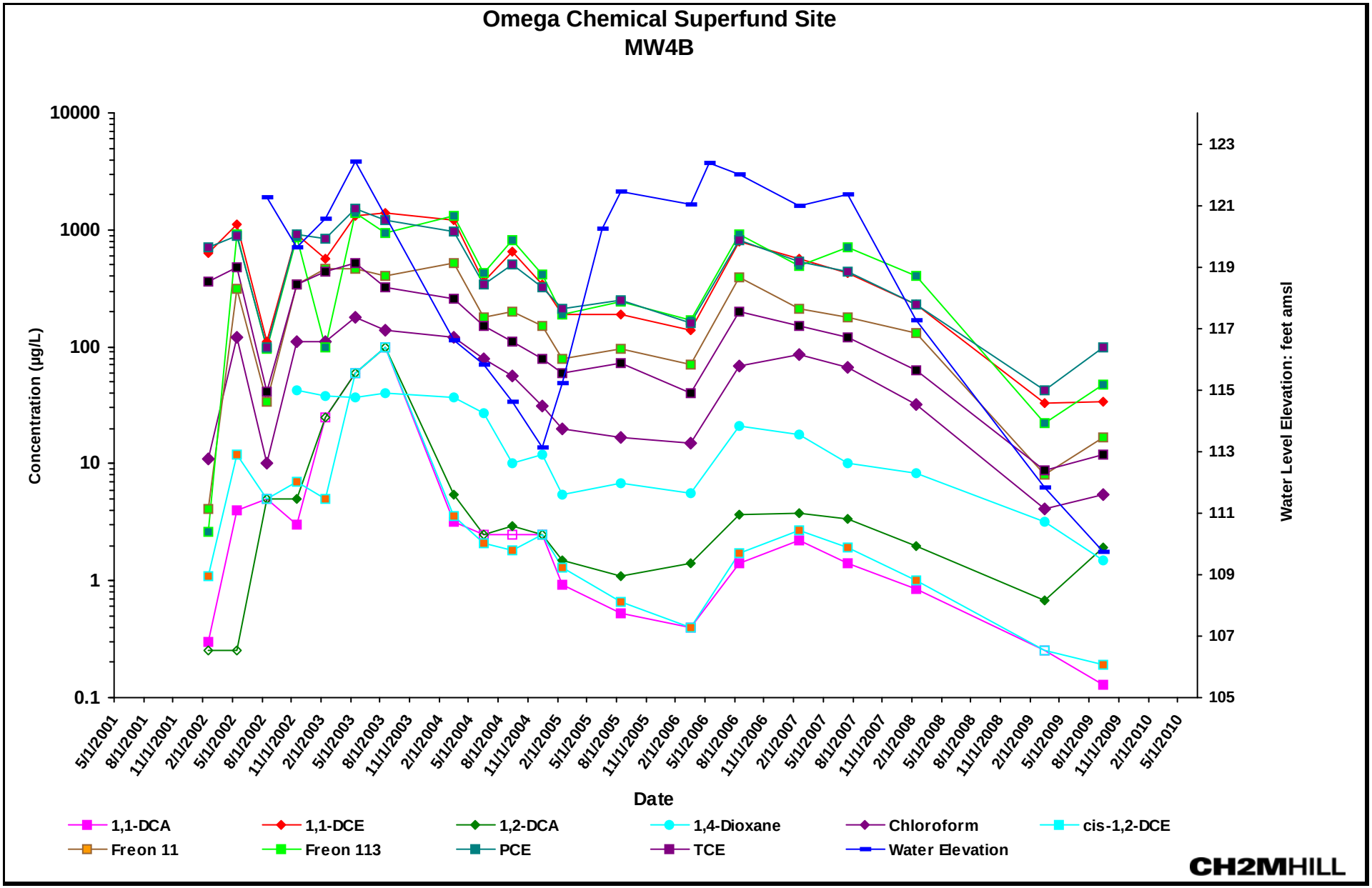


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



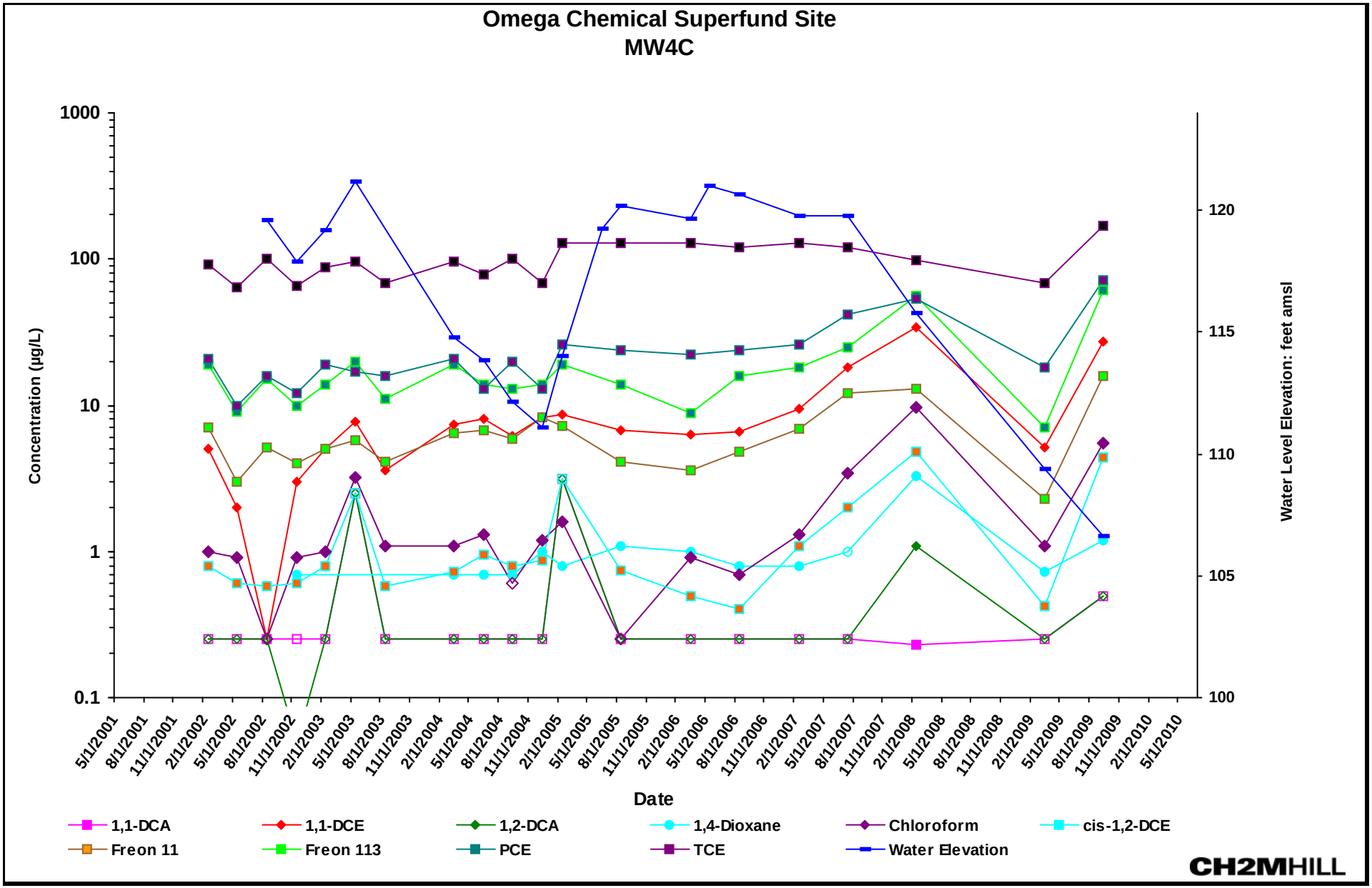
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



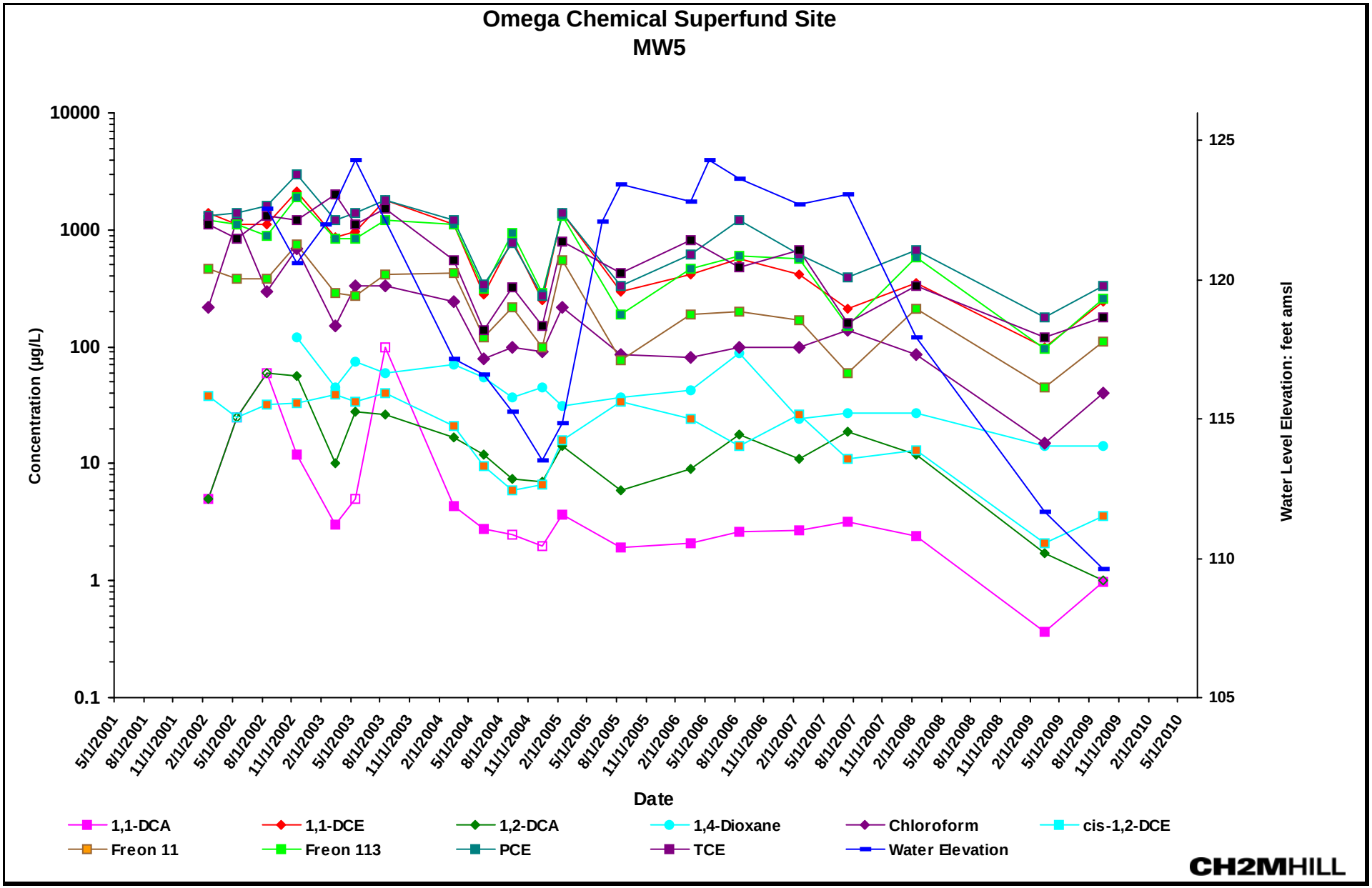
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



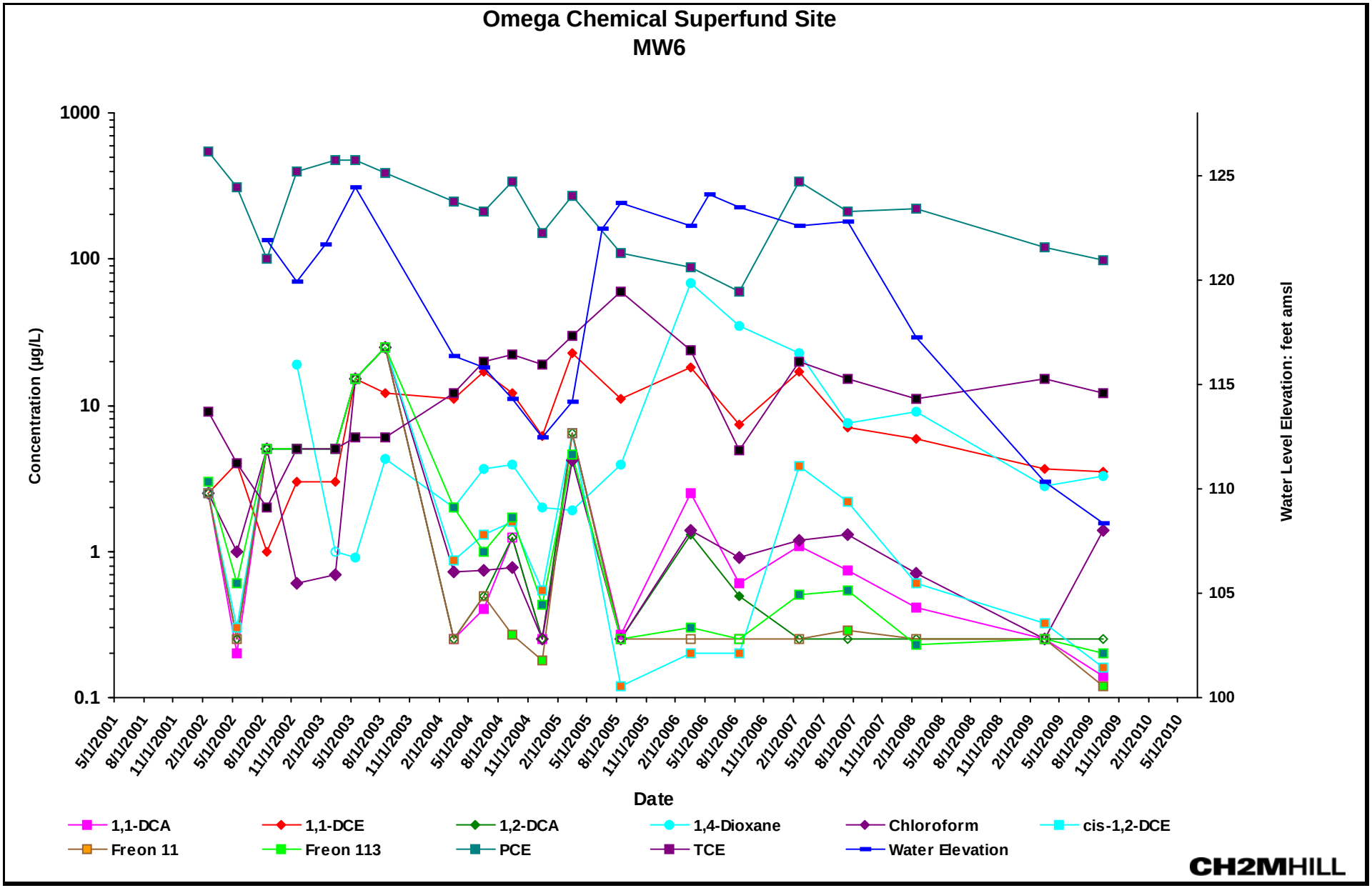
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

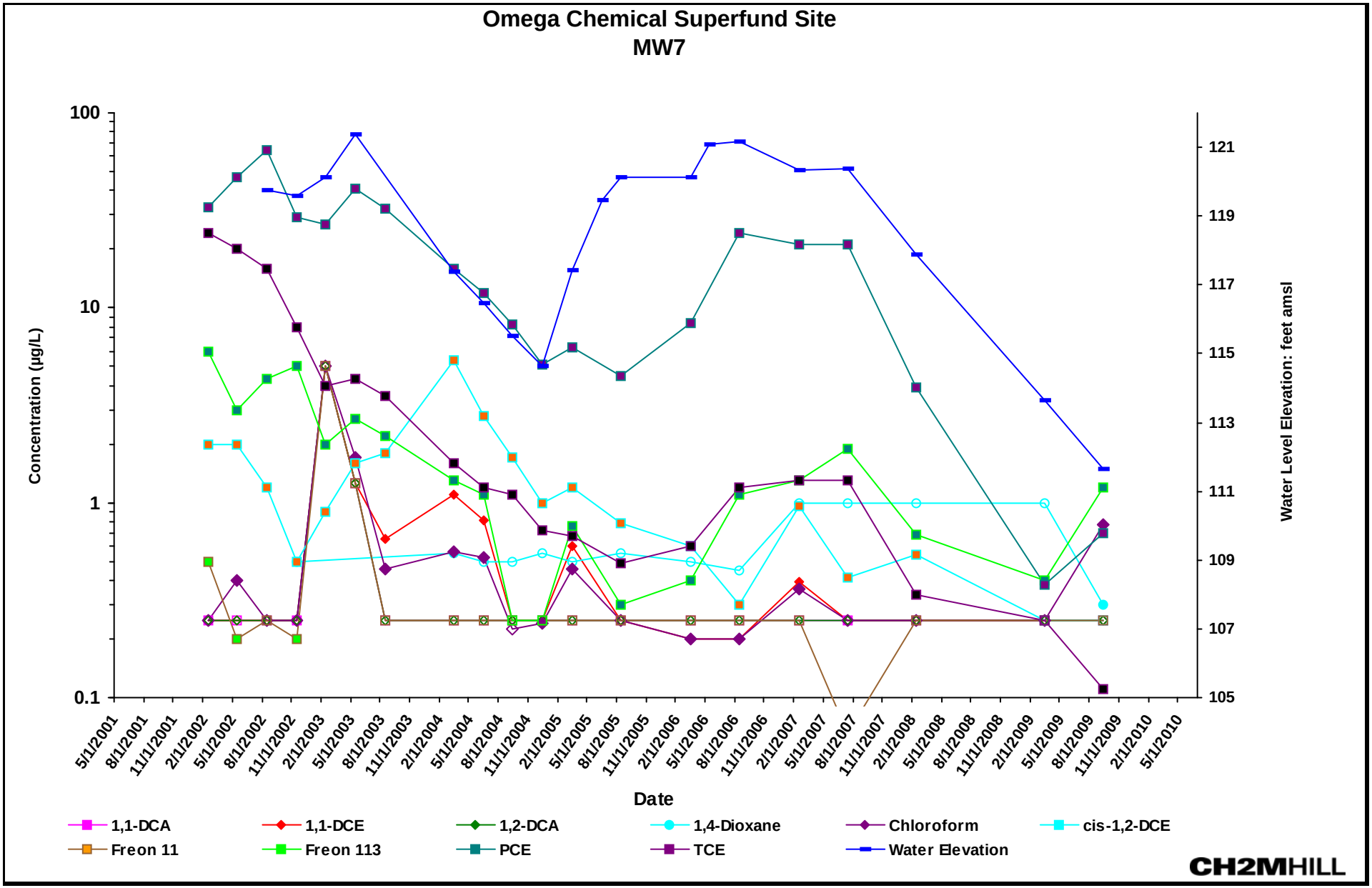


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

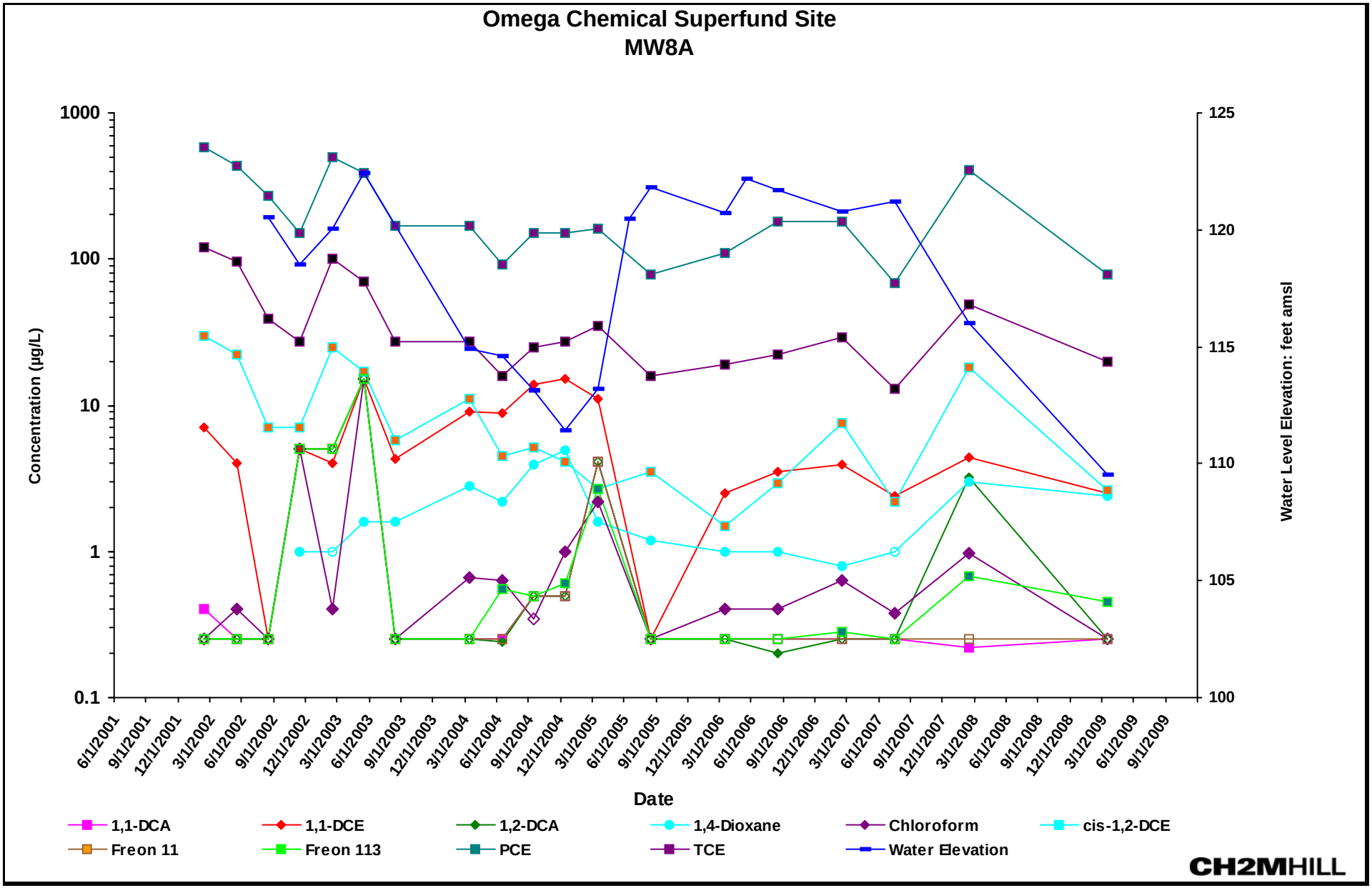


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



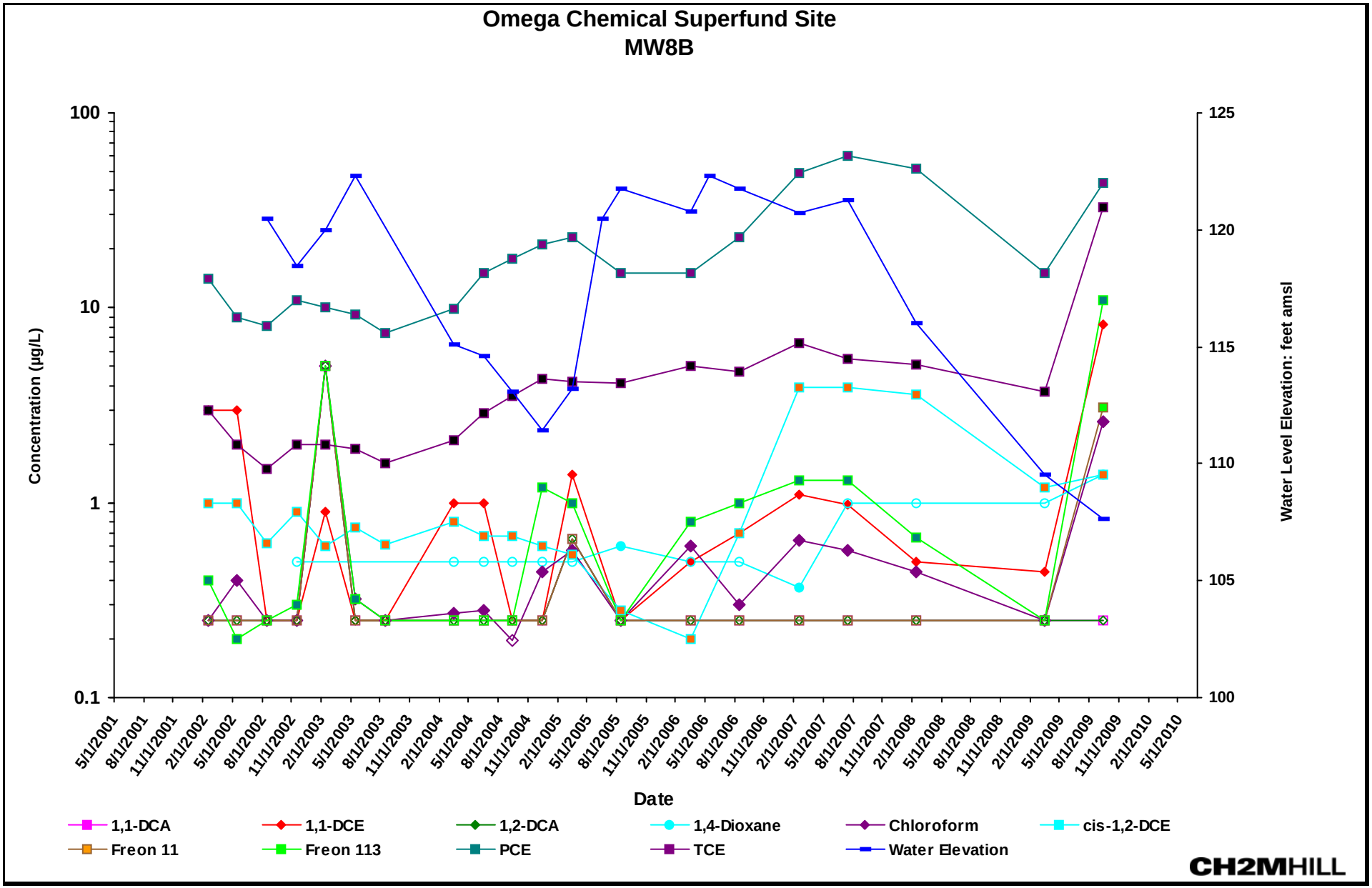
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



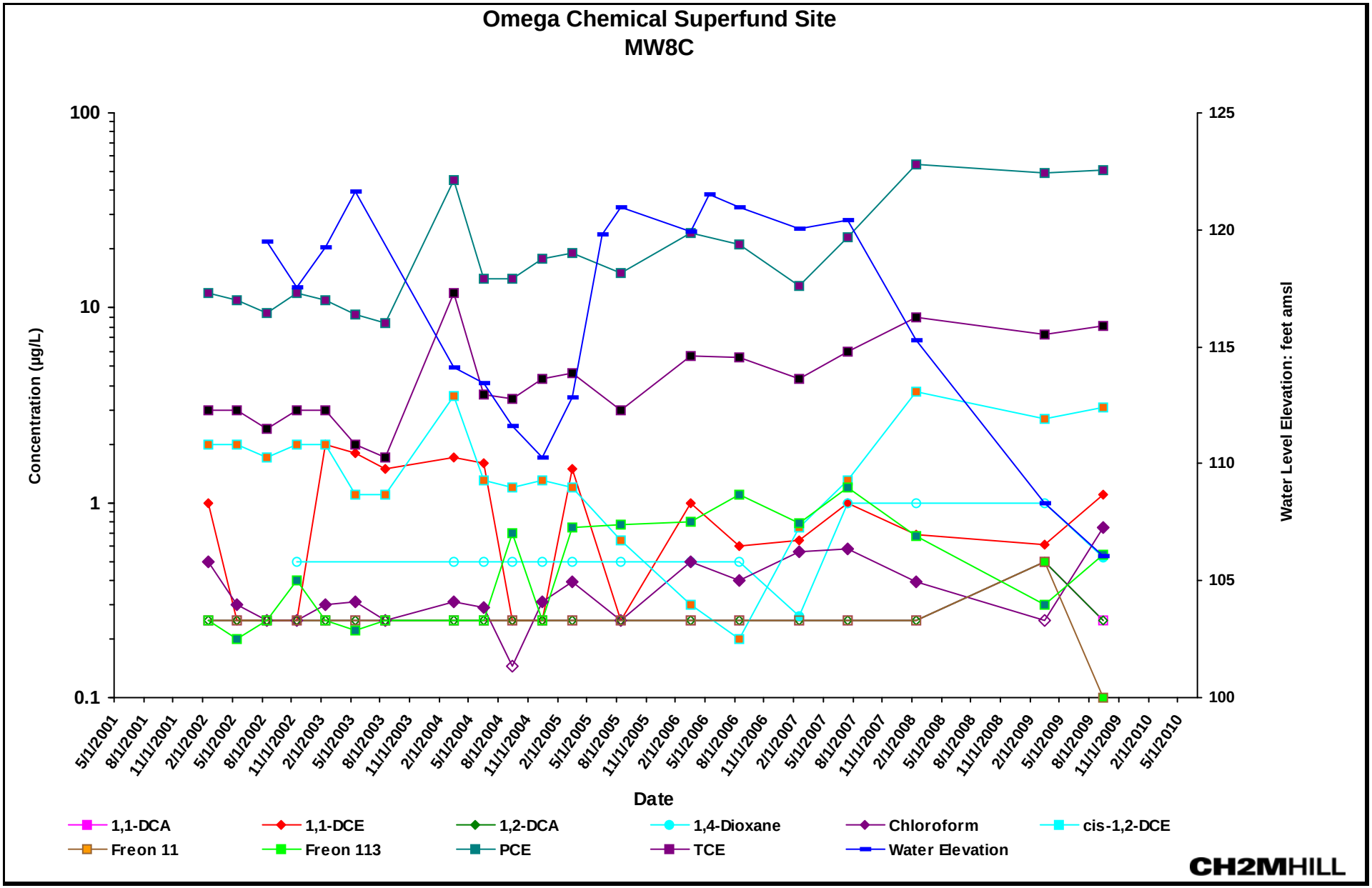
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



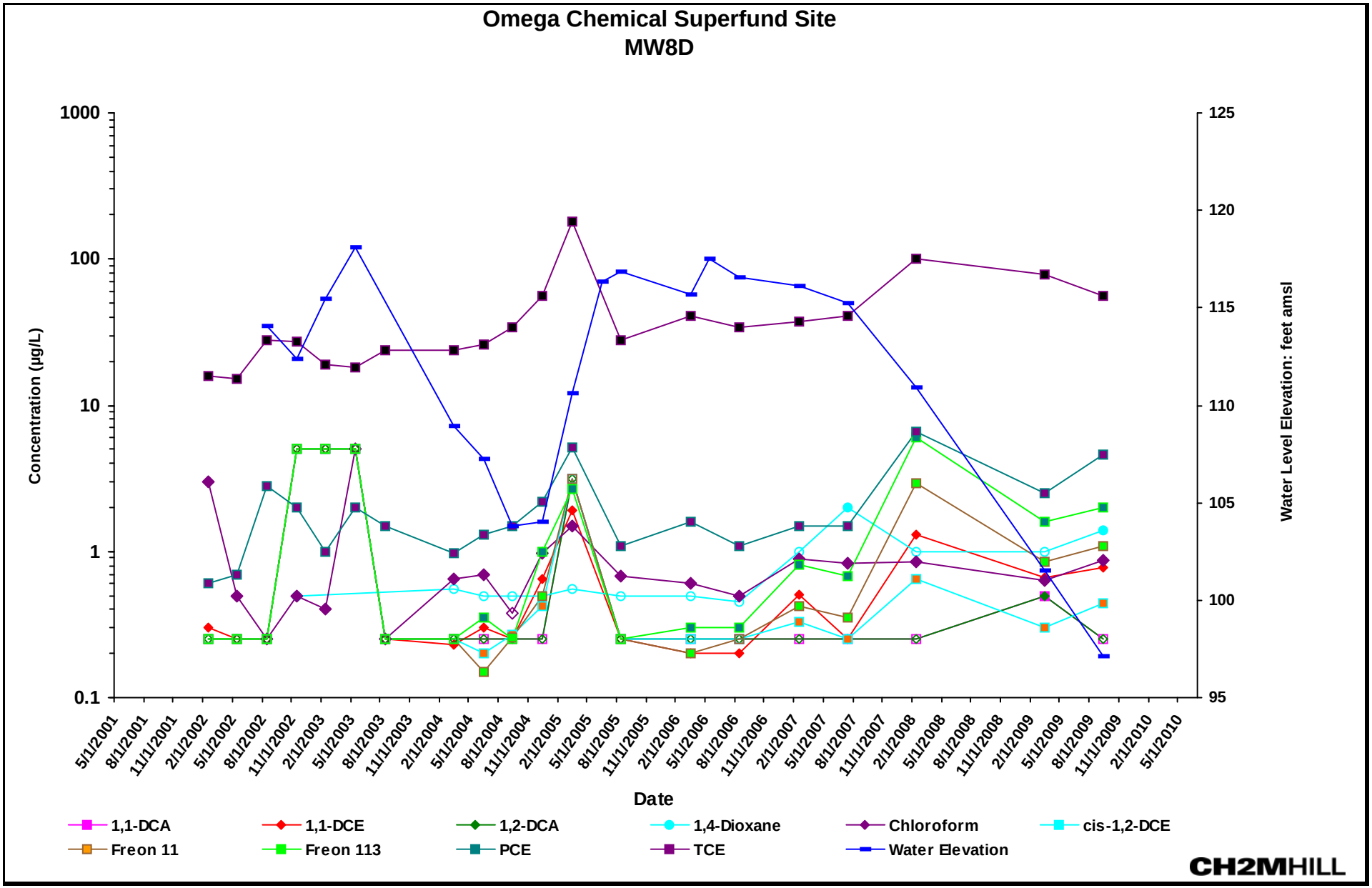
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



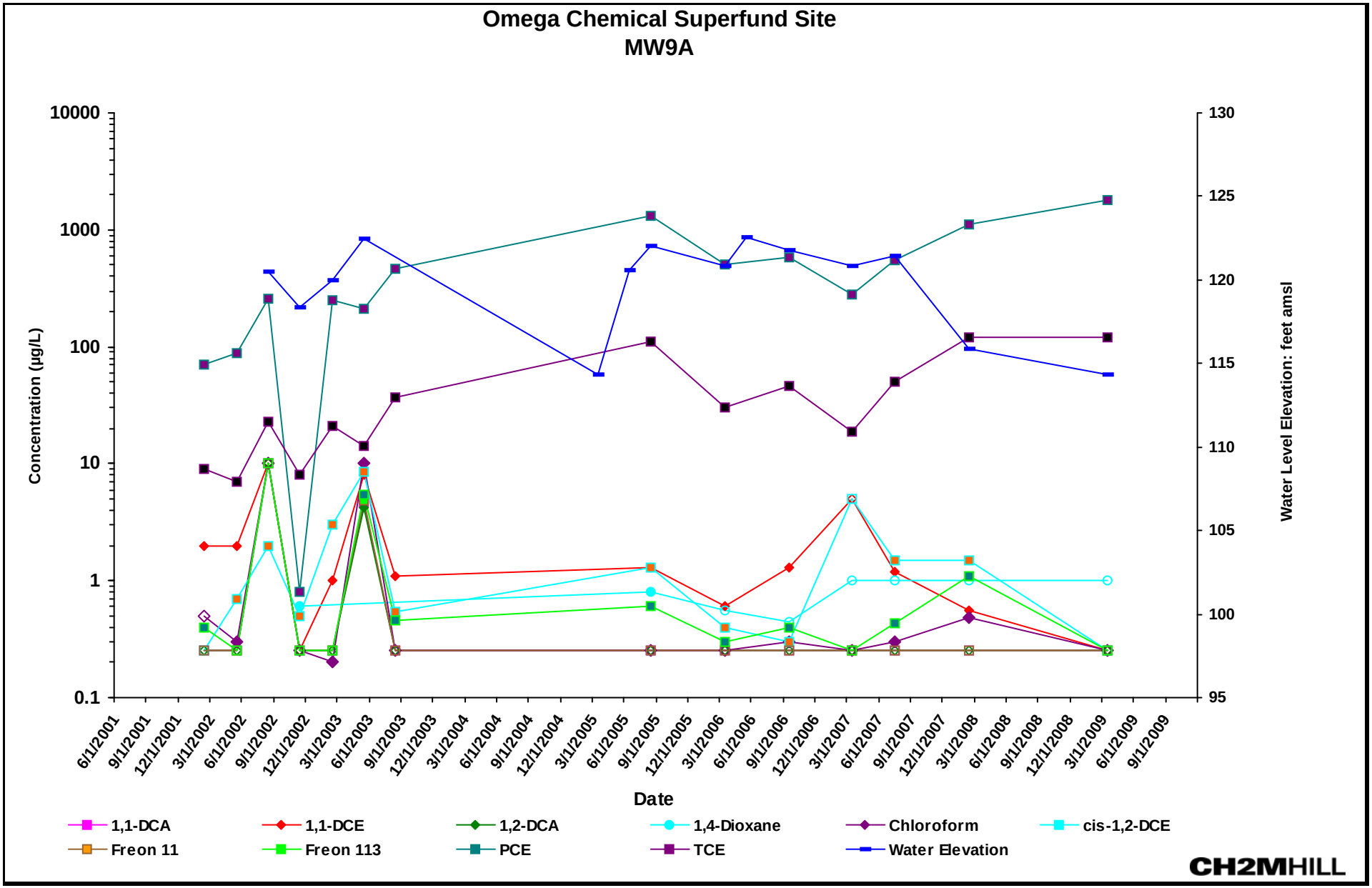
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

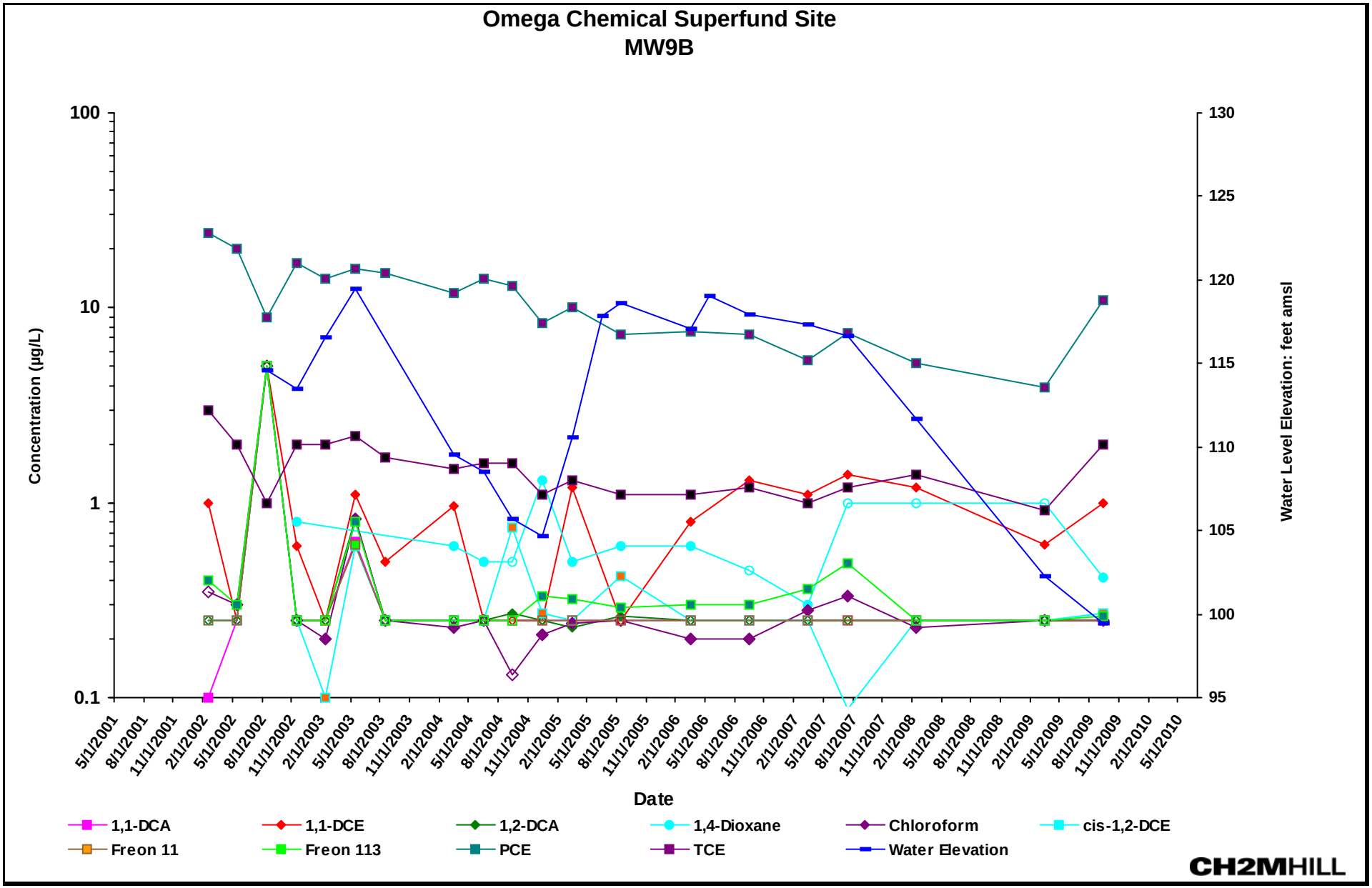


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

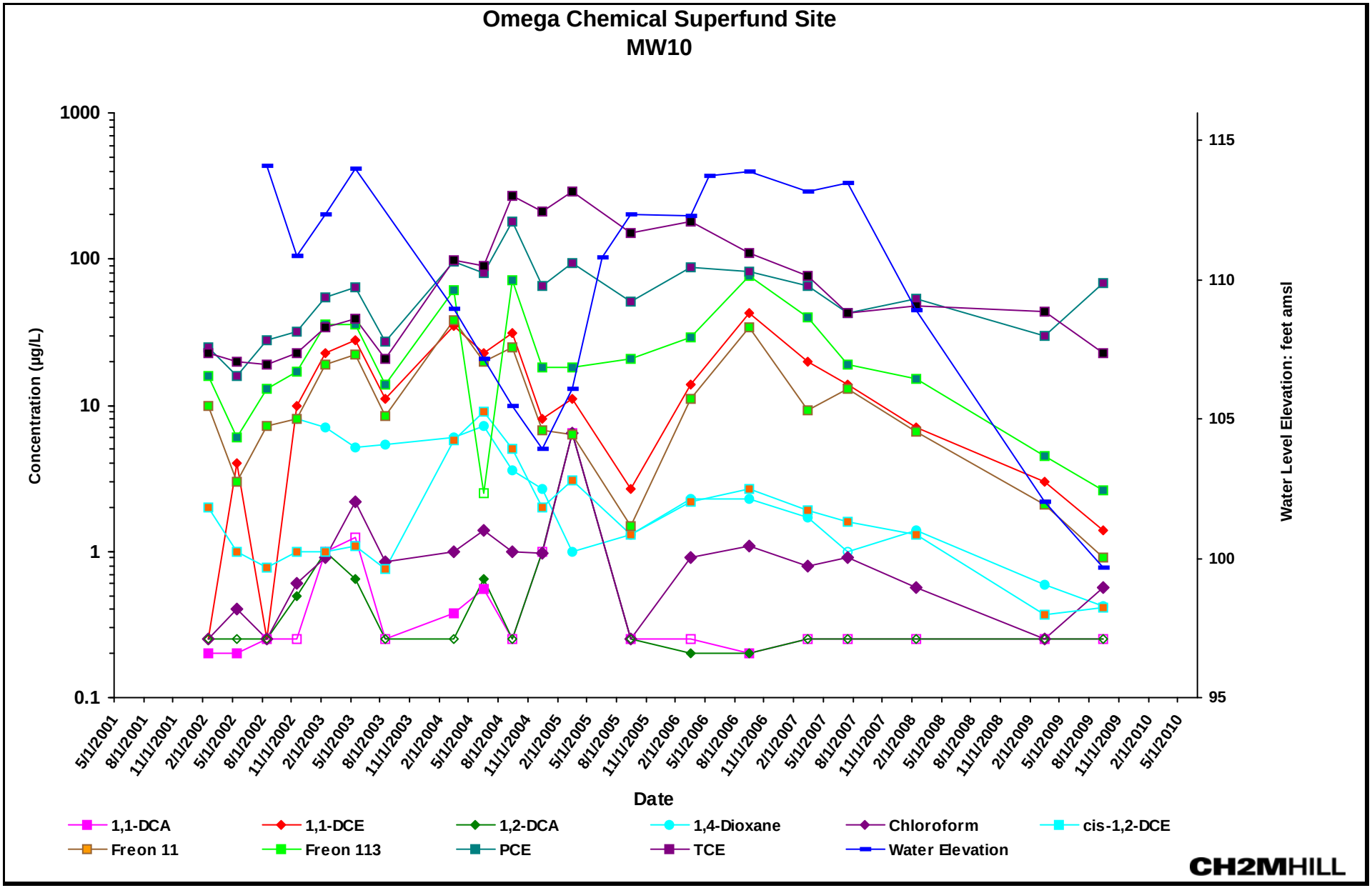


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
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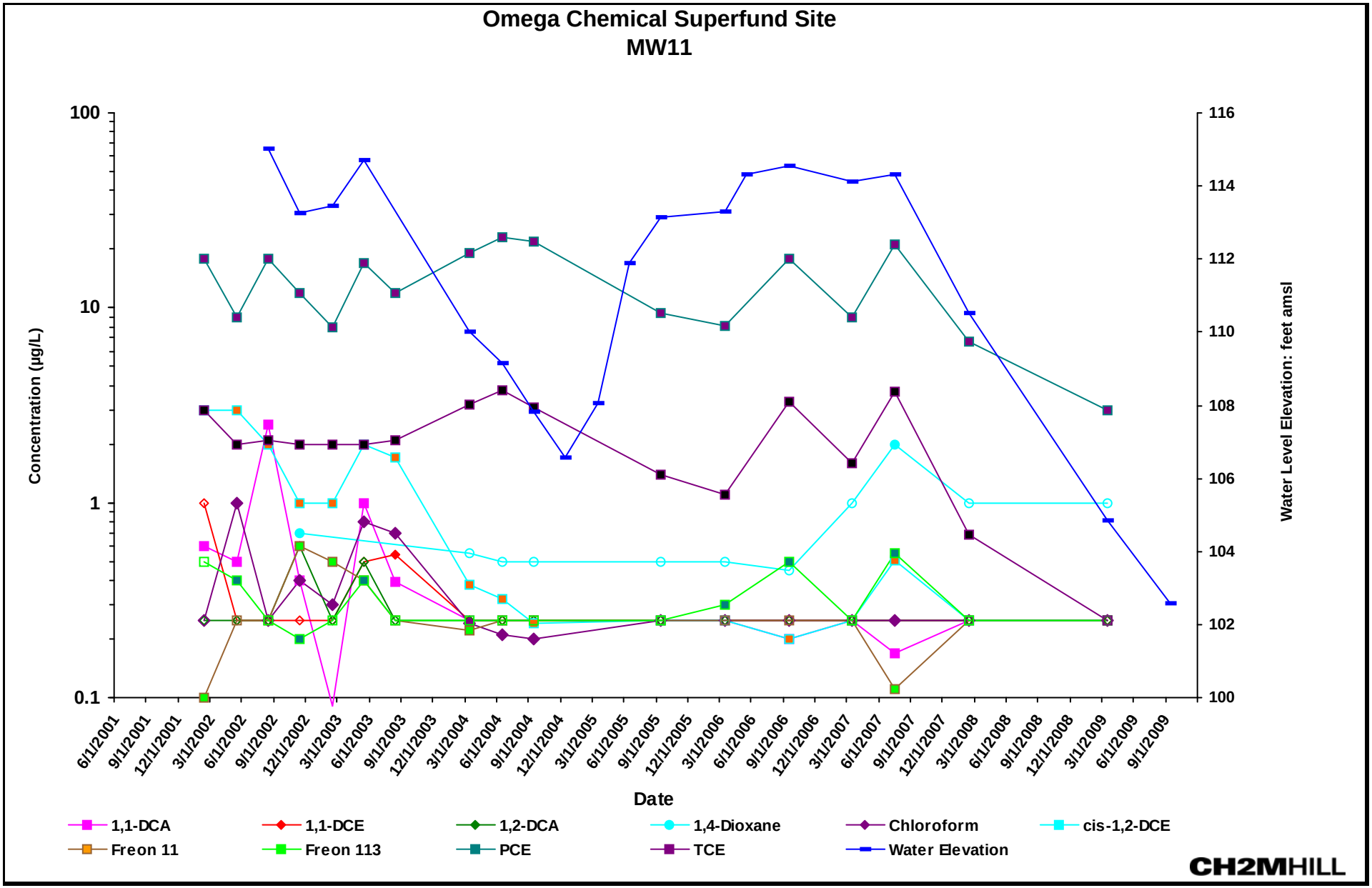

Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
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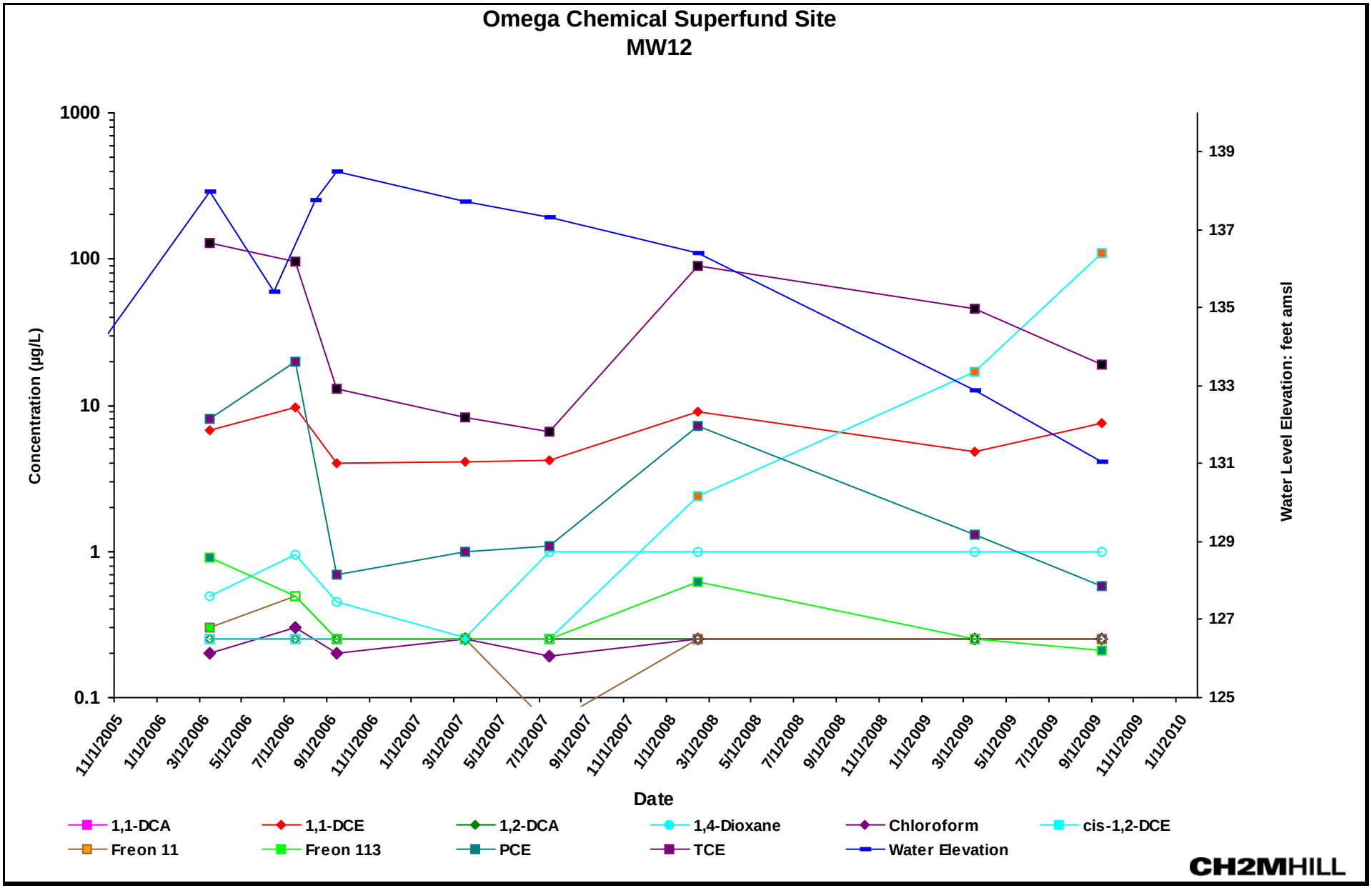
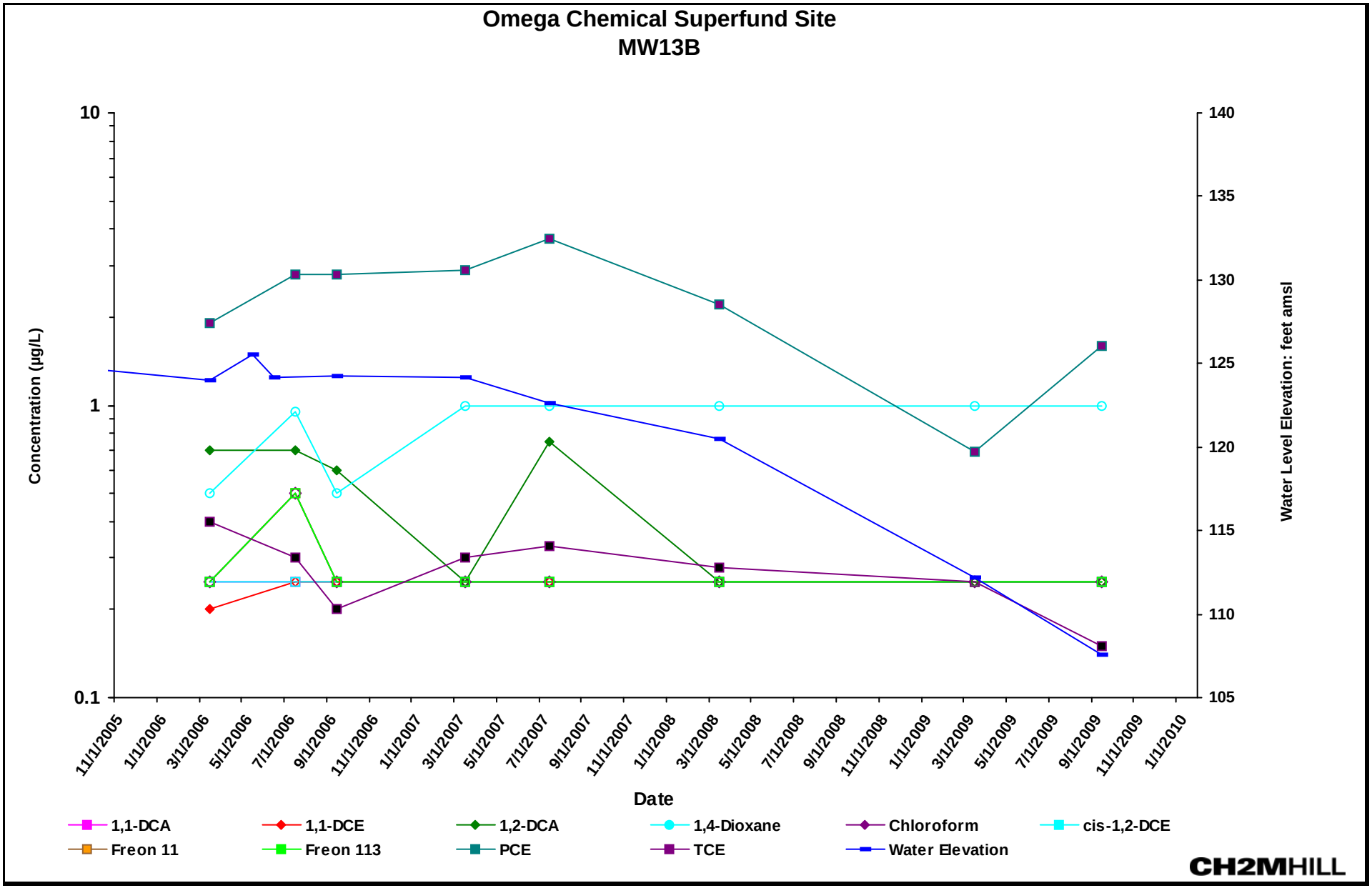
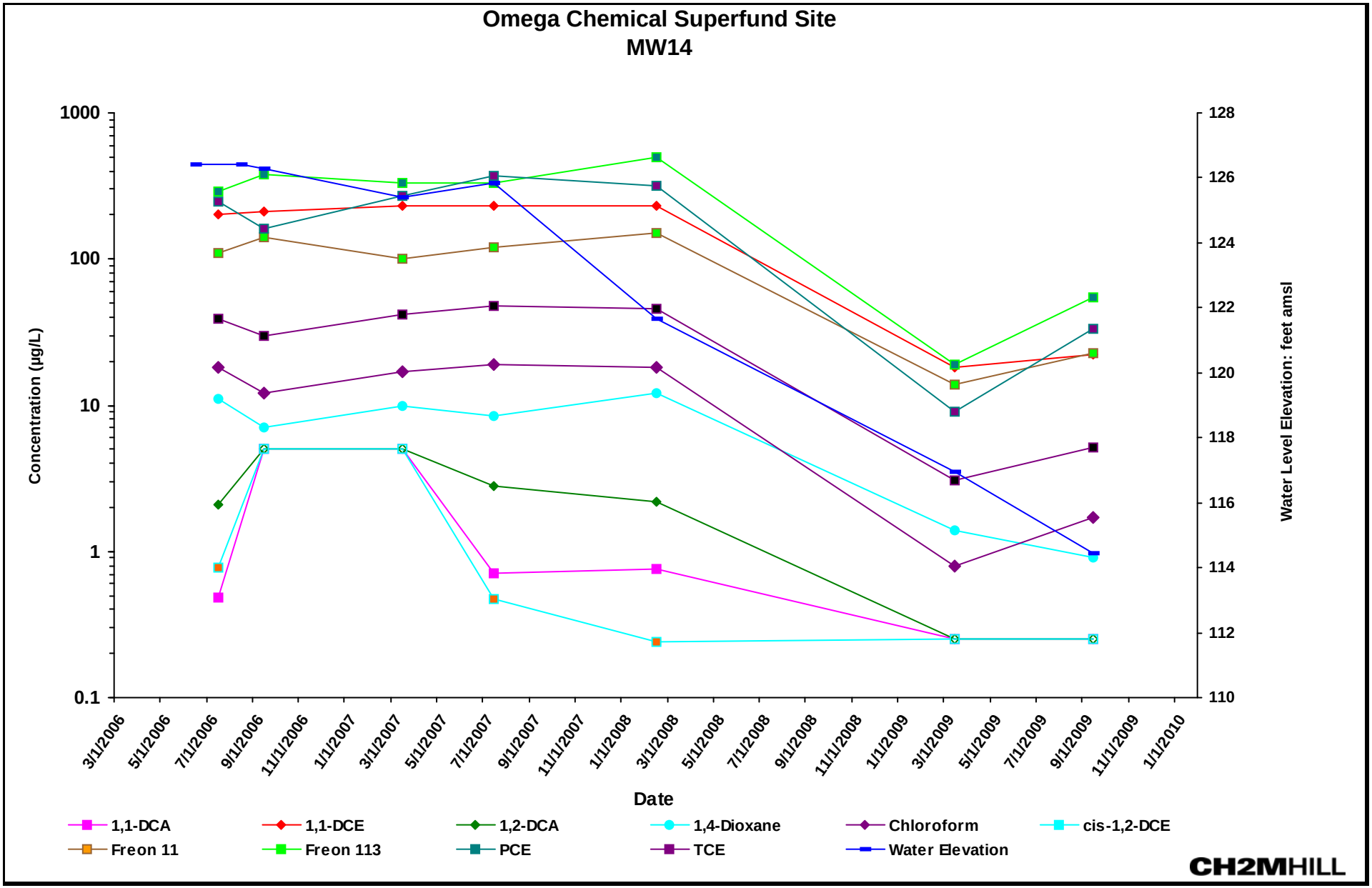


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



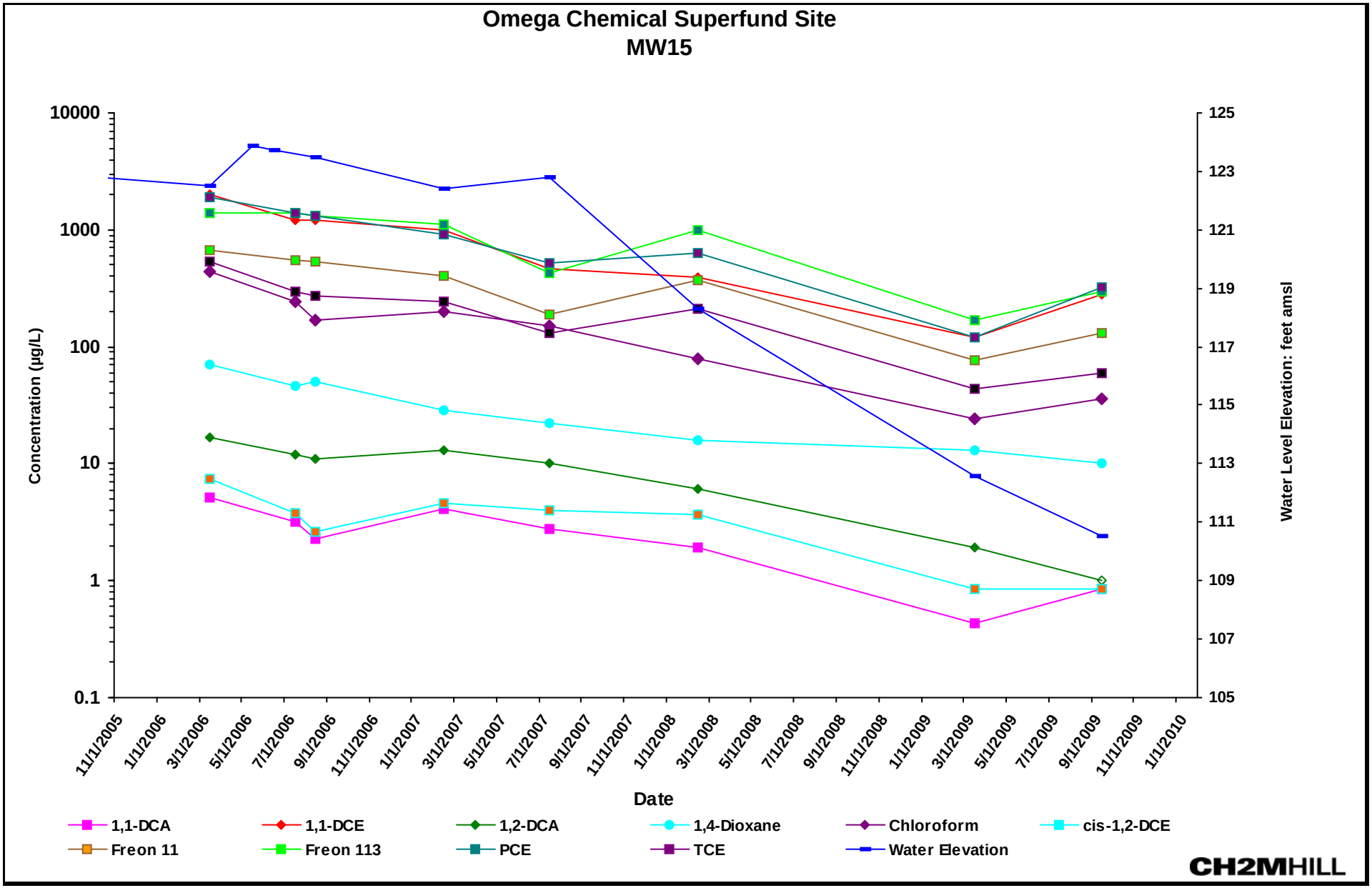
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



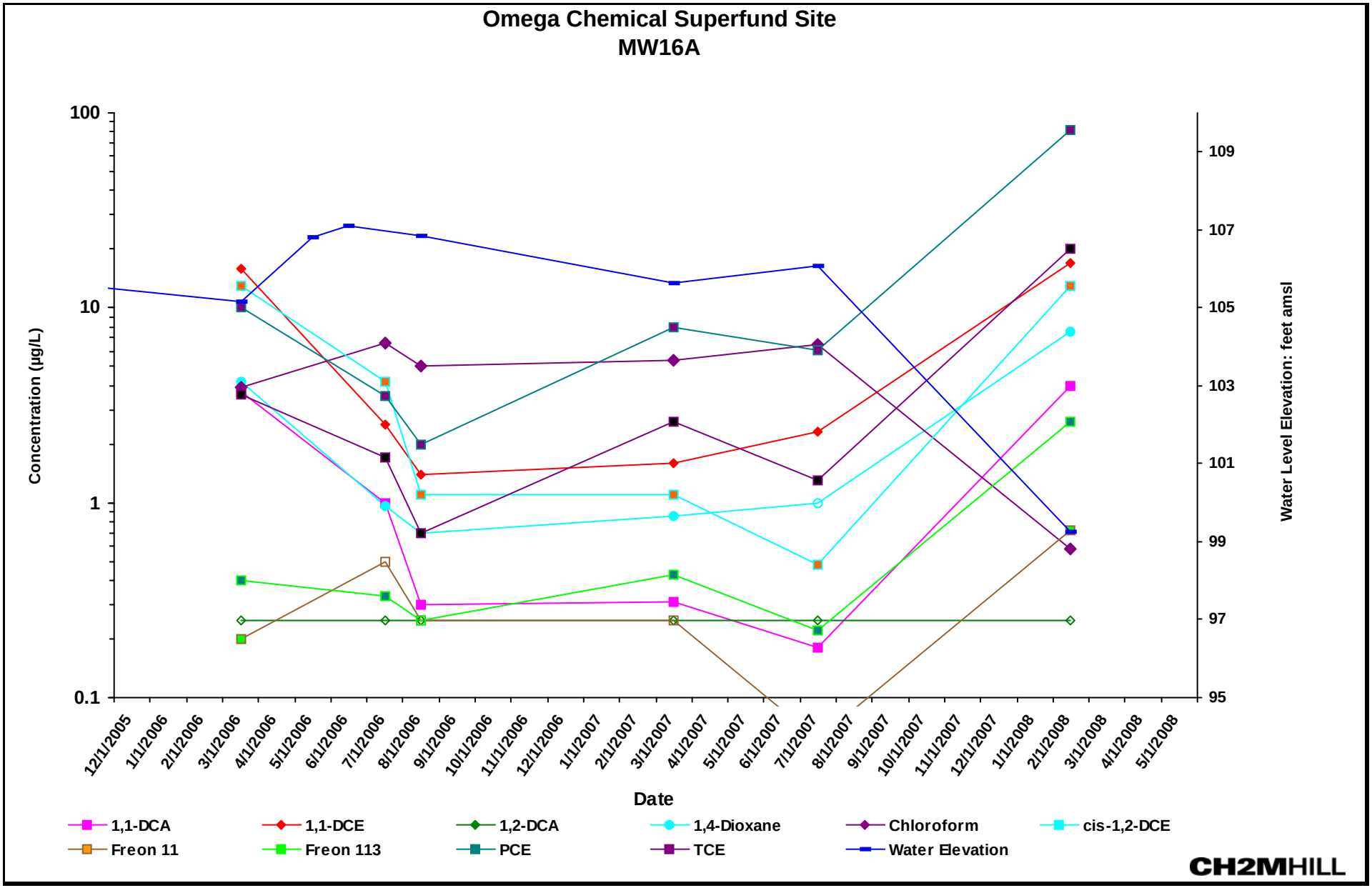
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



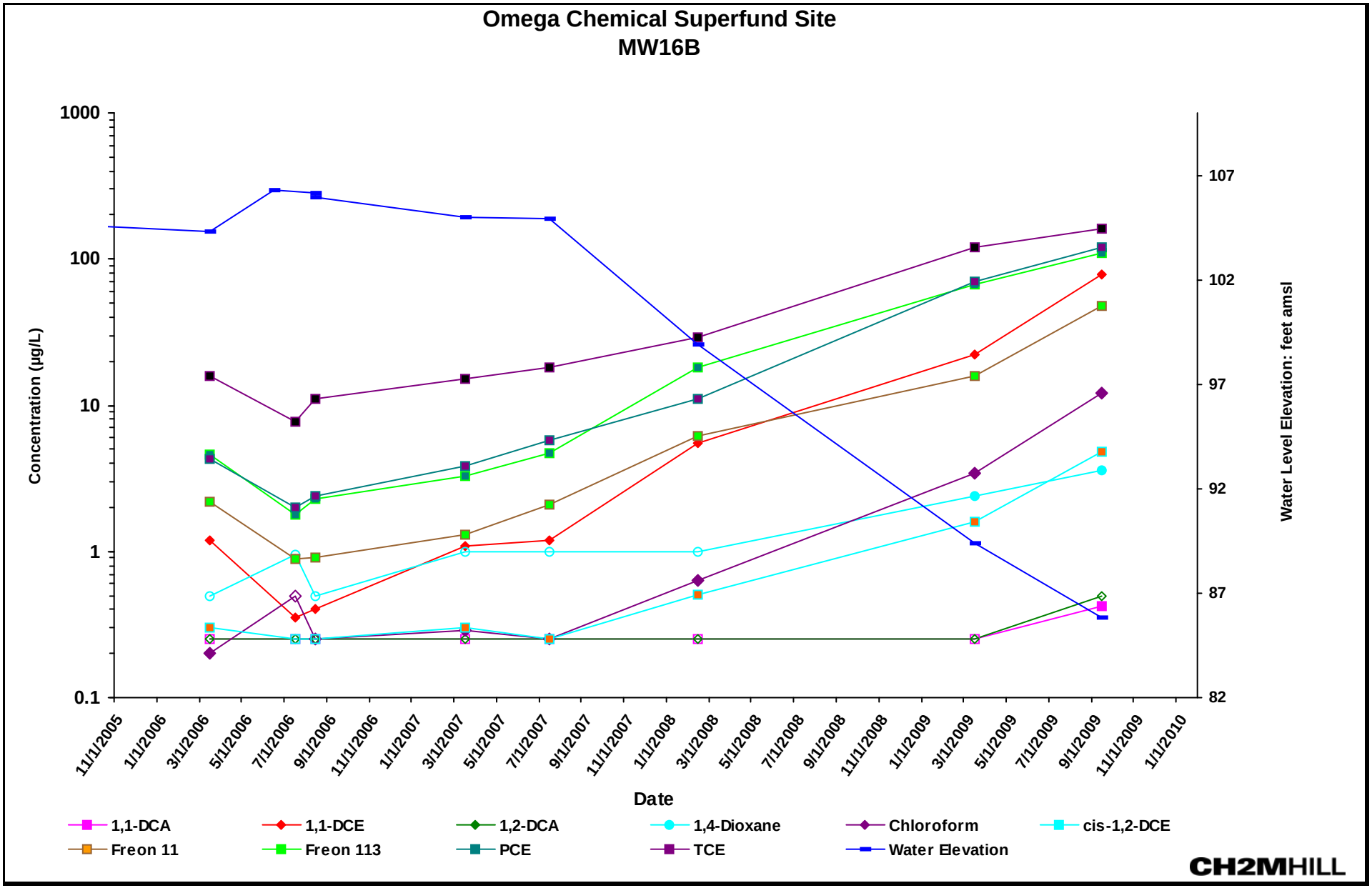
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

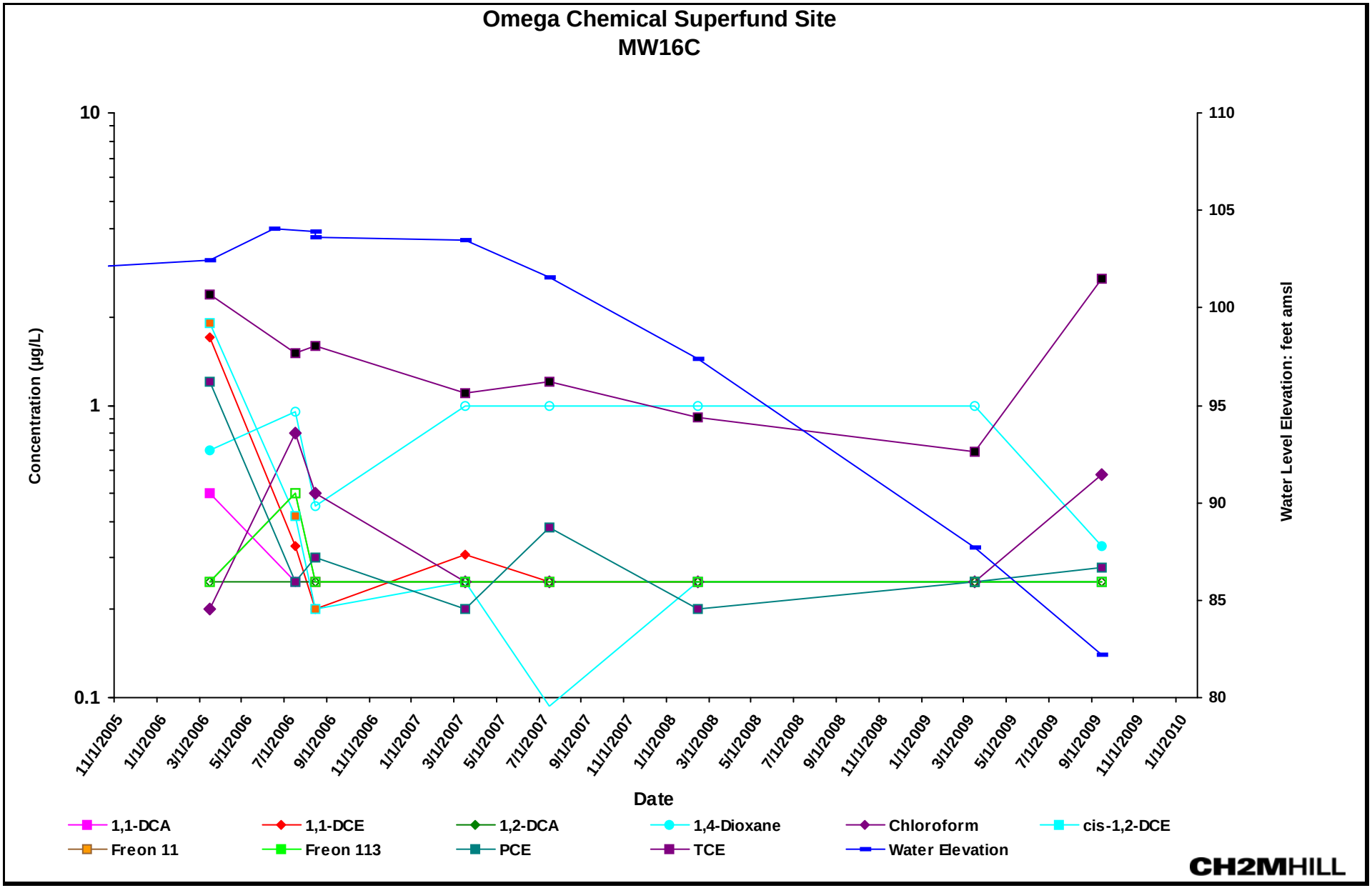


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

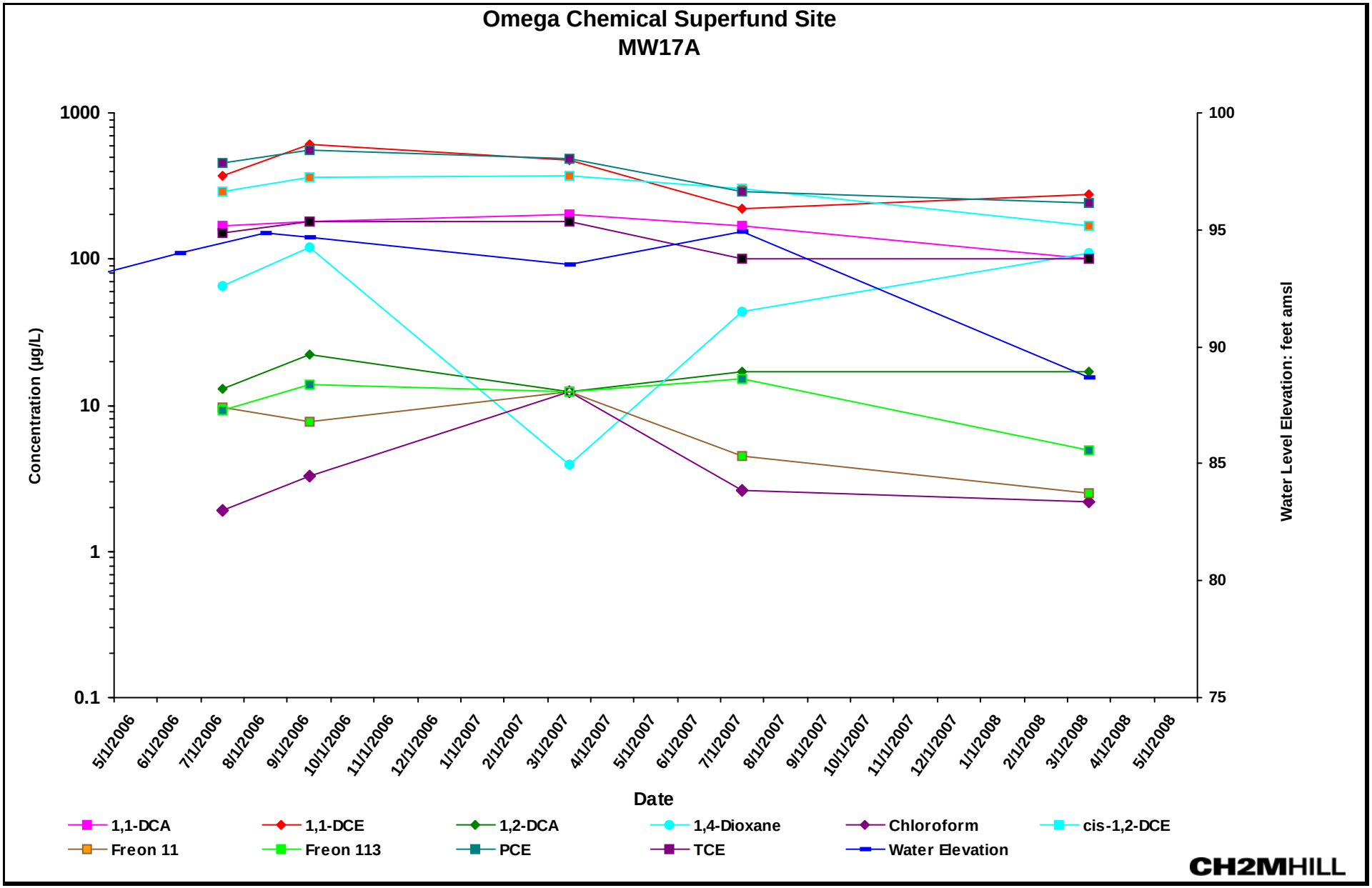


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



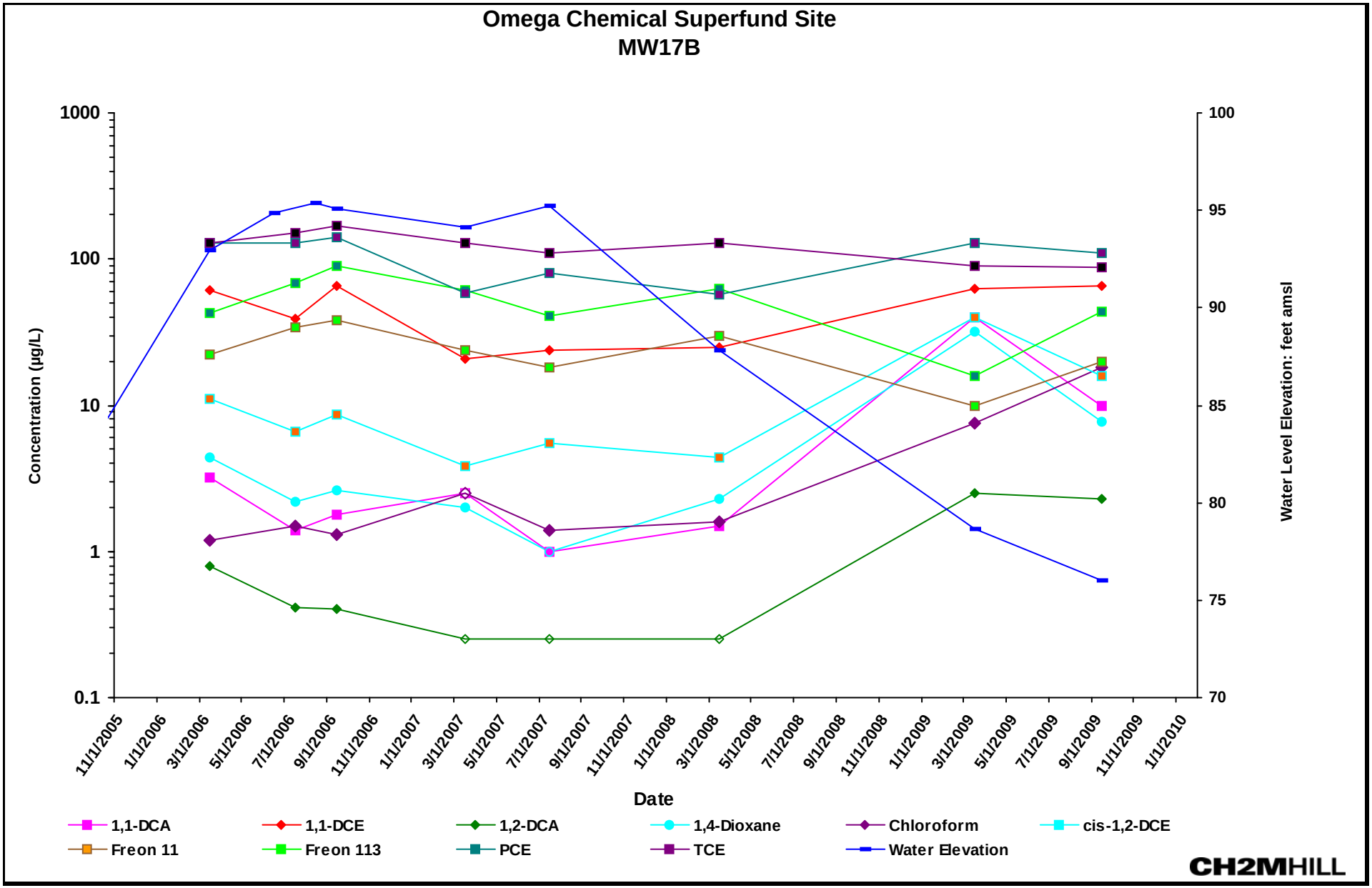
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



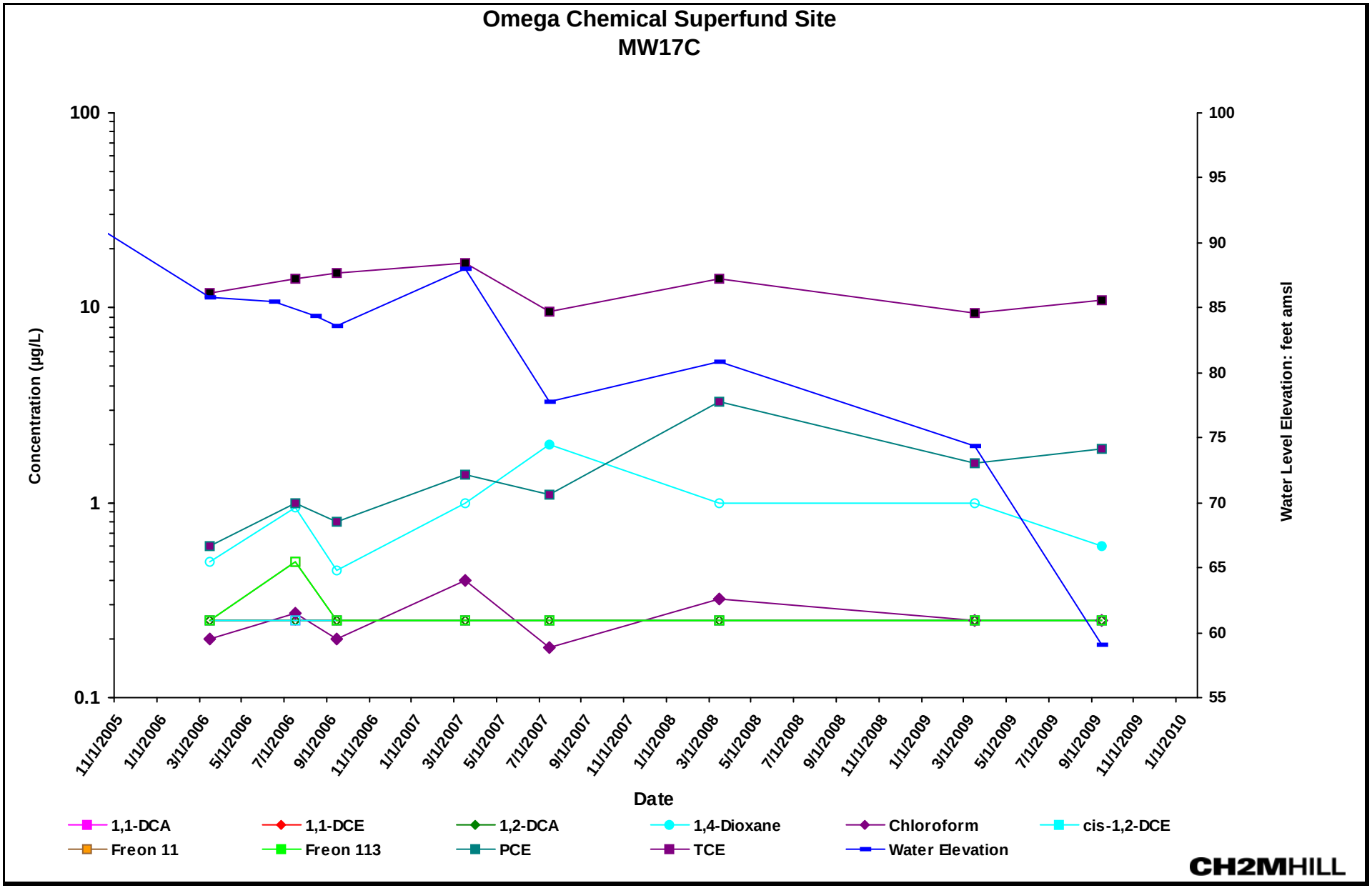
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



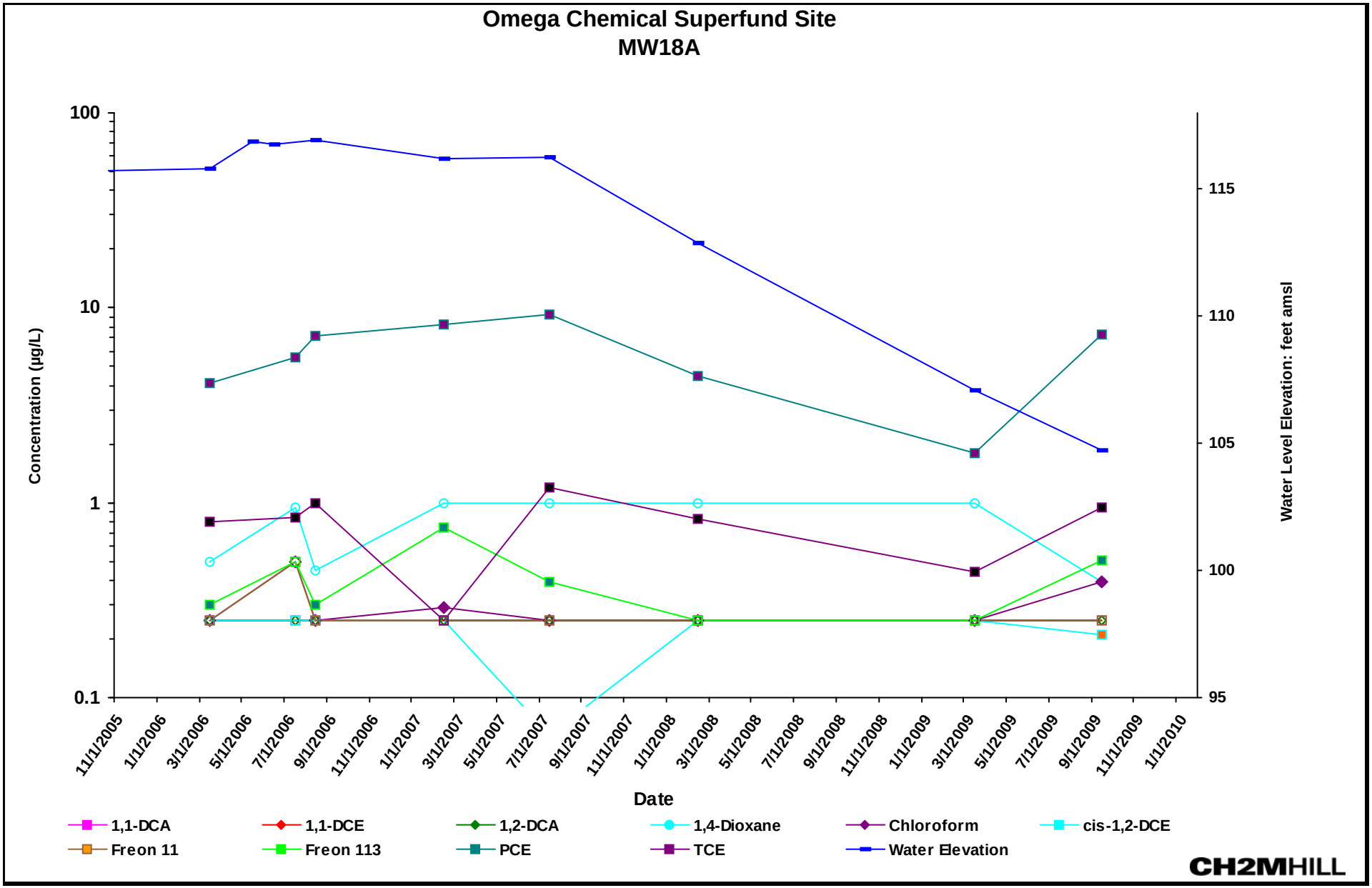
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



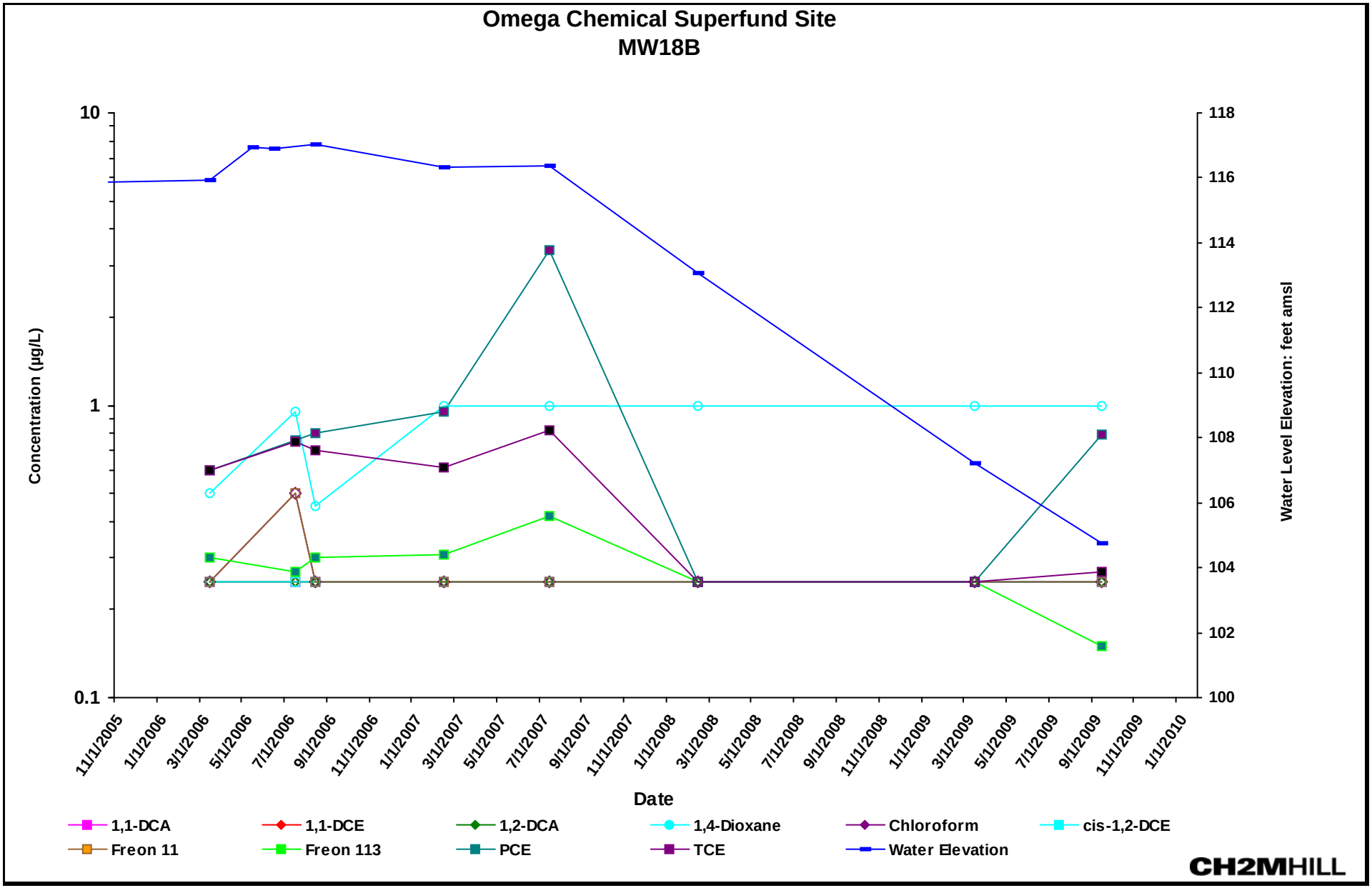
Notes:

1,1-DCA: 1,1-Dichloroethane
1,1-DCE: 1,1-Dichloroethene
1,2-DCA: 1,2-Dichloroethane
1,4-Dioxane: 1,4-Dioxane (p-dioxane)
cis-1,2-DCE: cis-1,2-Dichloroethene
Freon 11: Trichlorofluoromethane
Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane
PCE: Tetrachloroethene
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

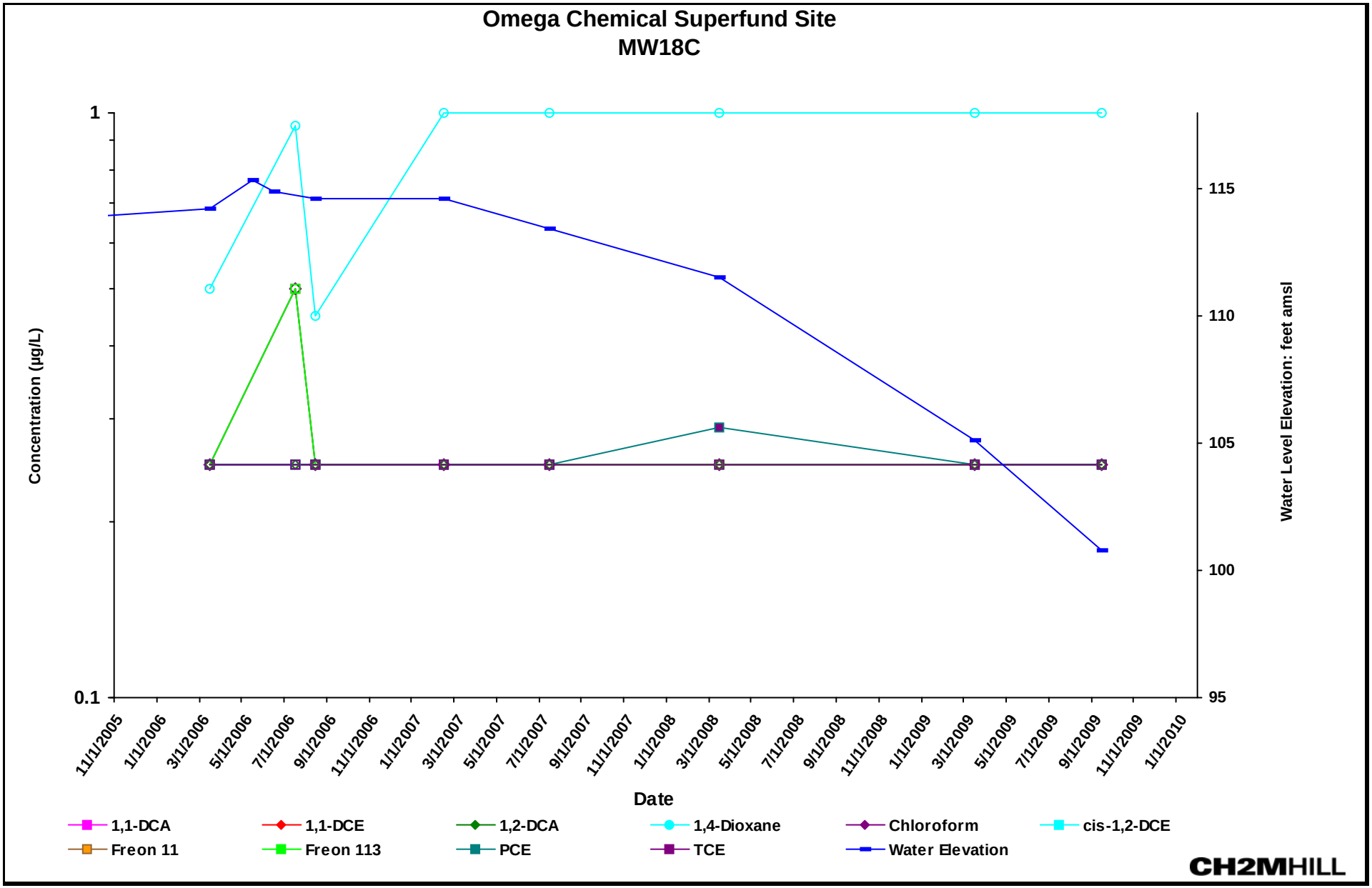


Notes:

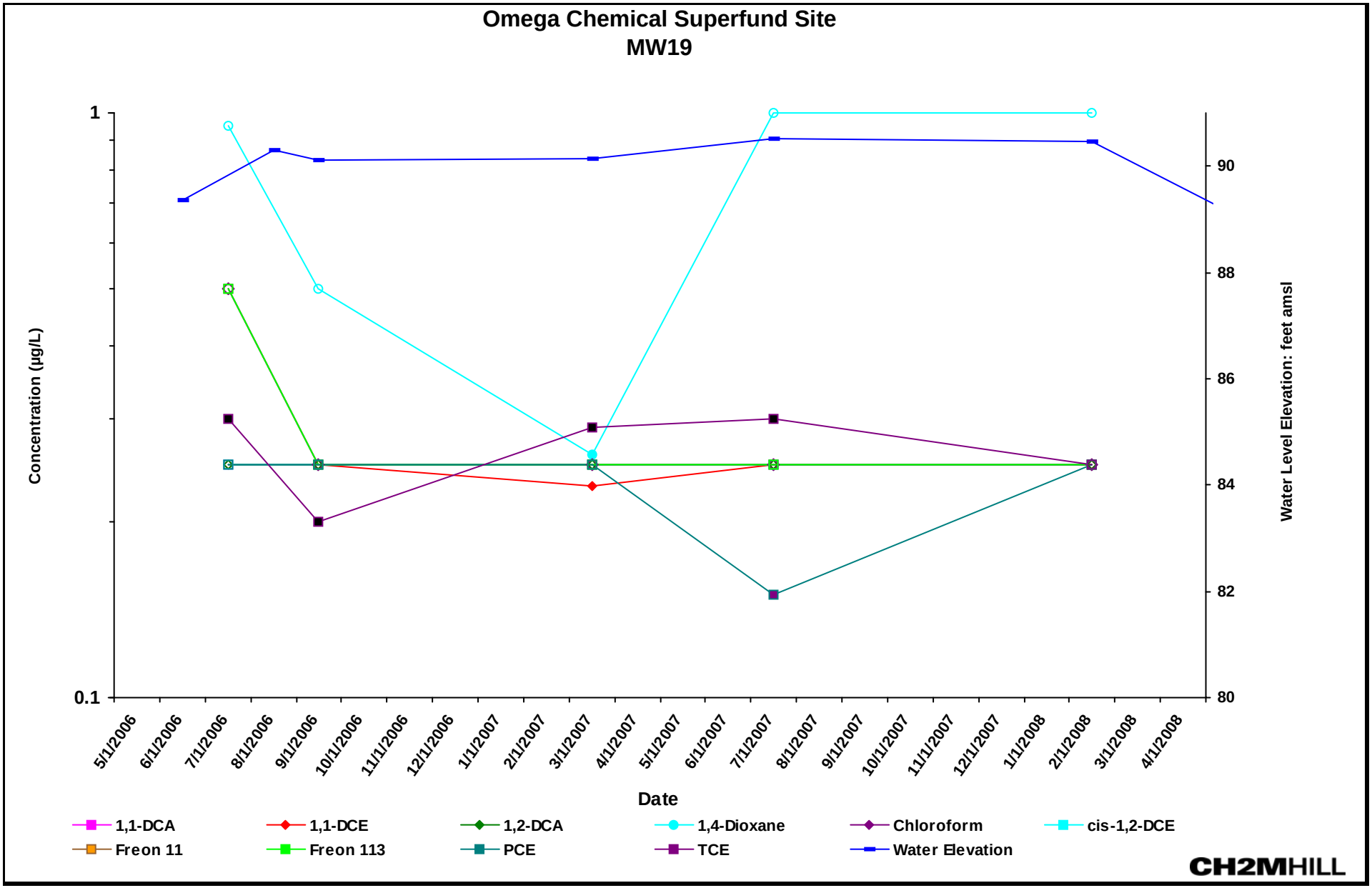
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

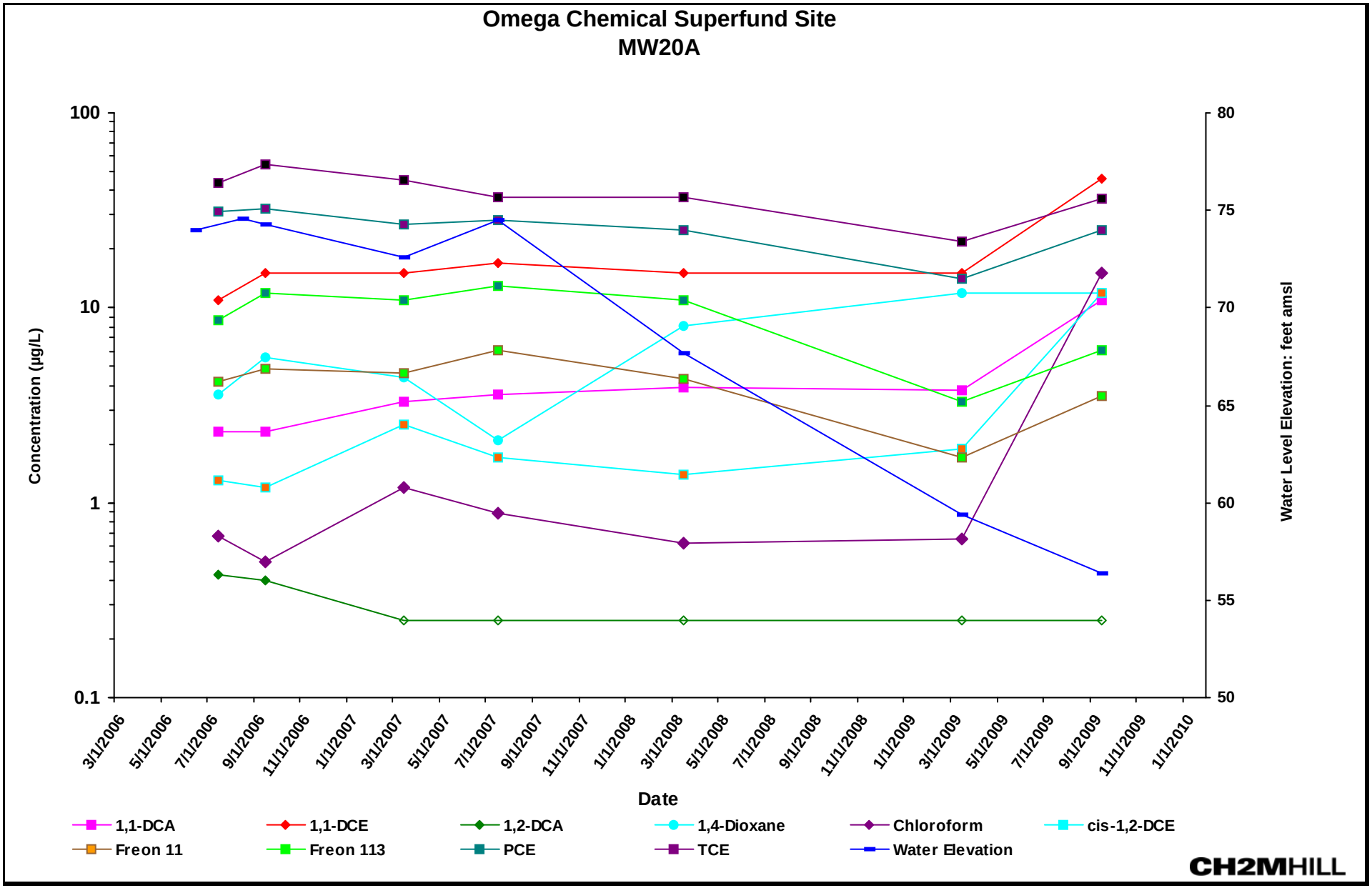


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



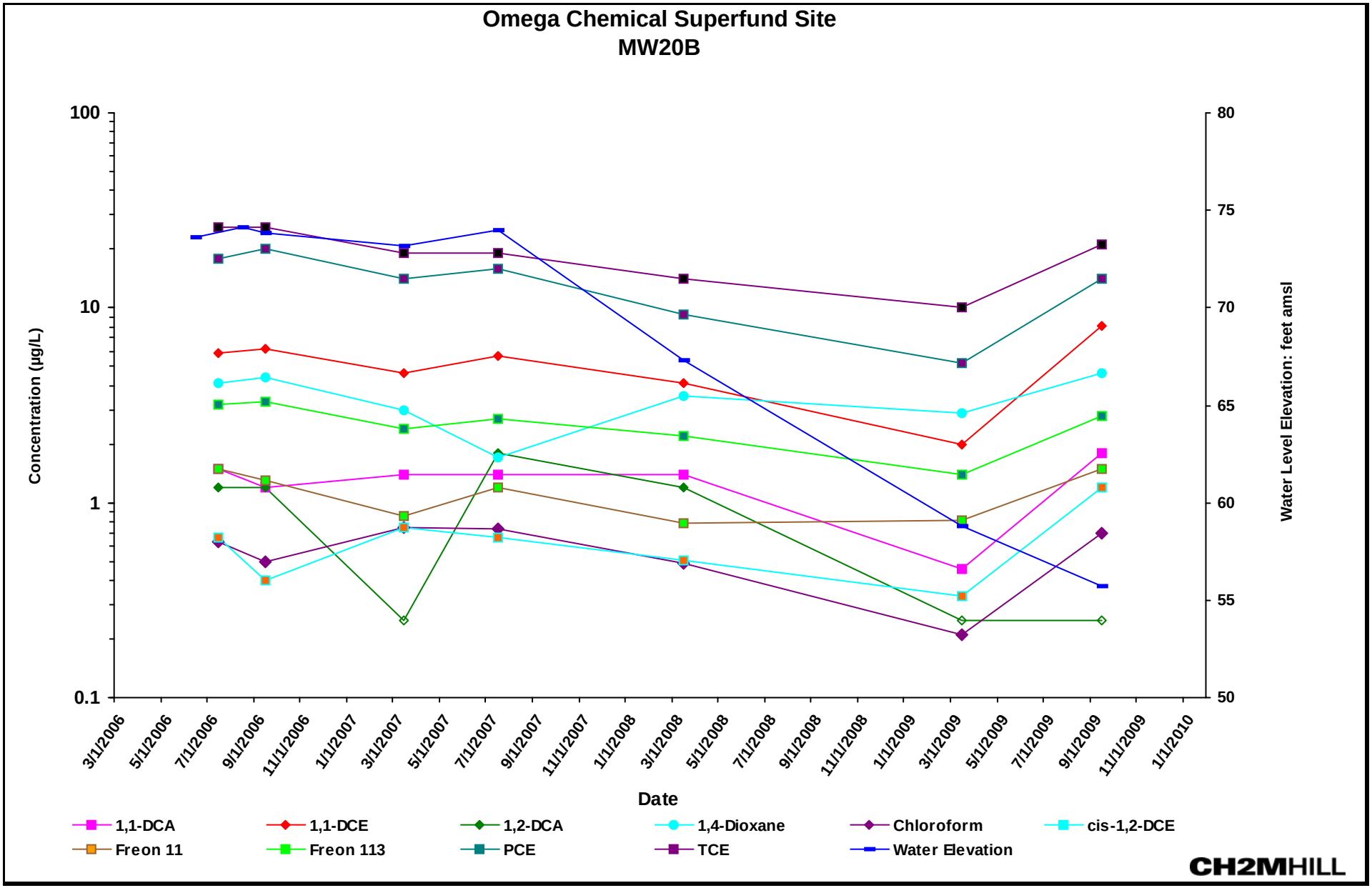
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



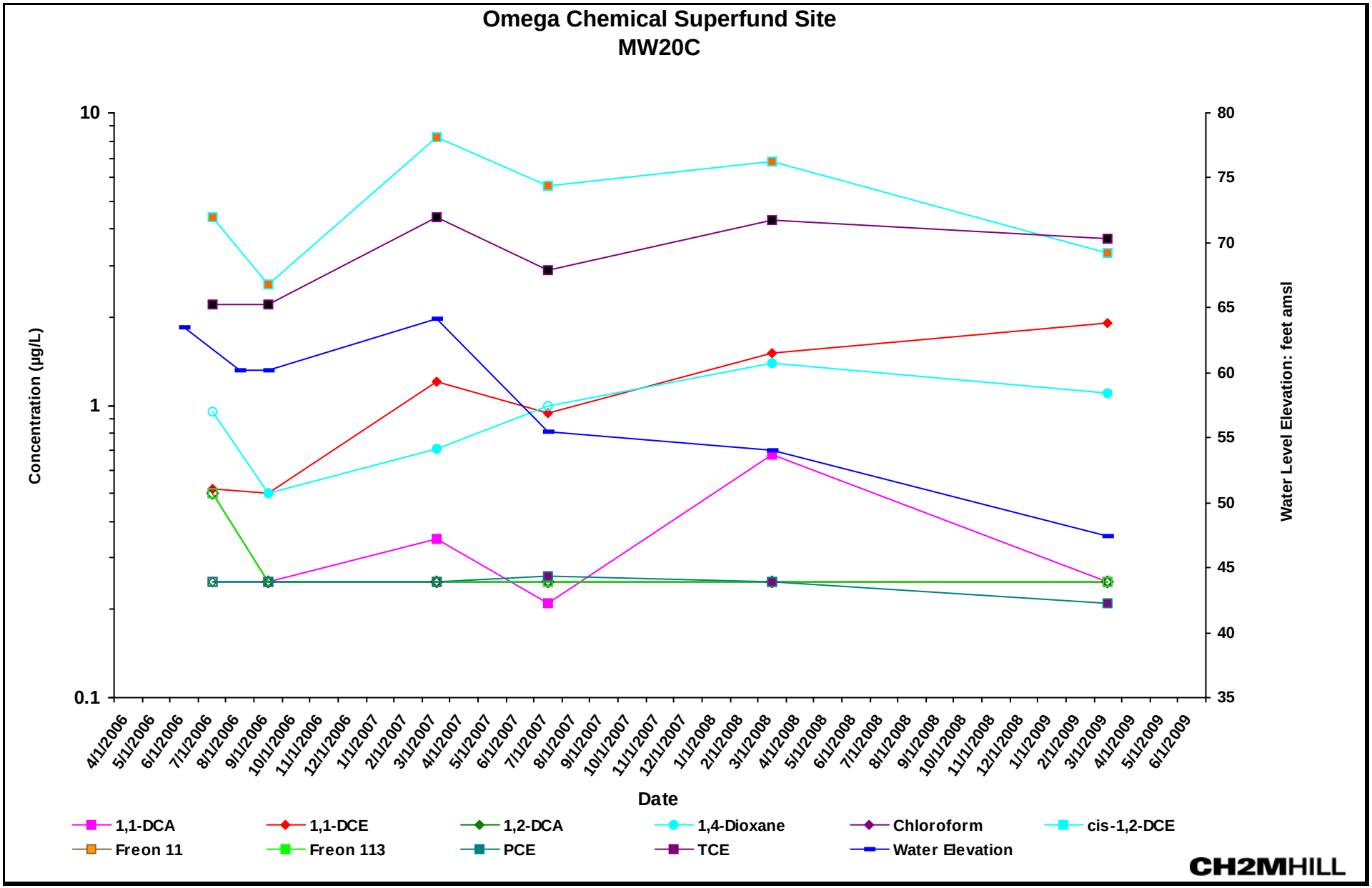
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



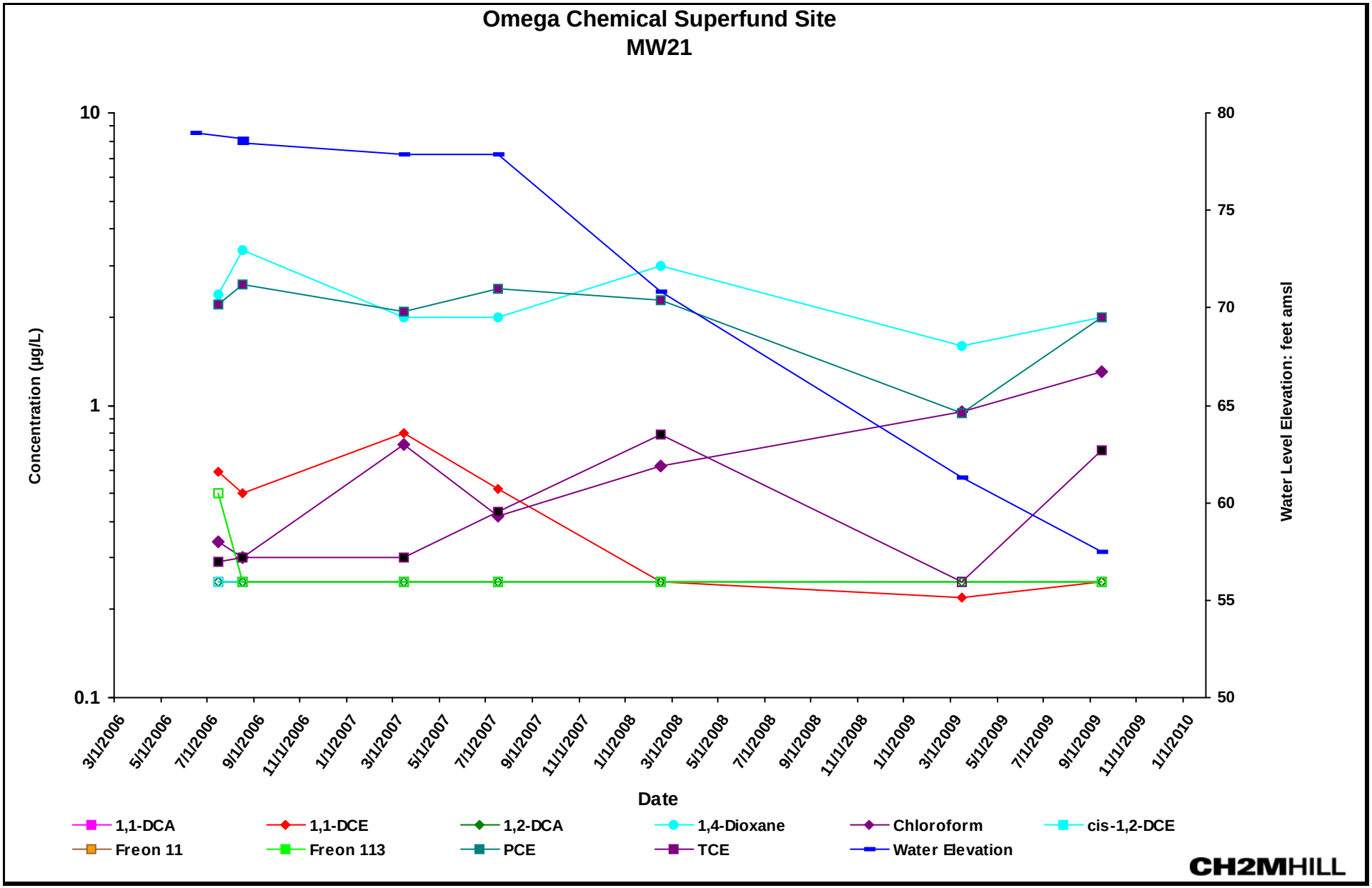
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



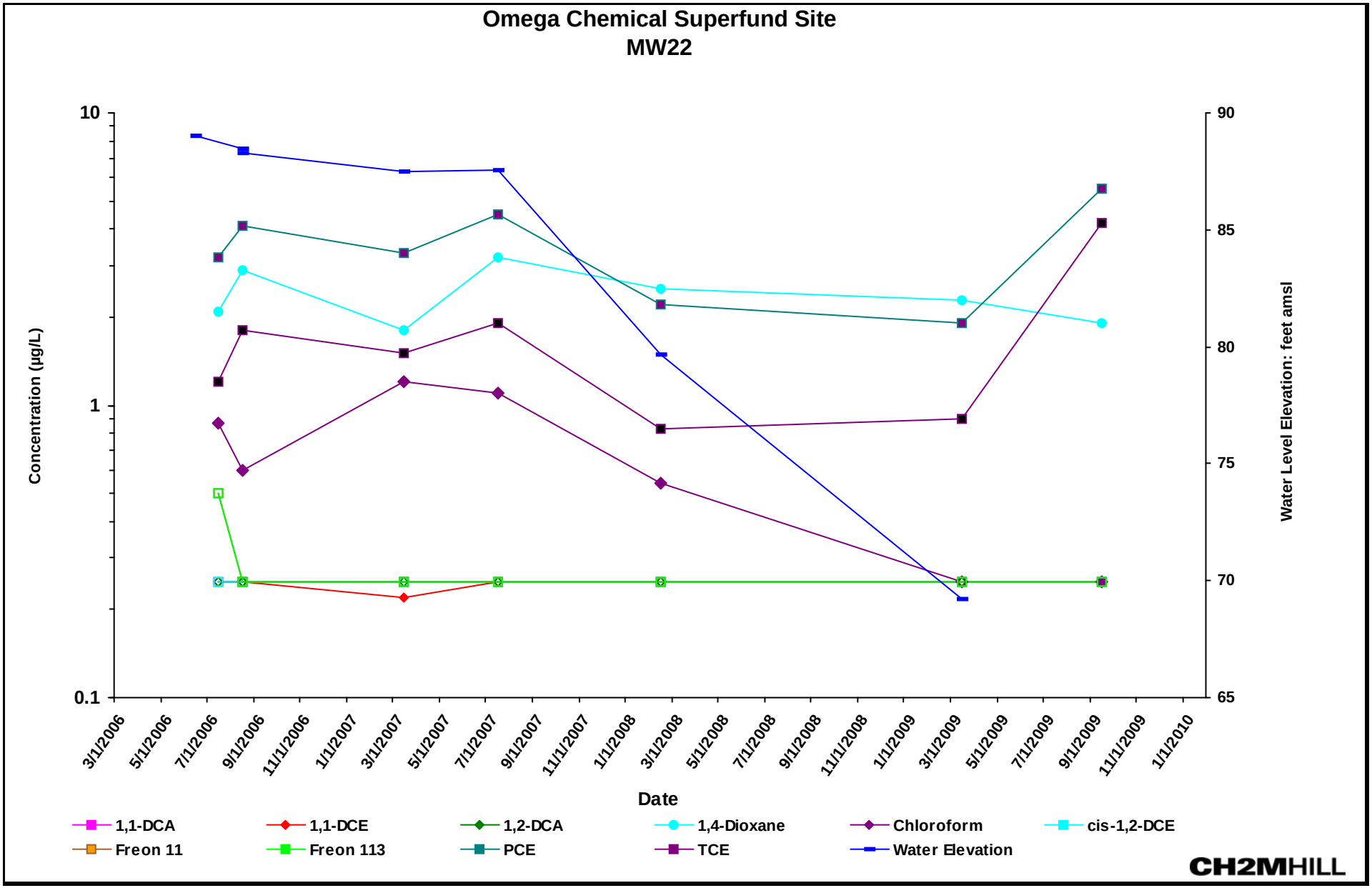
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
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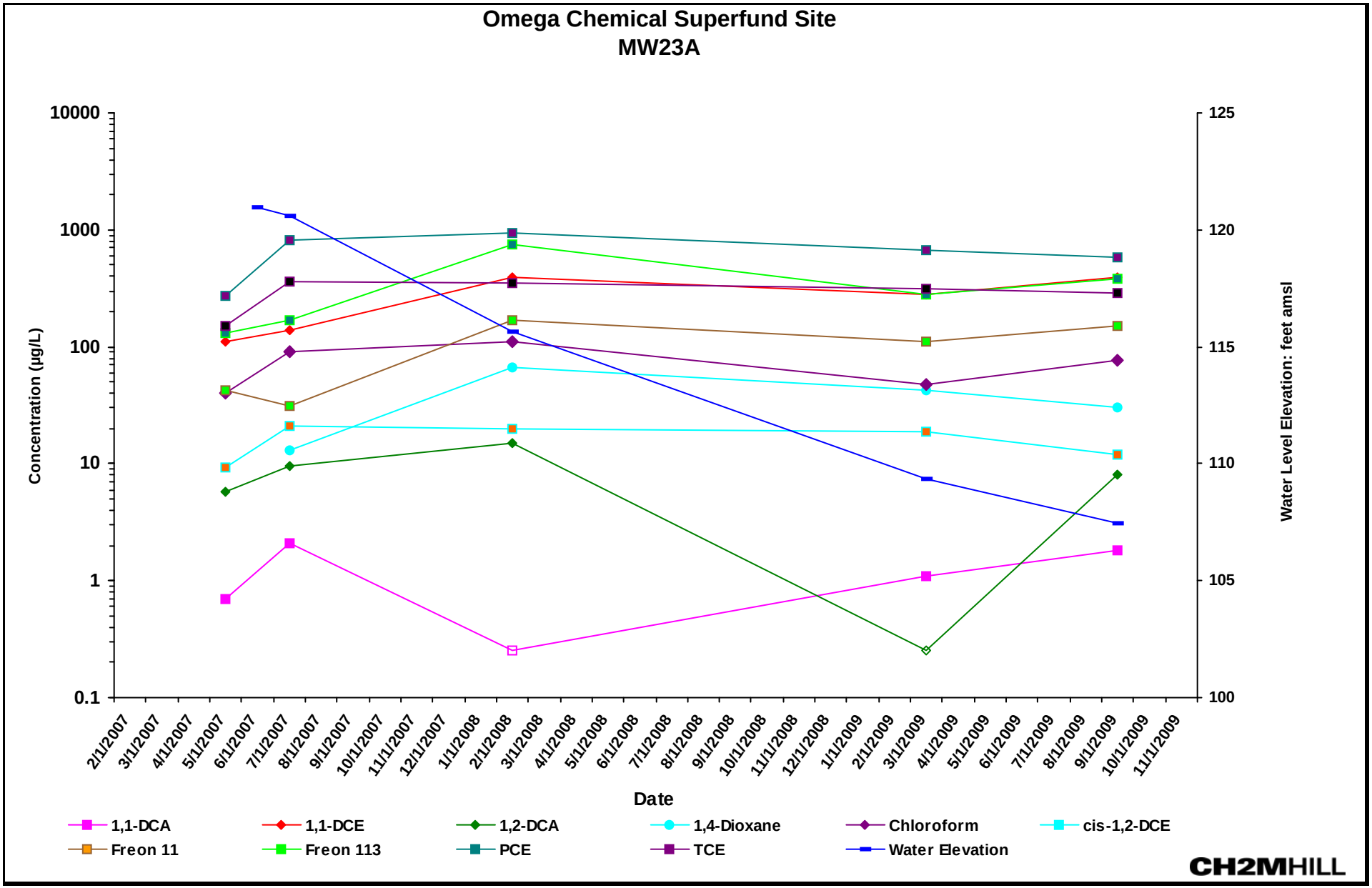
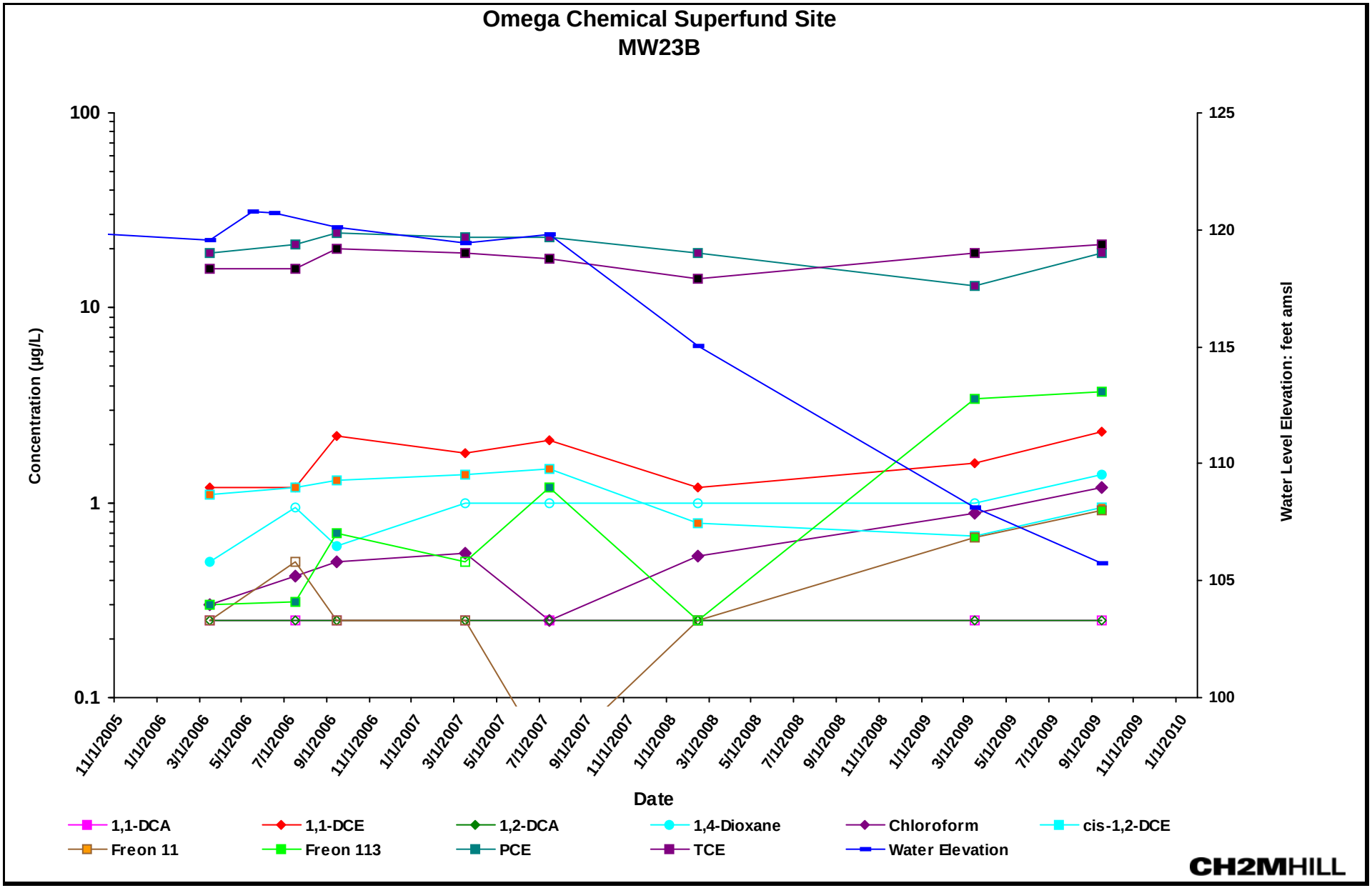
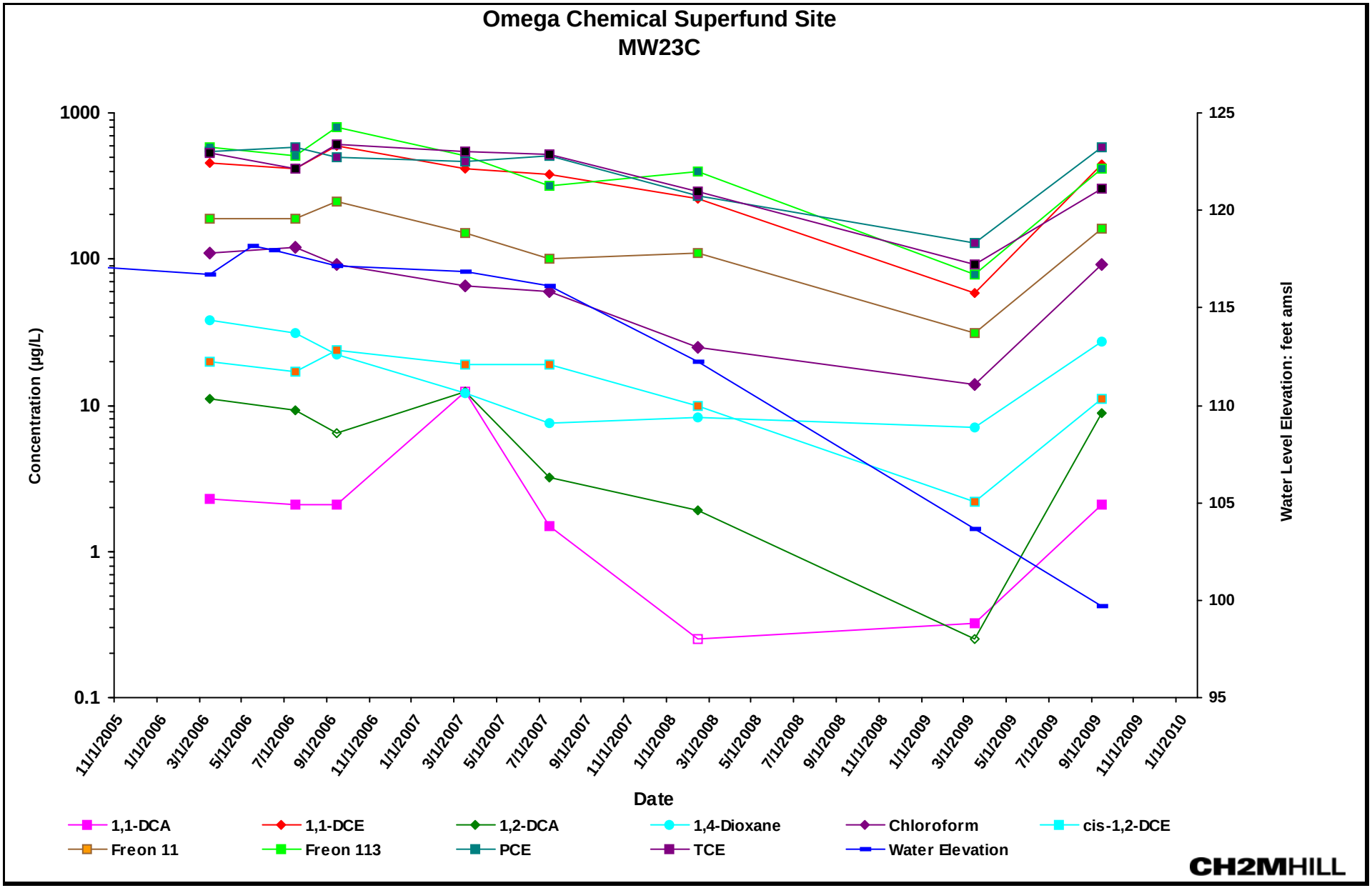


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



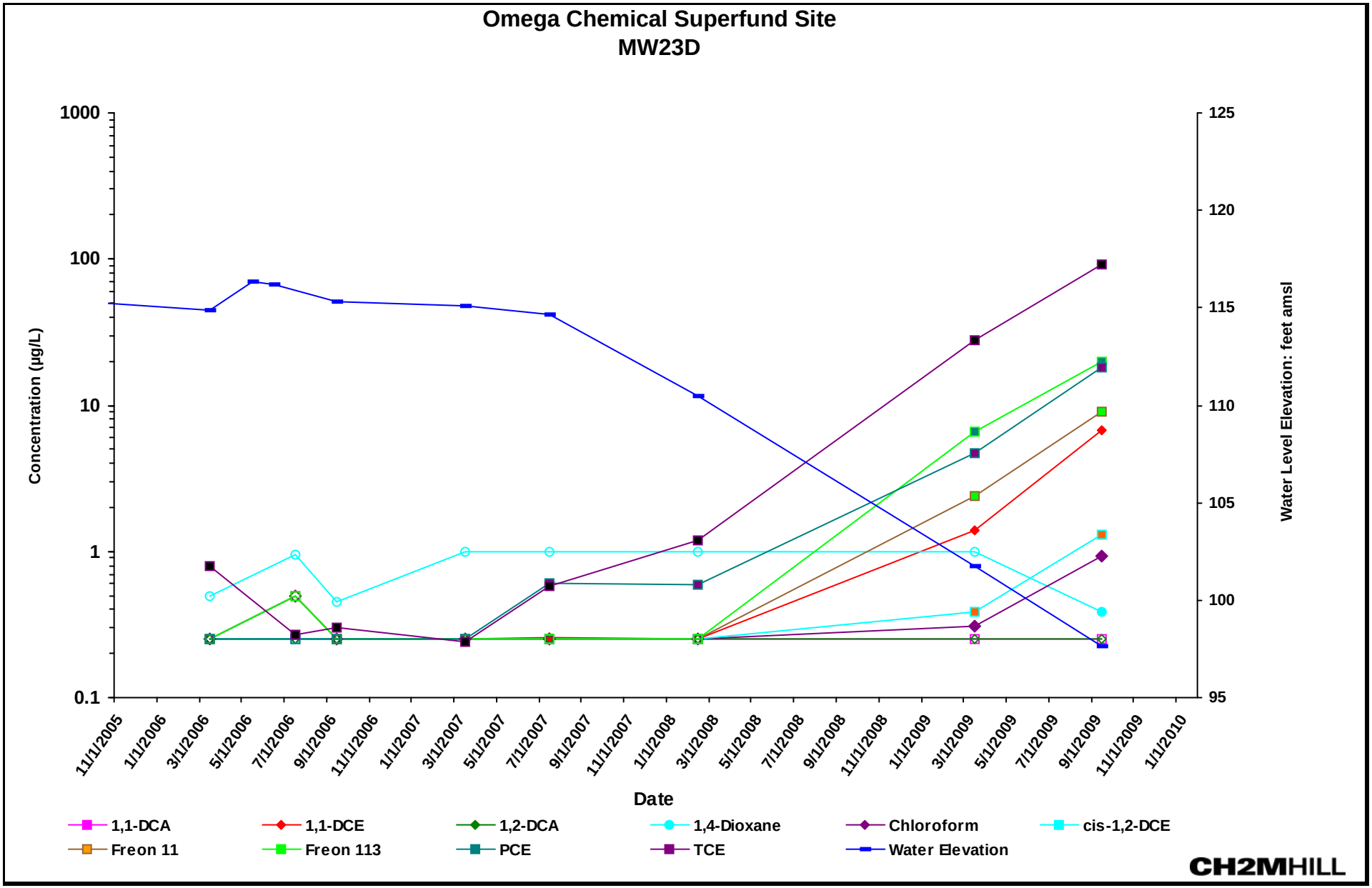
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



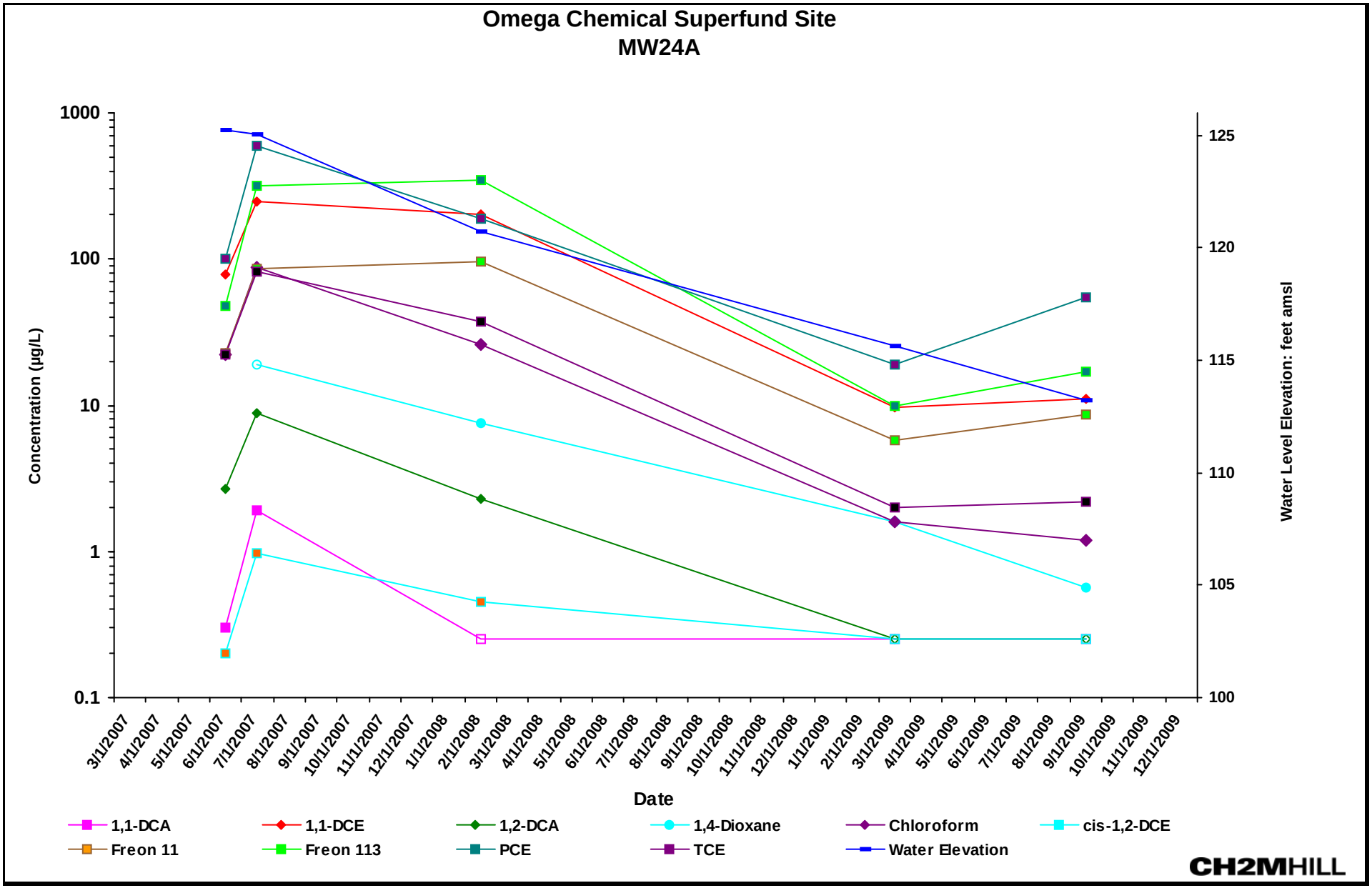
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
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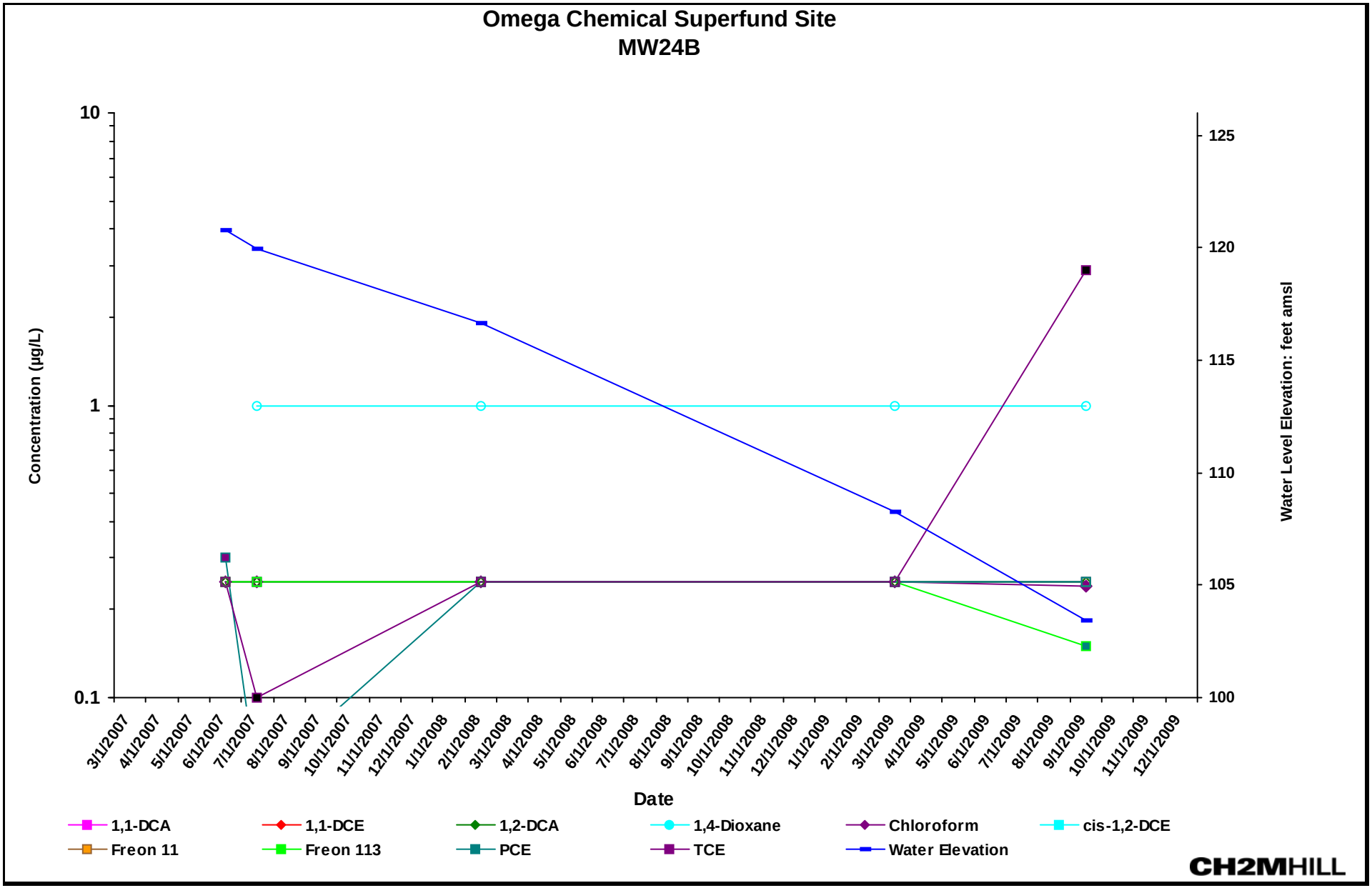
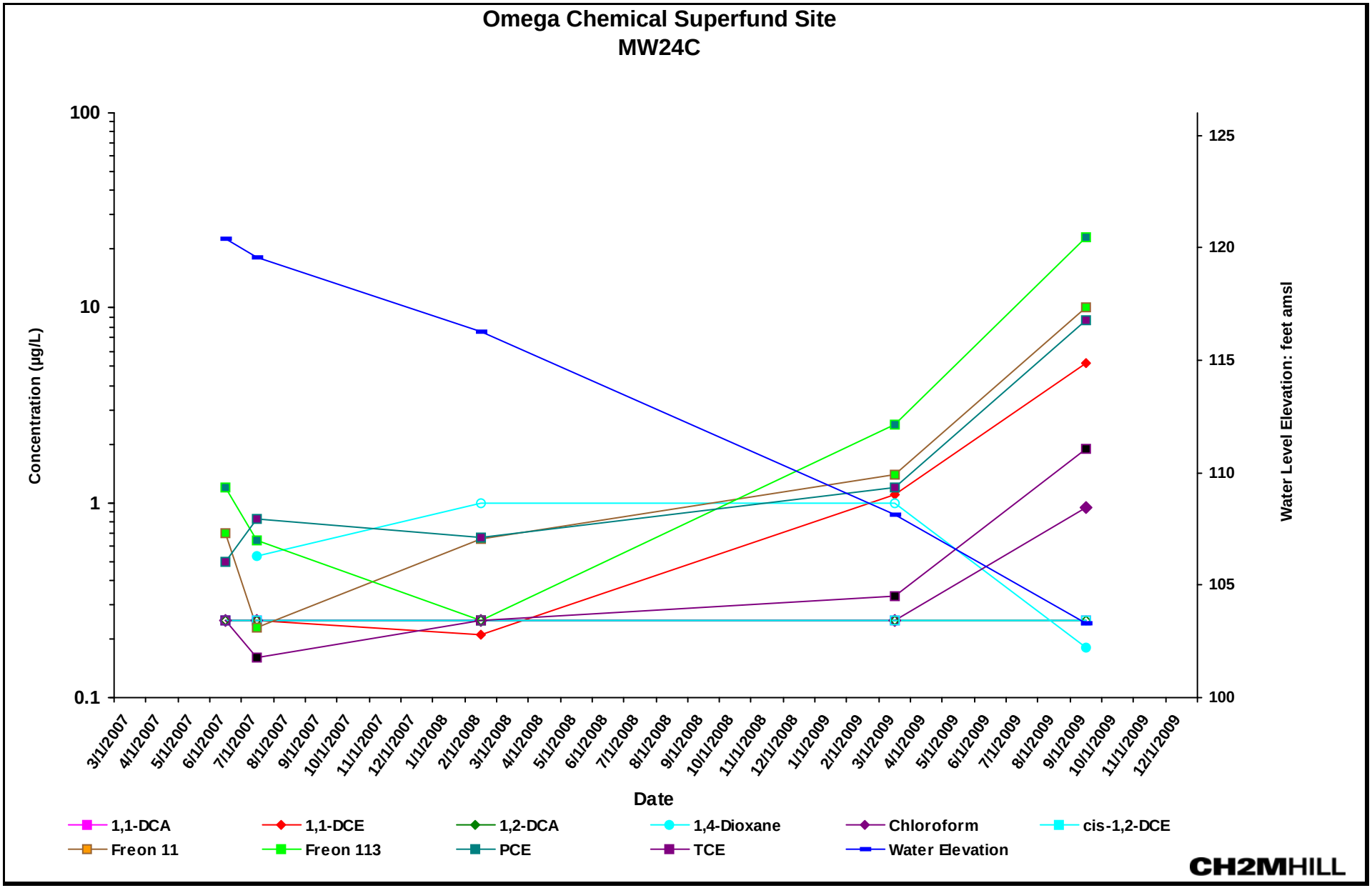


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
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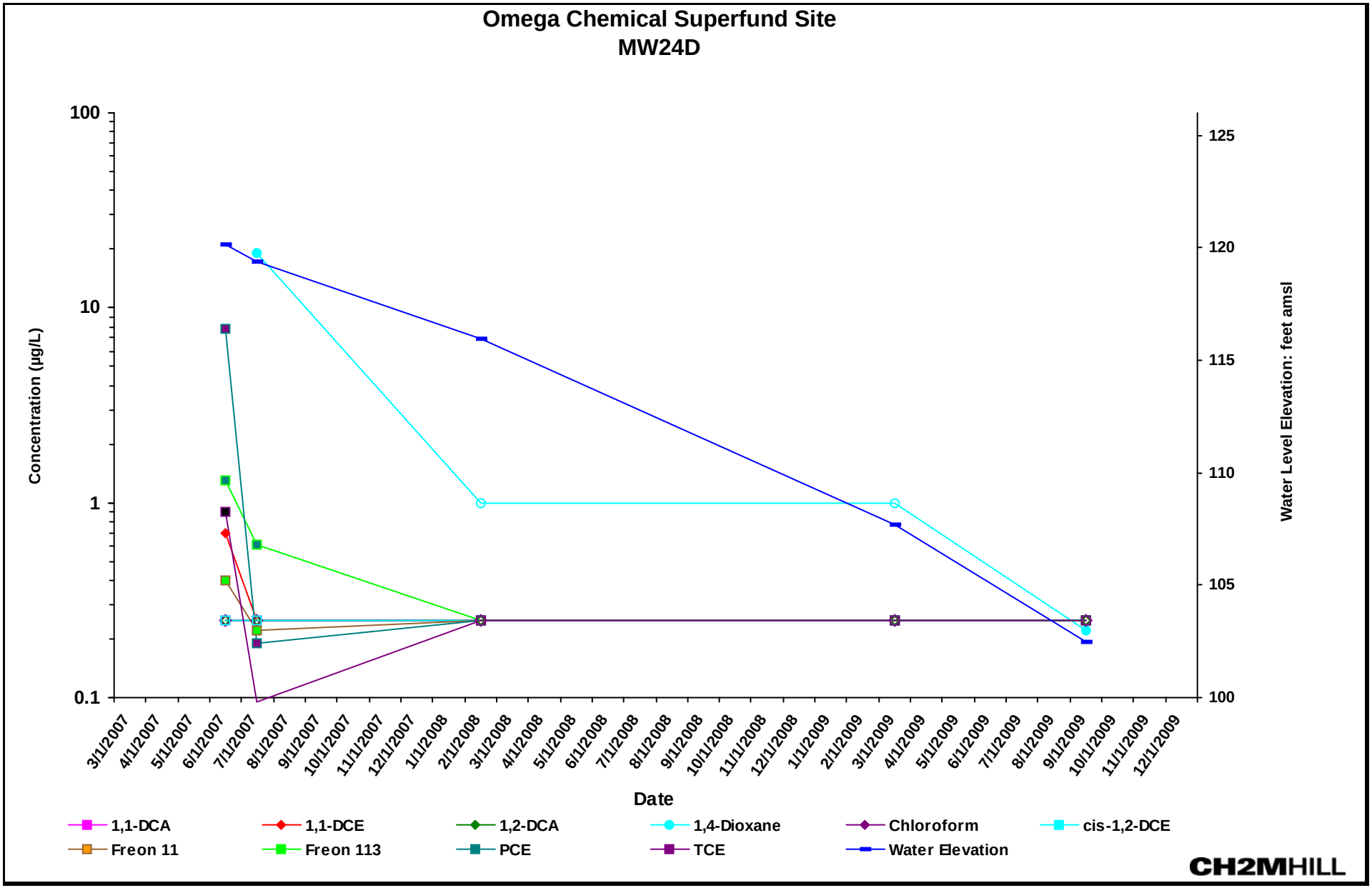

Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
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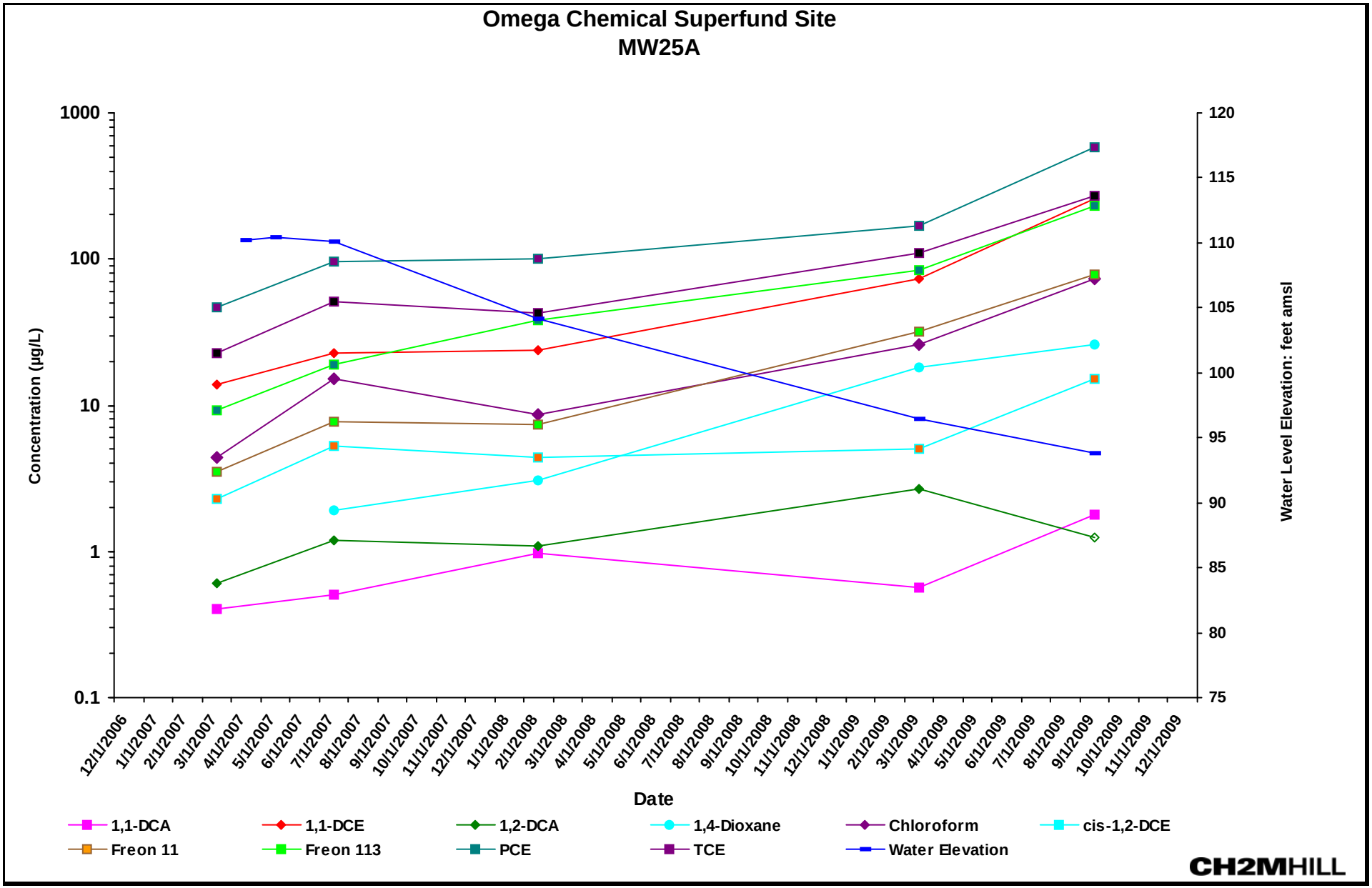
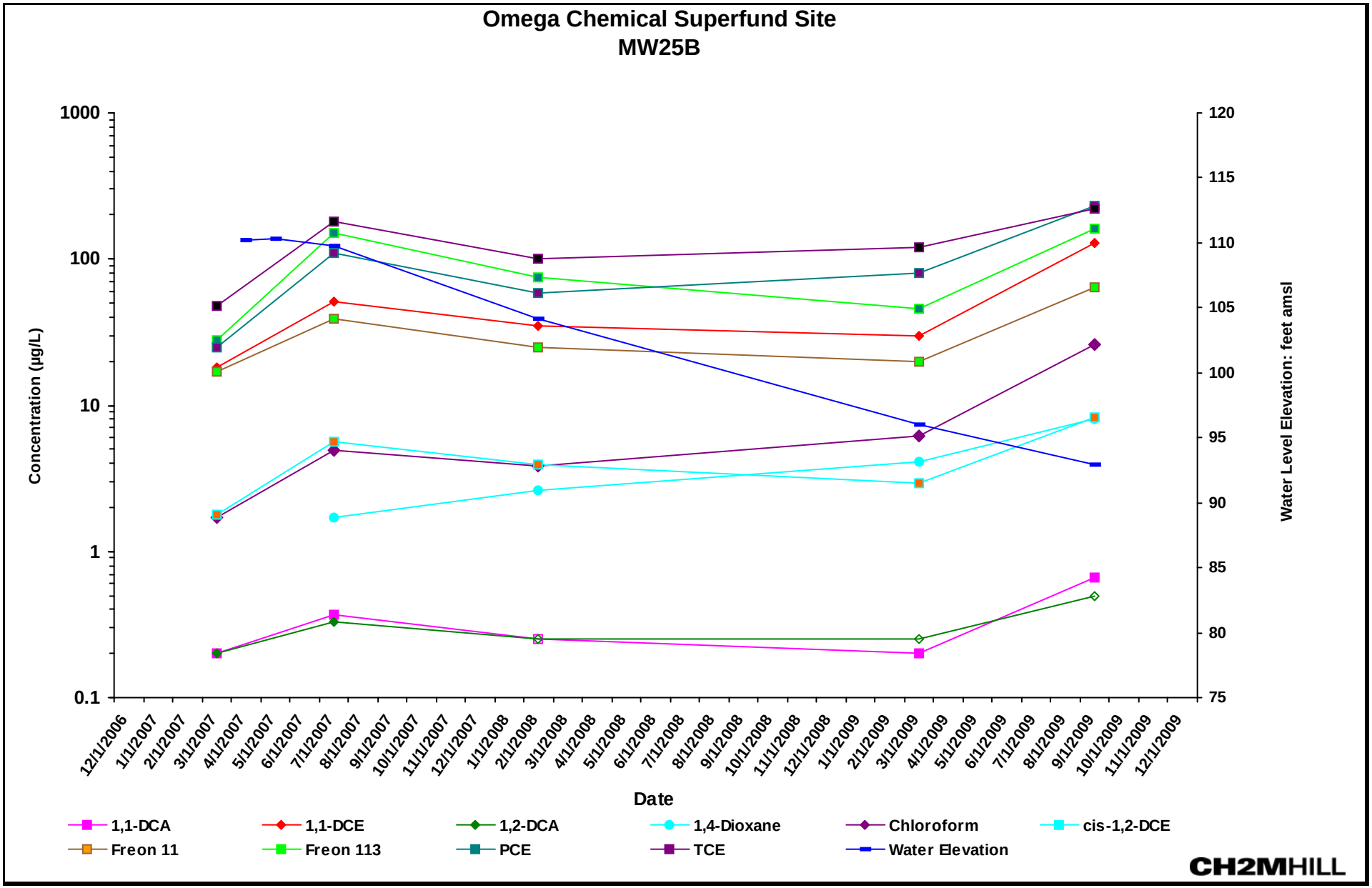


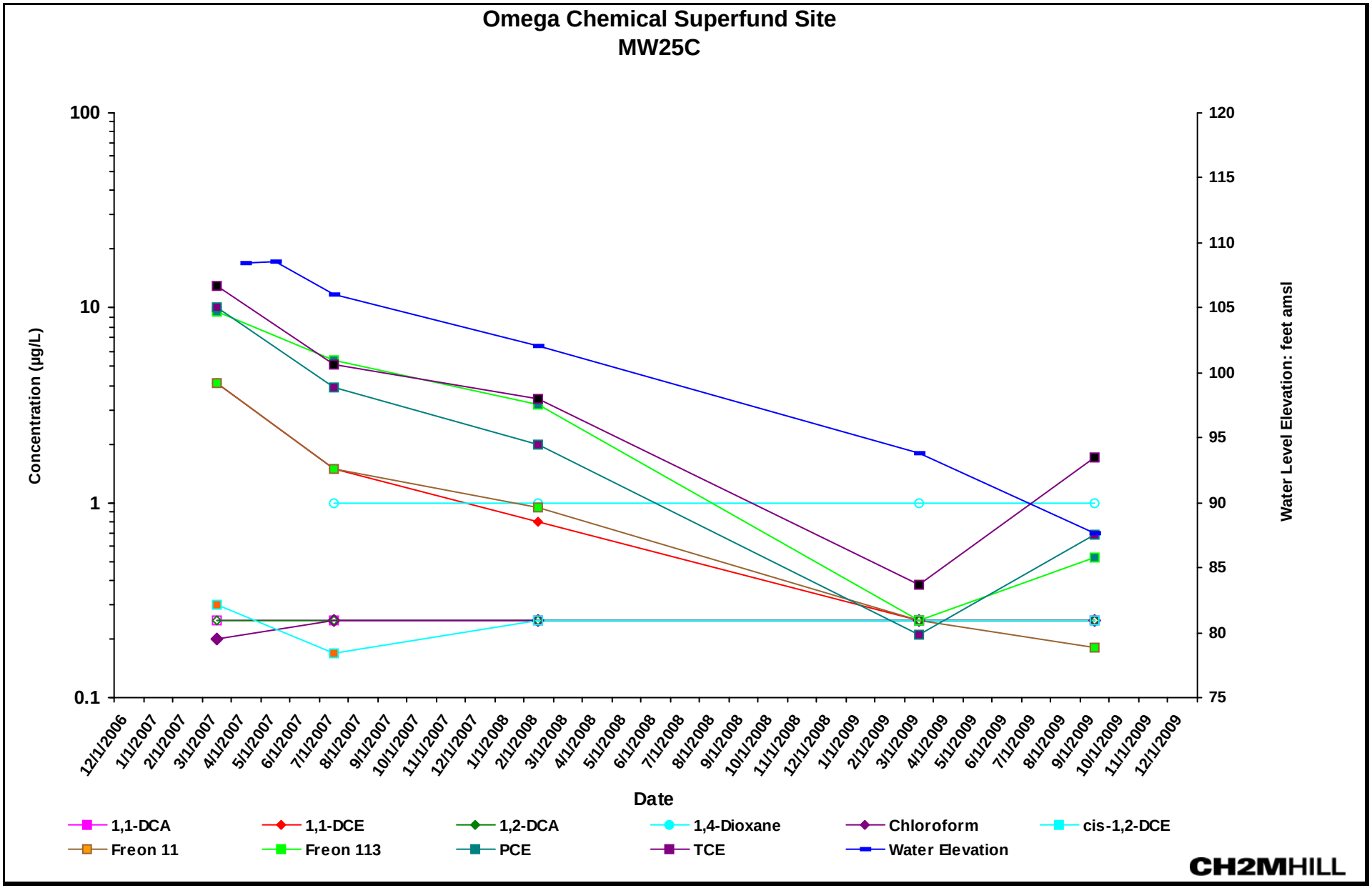
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



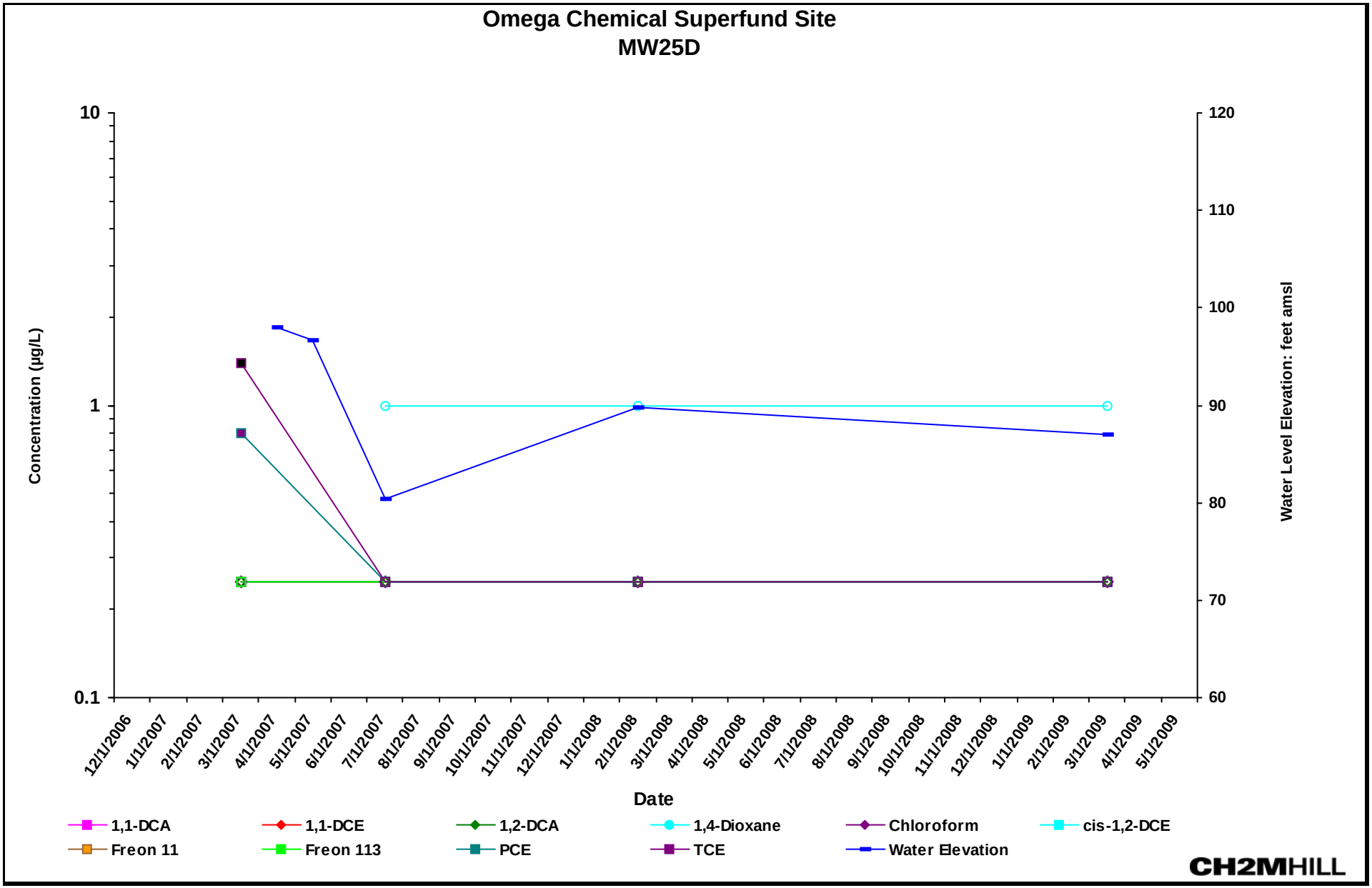
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



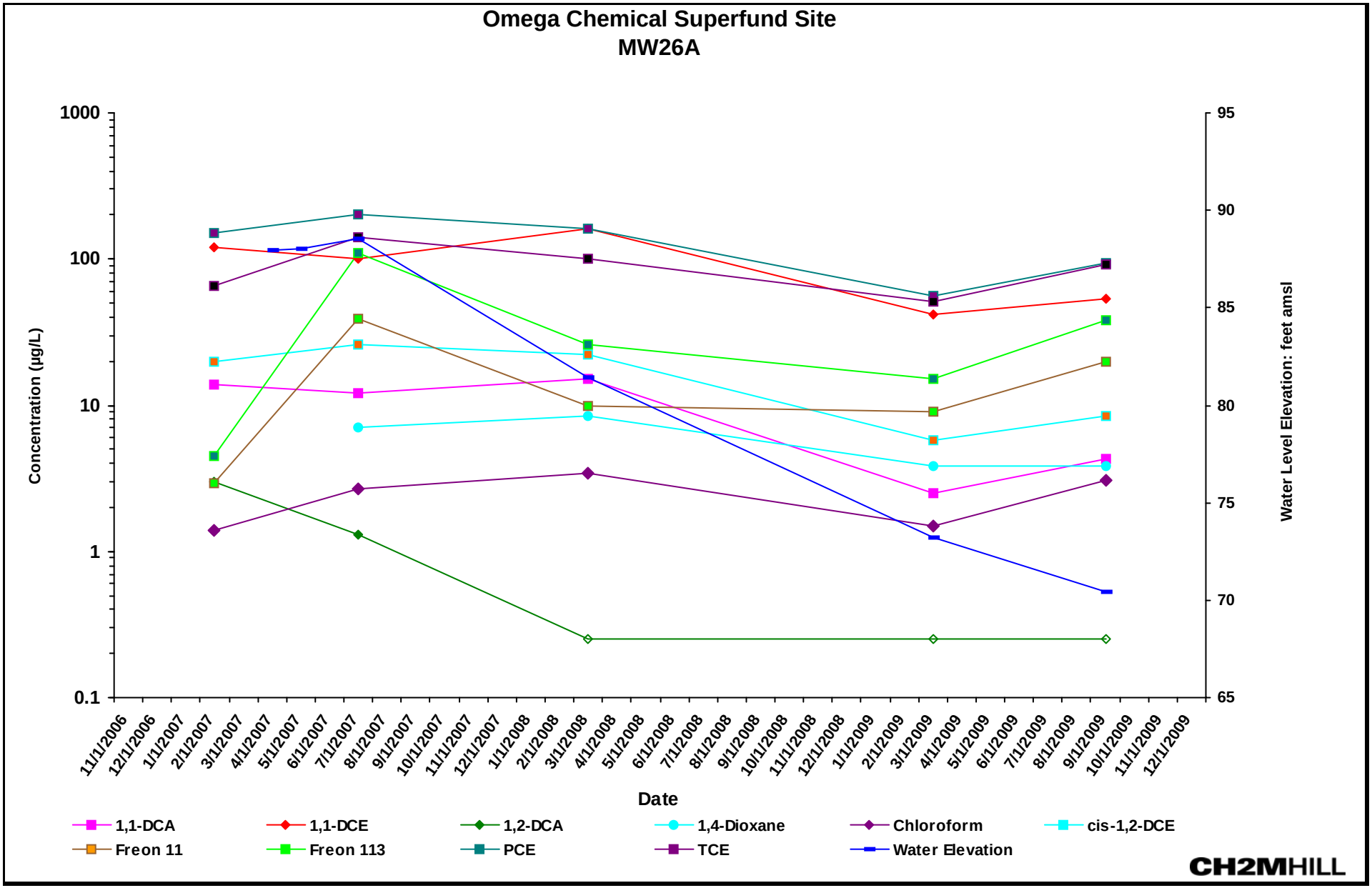
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



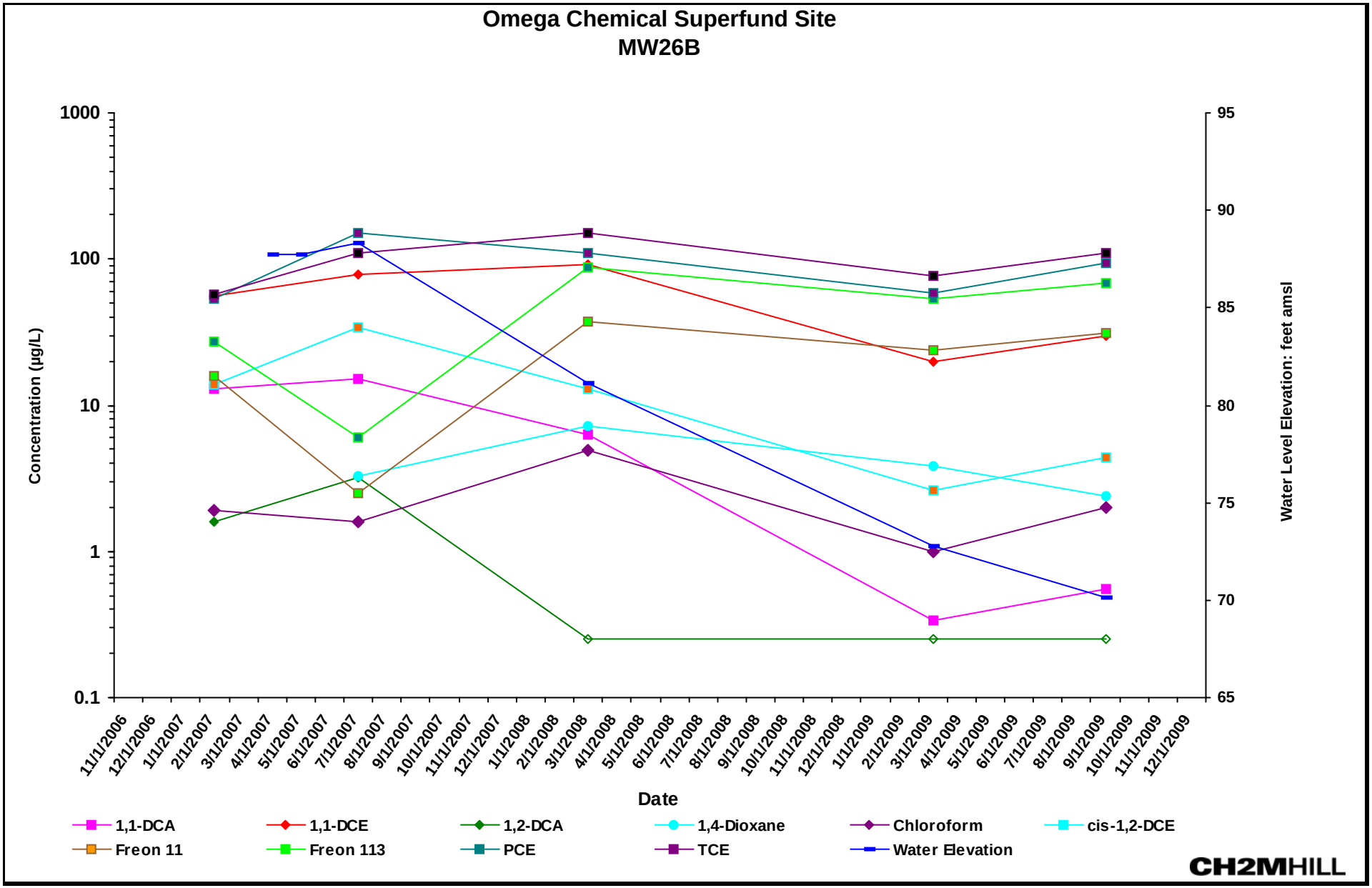
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



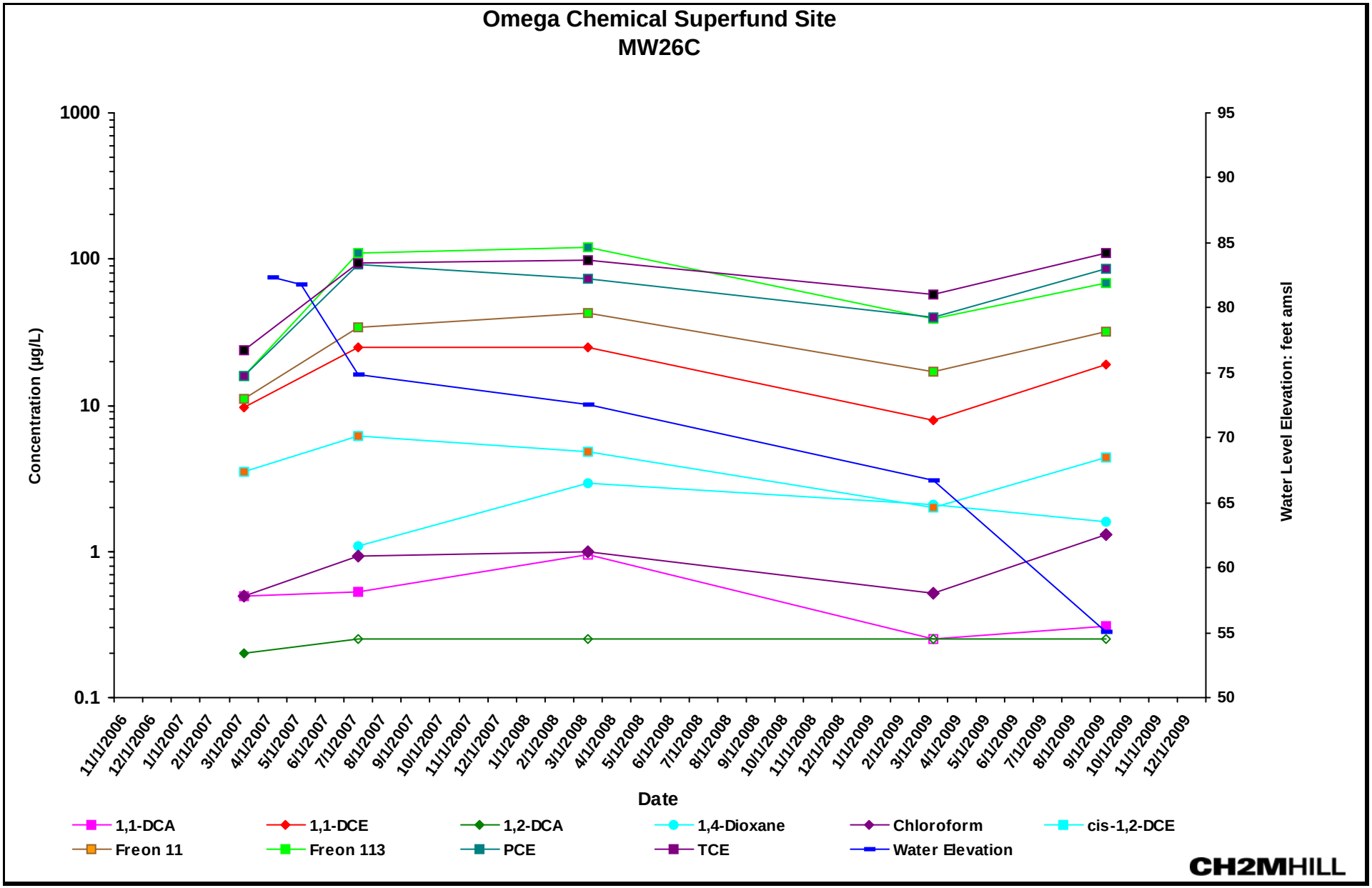
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



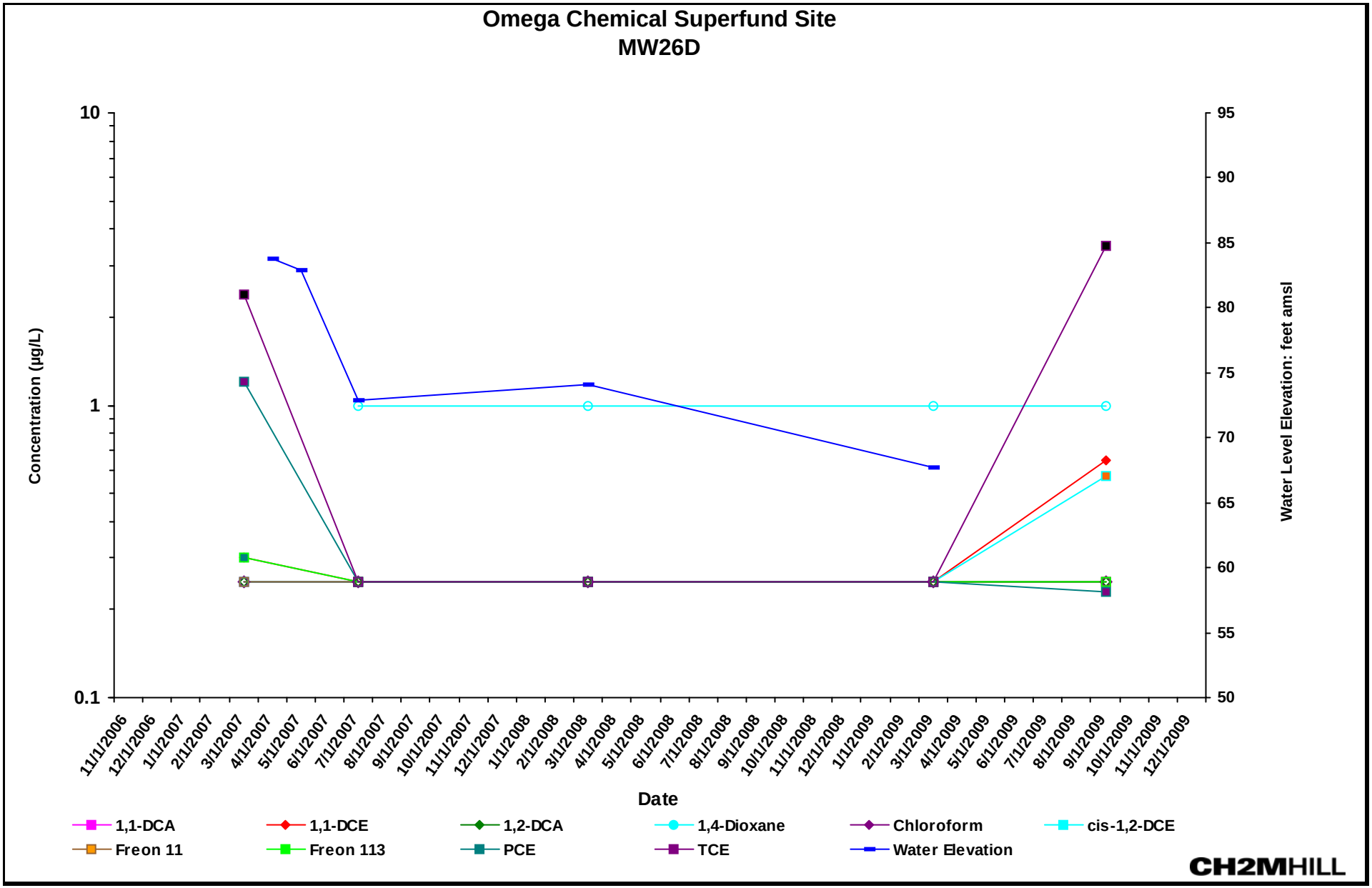
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



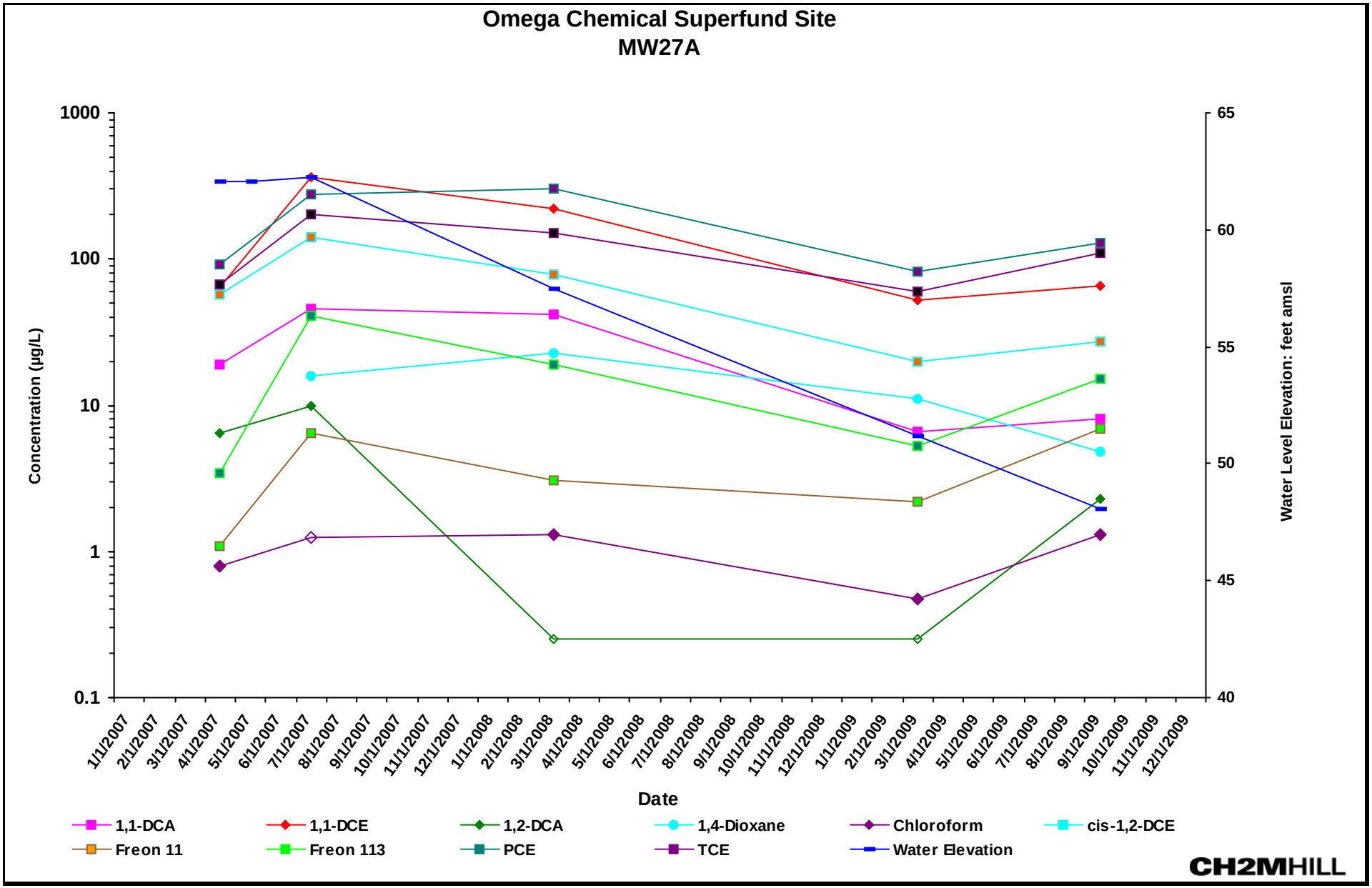
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



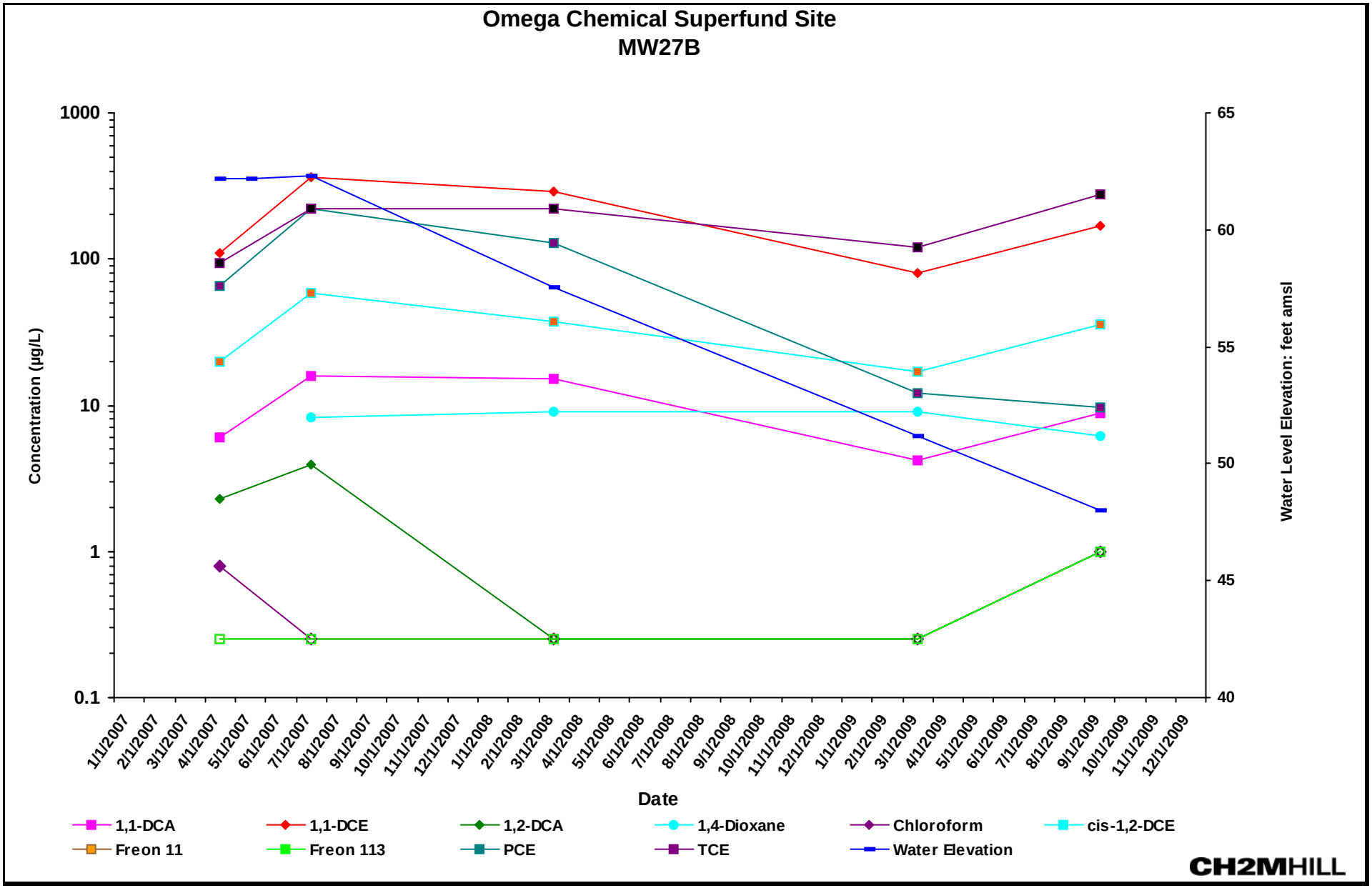
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



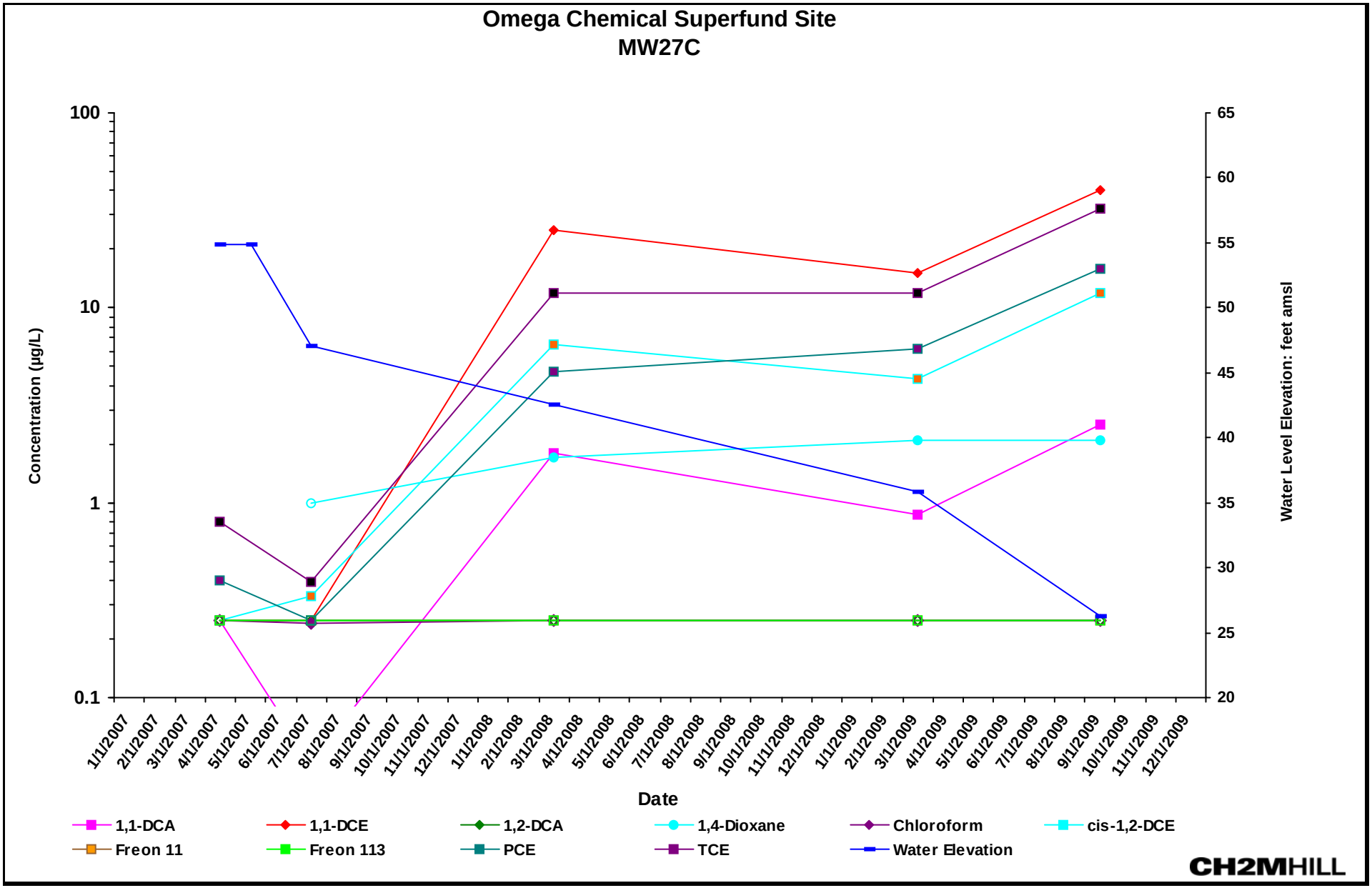
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



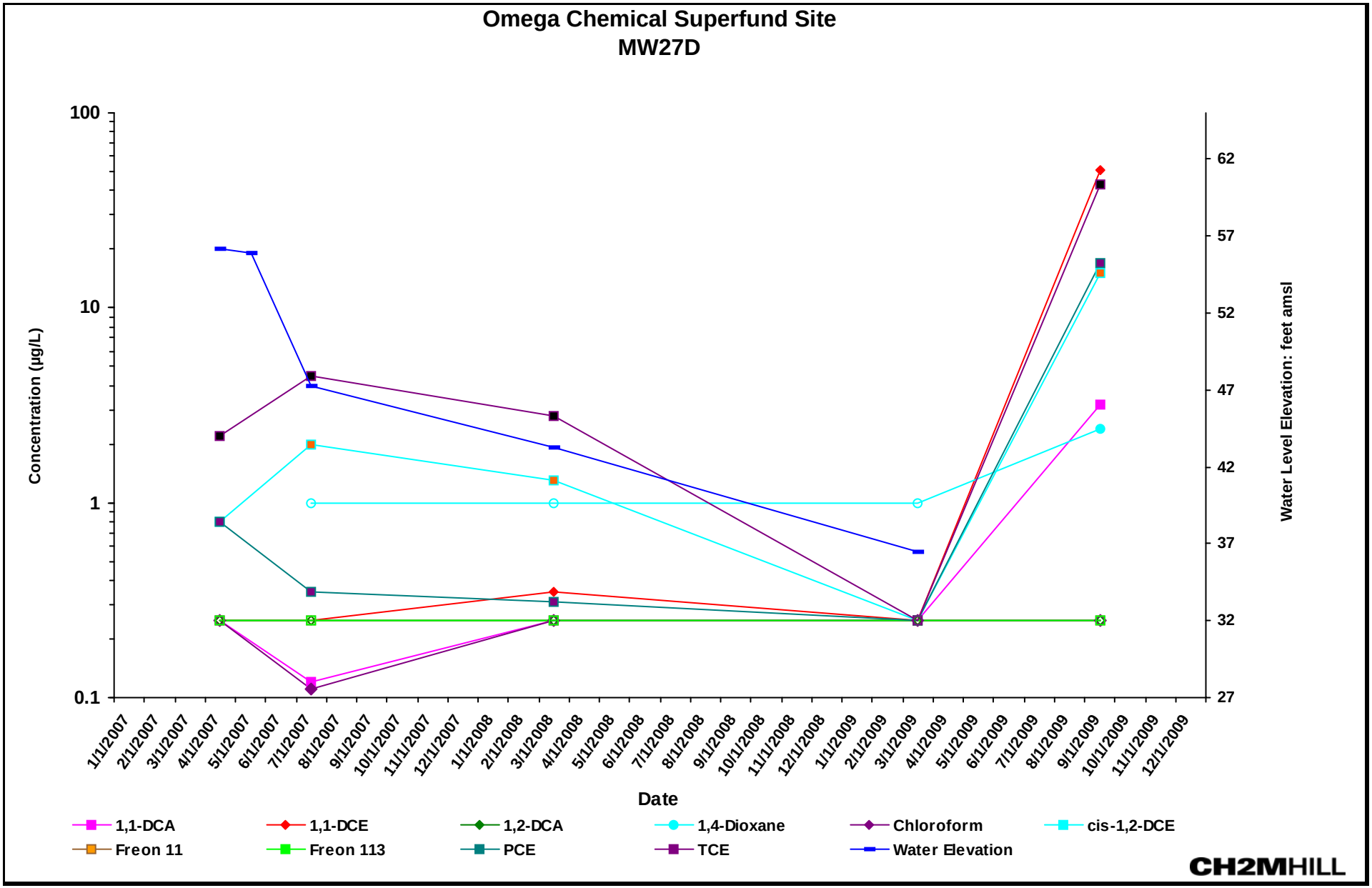
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



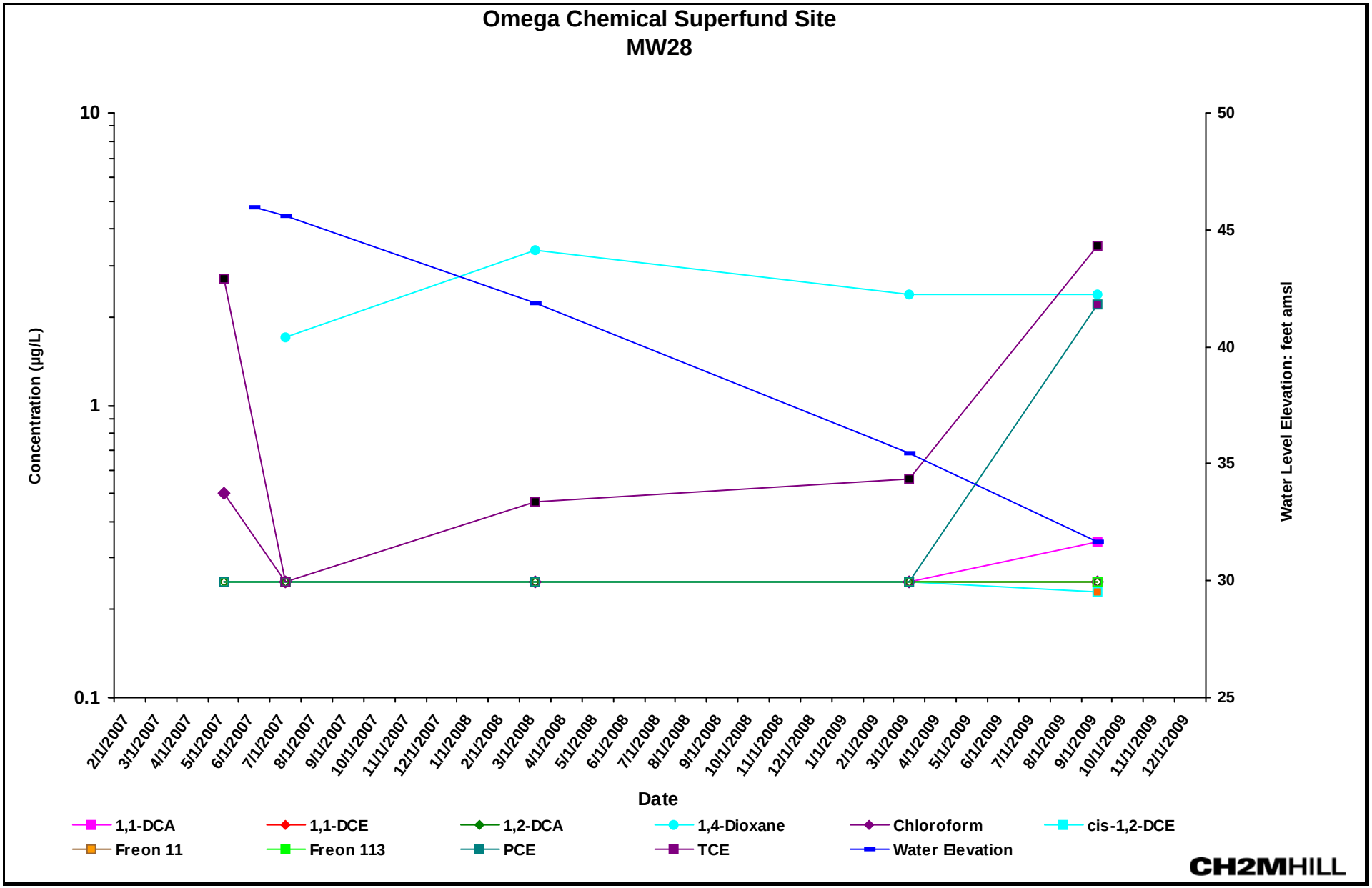
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

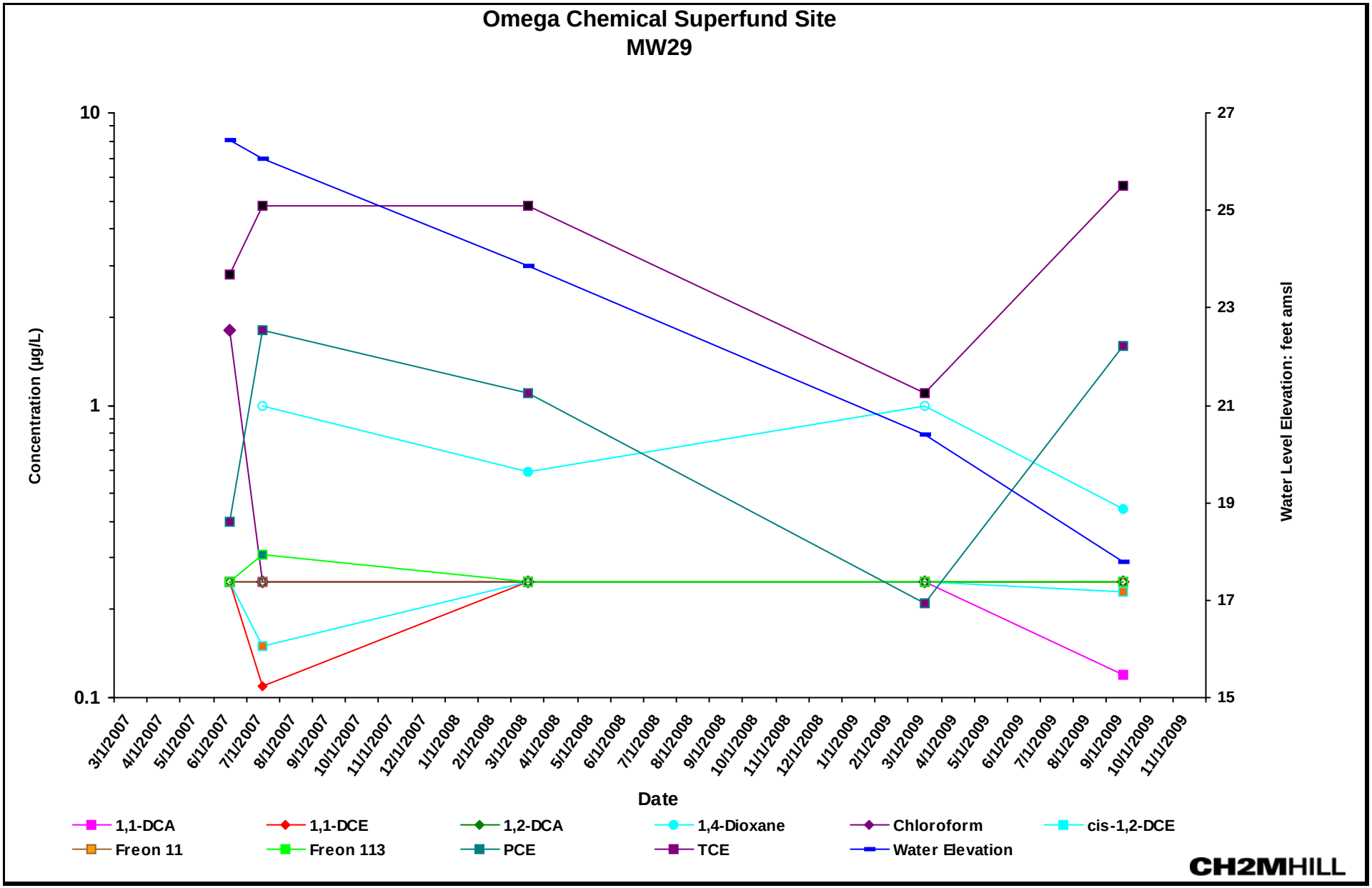


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

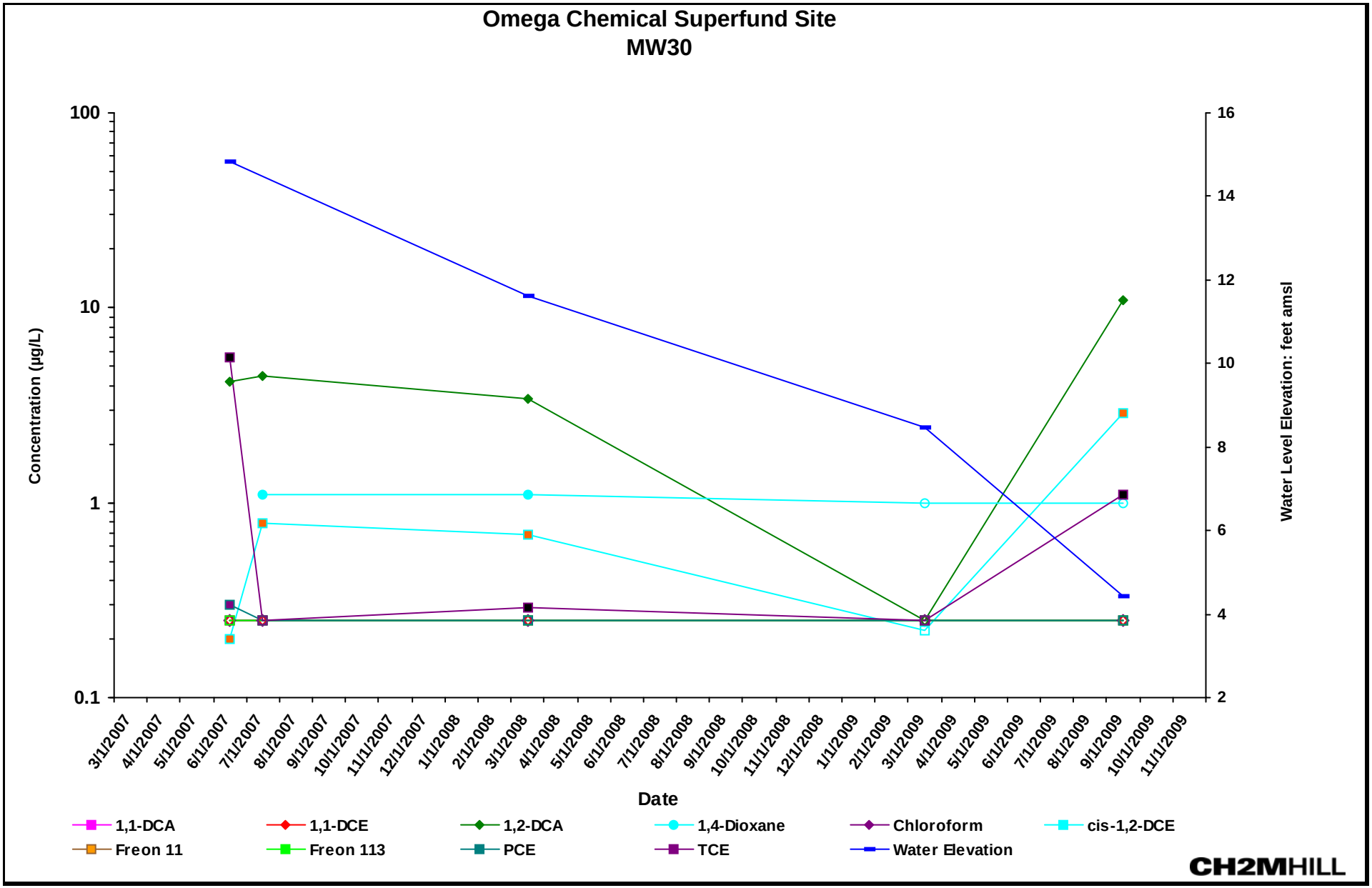


Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



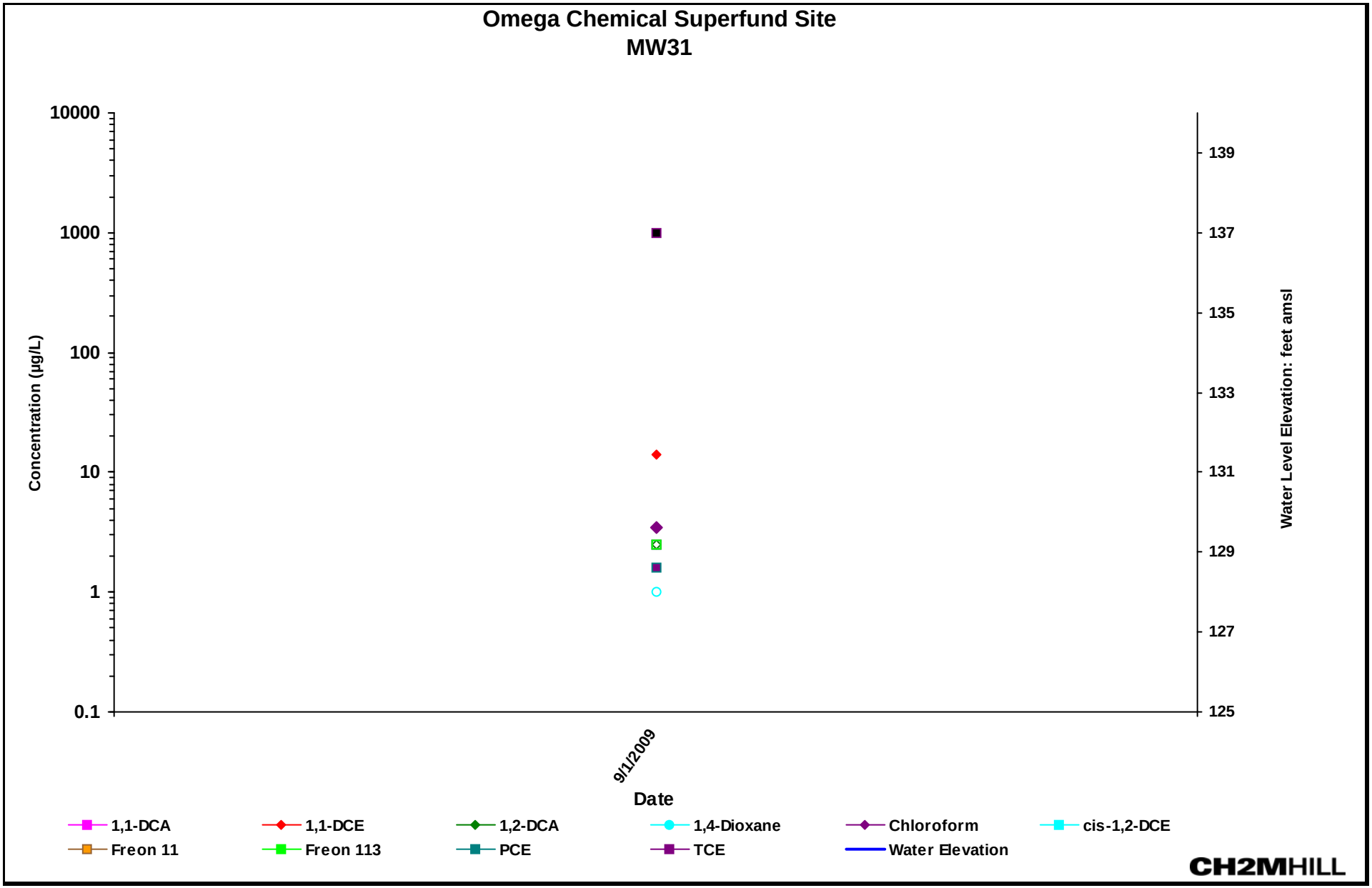
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

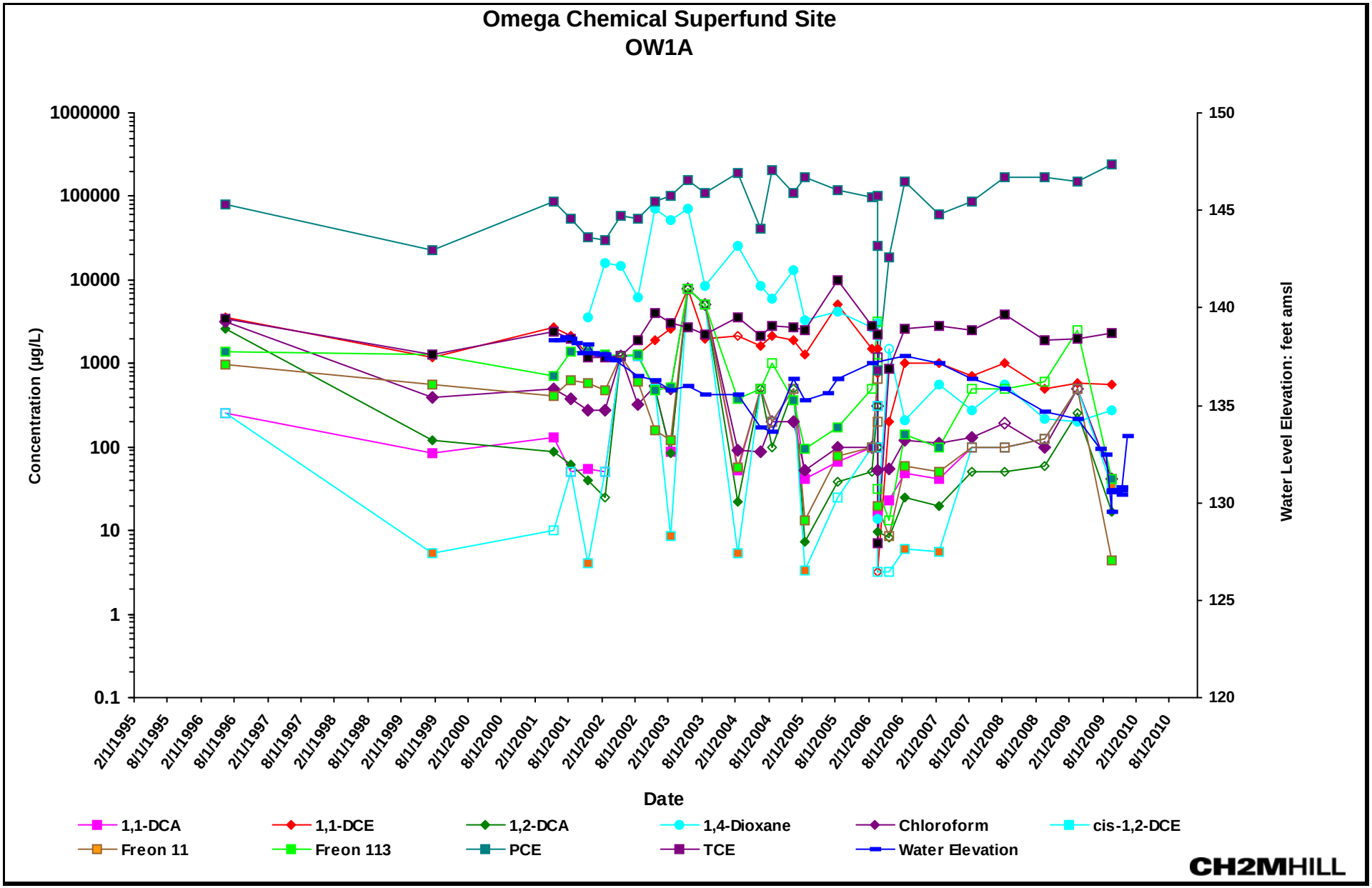


Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

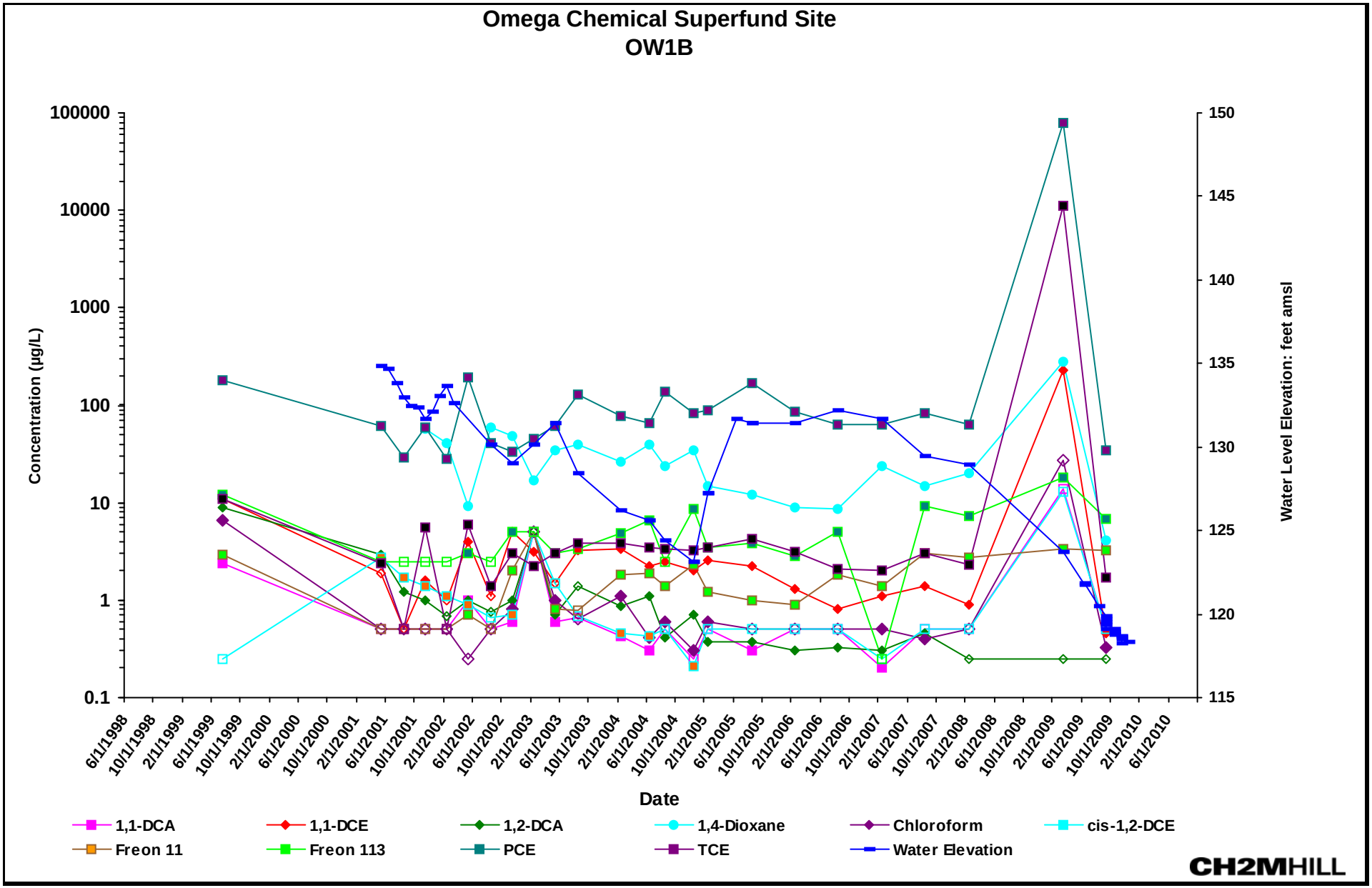


Notes:
1,1-DCA: 1,1-Dichloroethane
1,1-DCE: 1,1-Dichloroethene
1,2-DCA: 1,2-Dichloroethane
1,4-Dioxane: 1,4-Dioxane (p-dioxane)
cis-1,2-DCE: cis-1,2-Dichloroethene
Freon 11: Trichlorofluoromethane
Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane
PCE: Tetrachloroethene
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



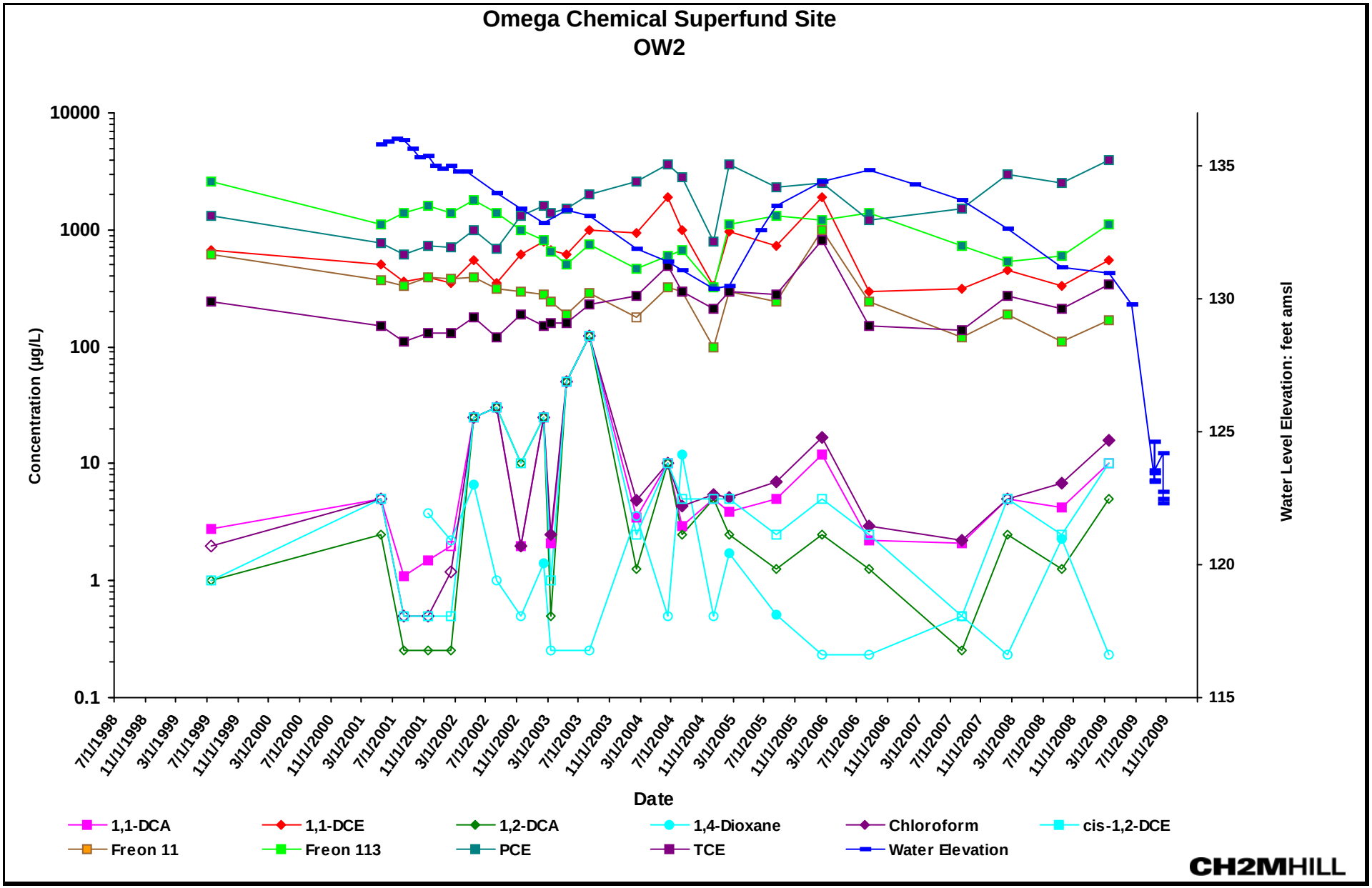
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



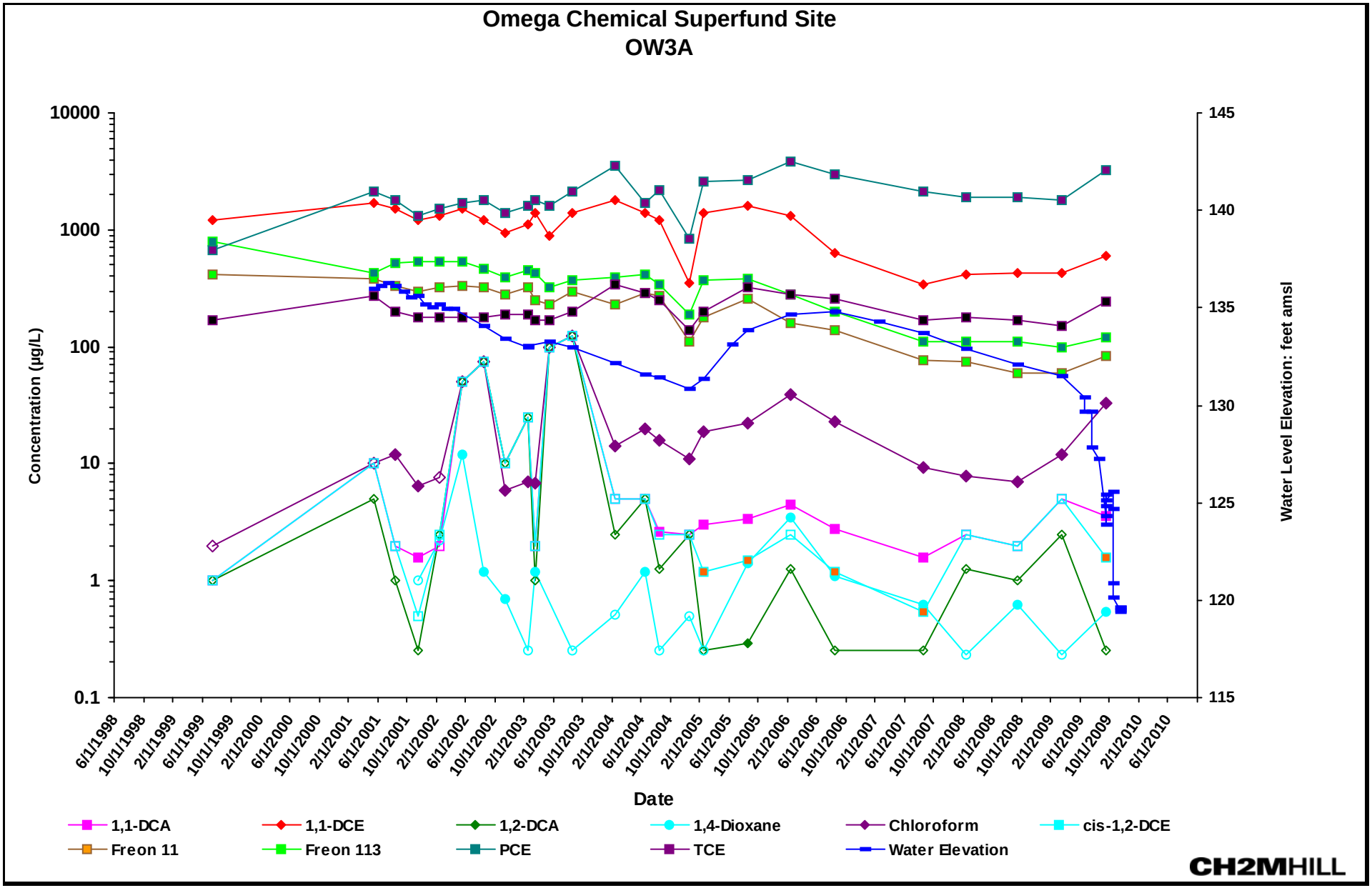
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



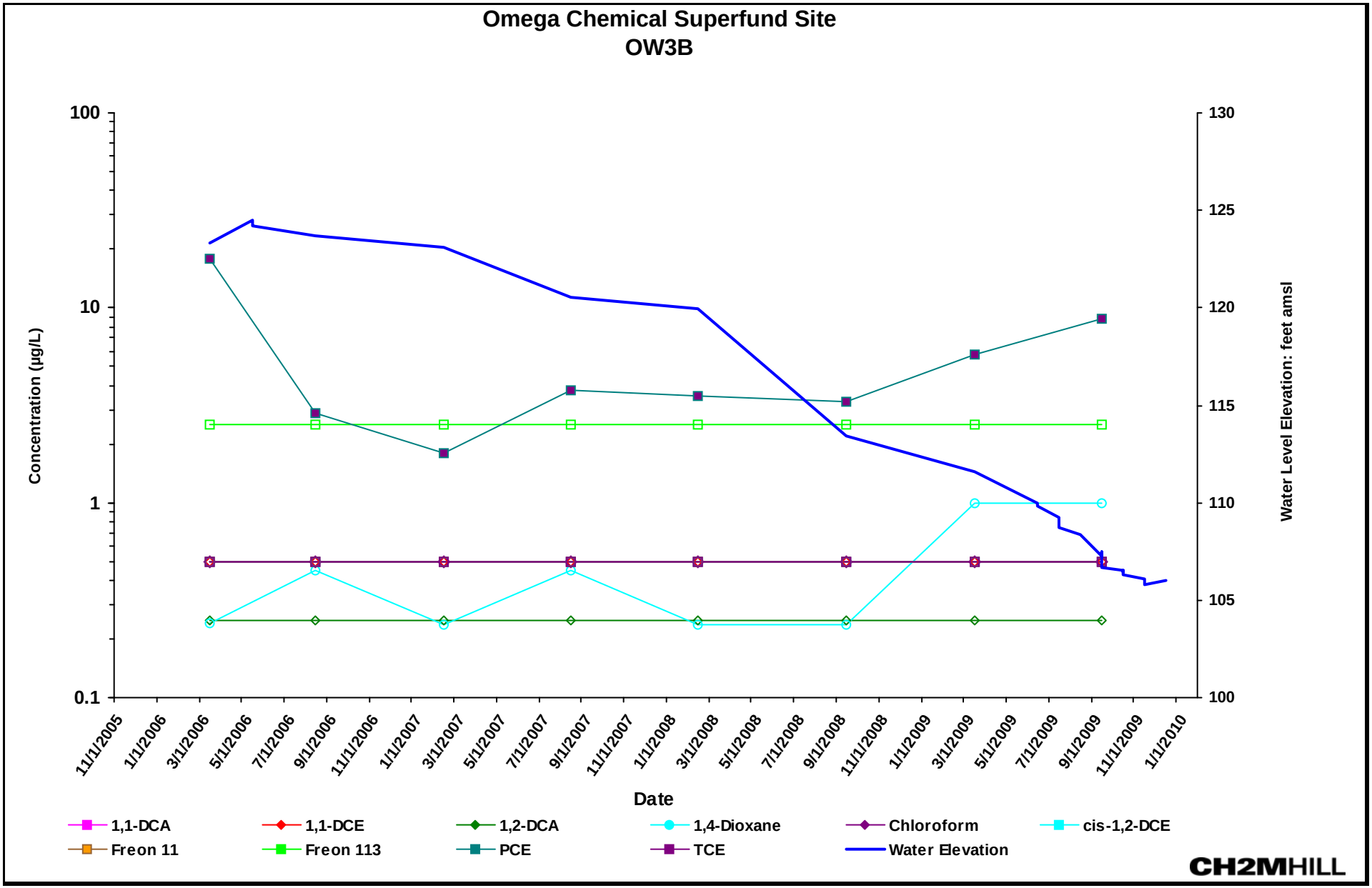
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



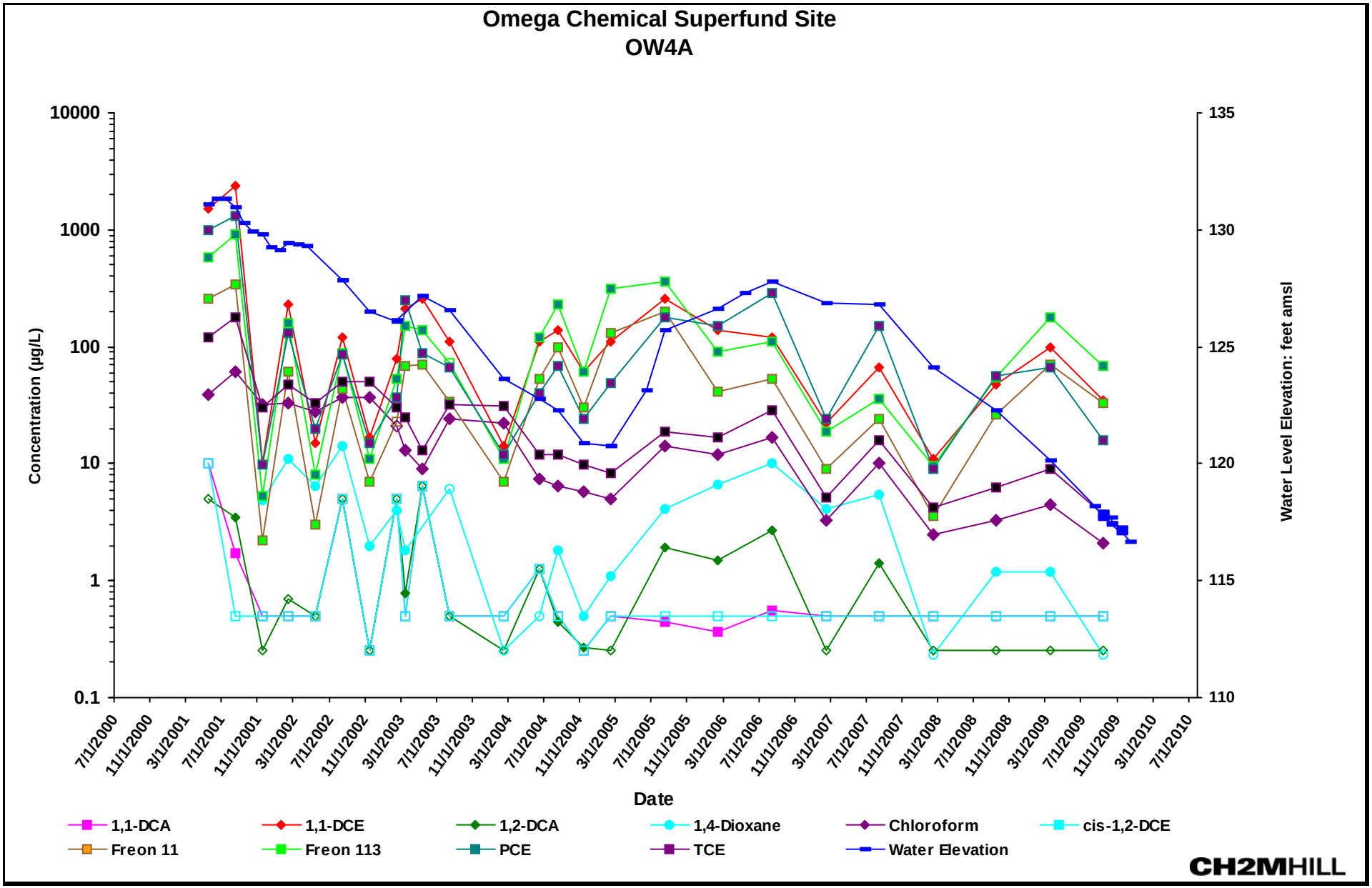
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



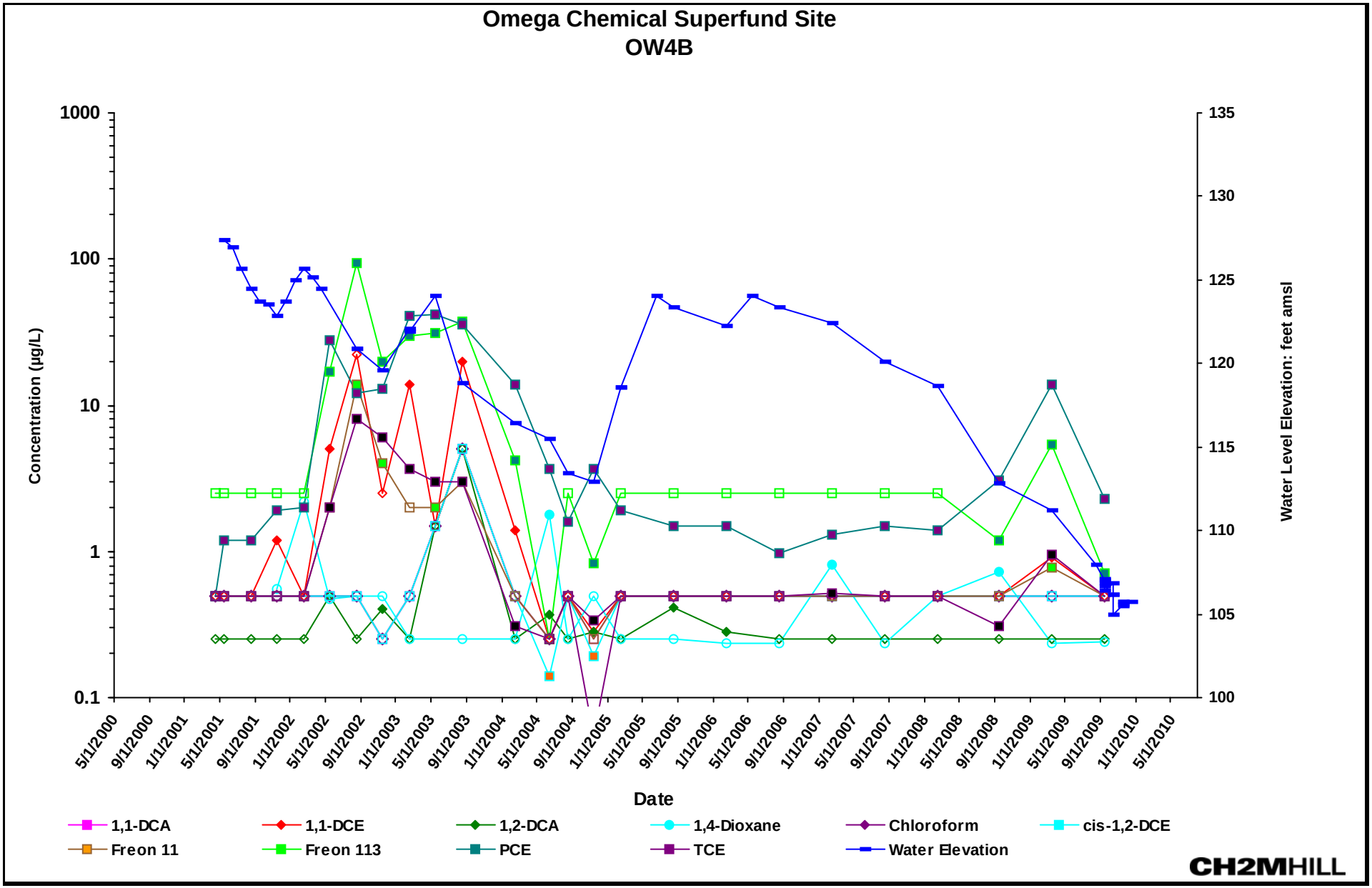
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



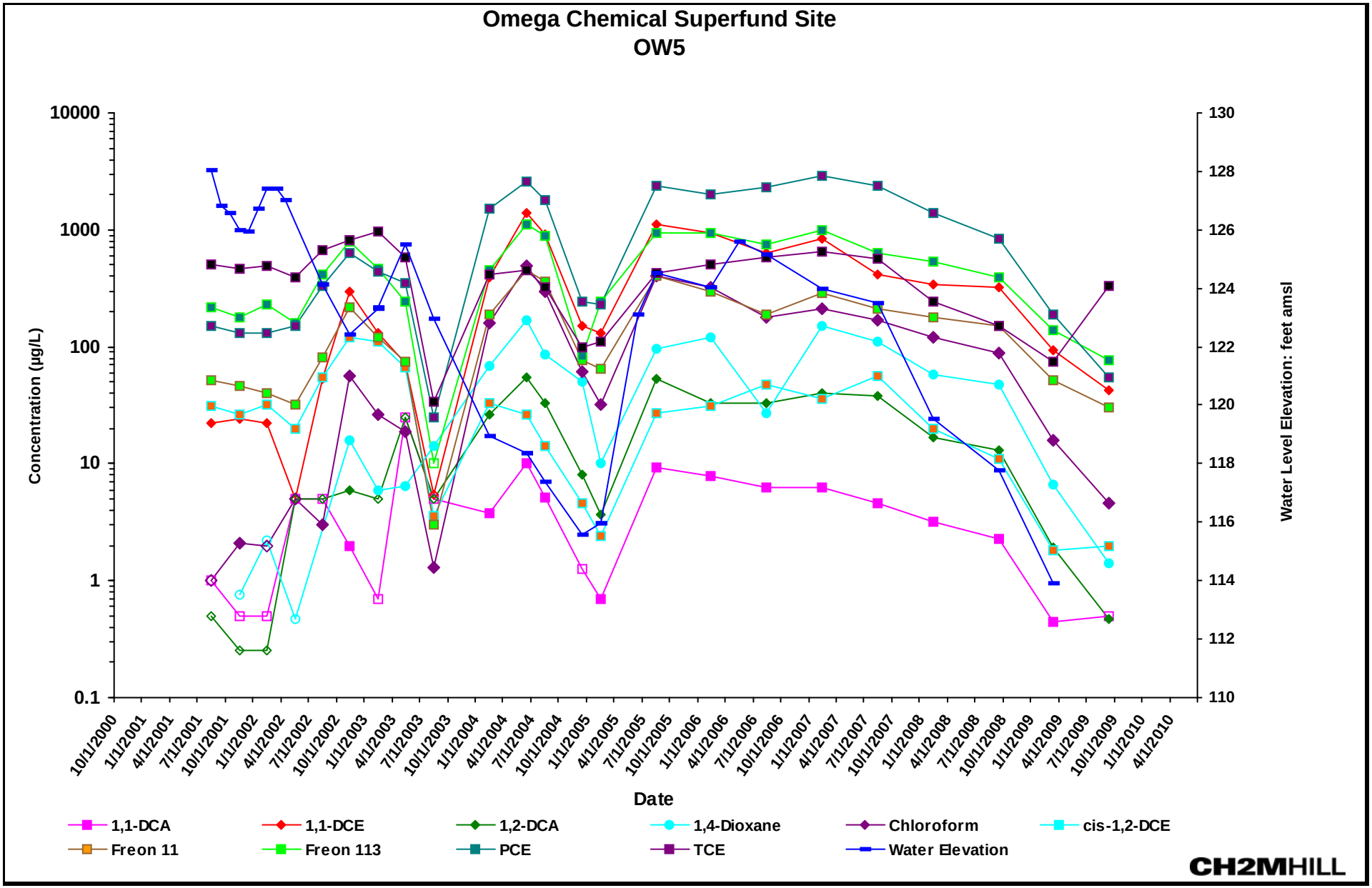
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



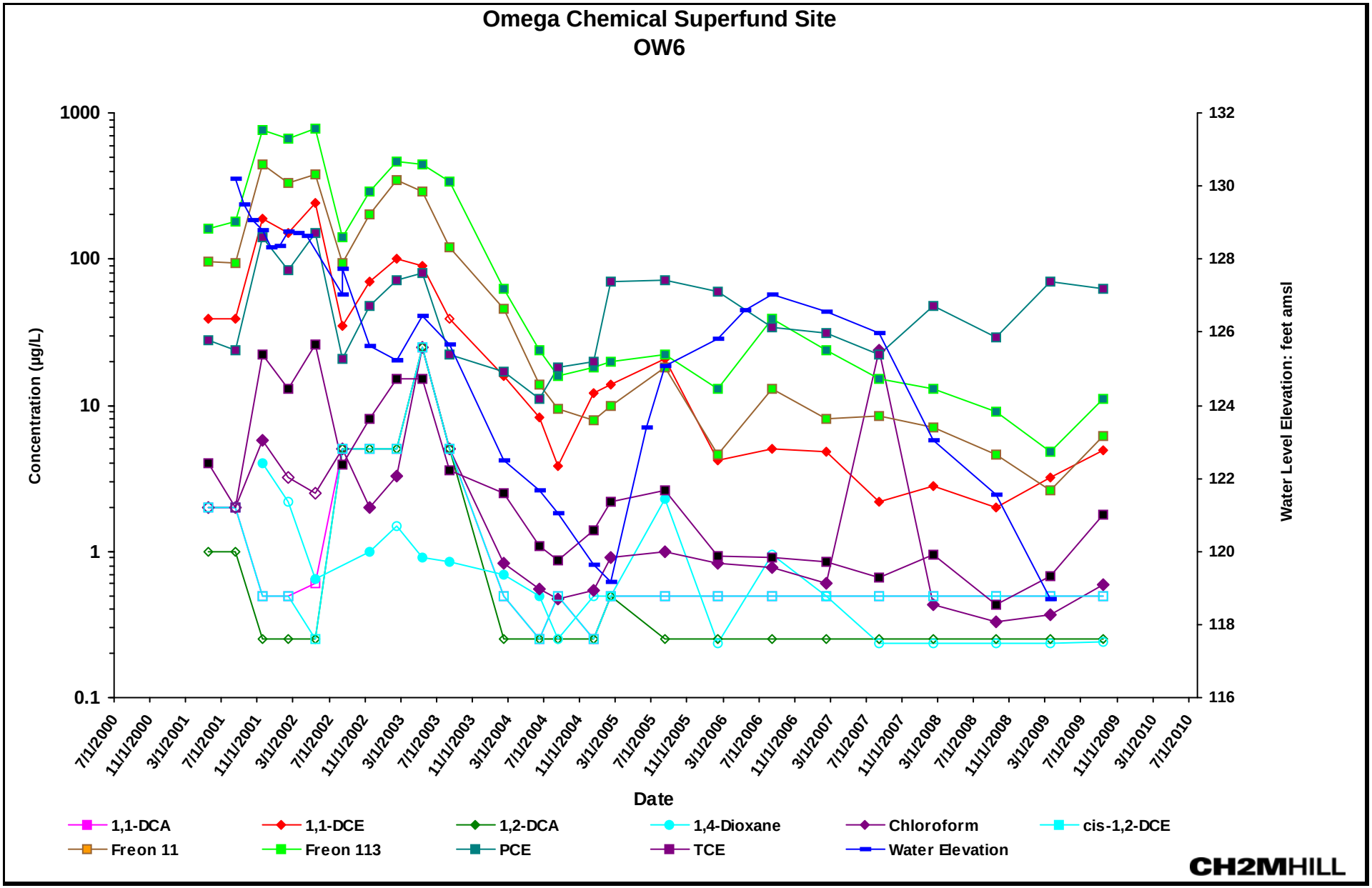
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



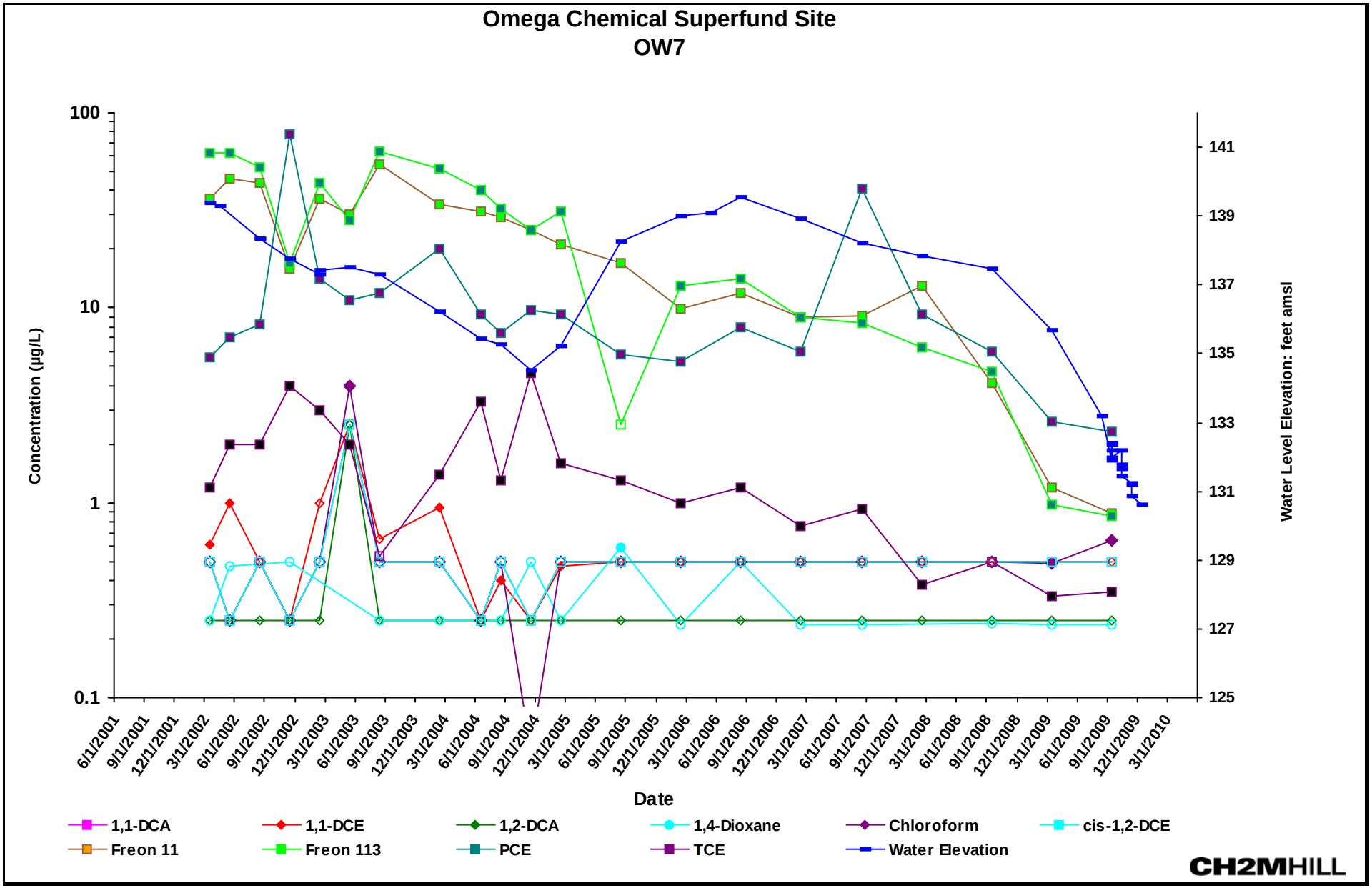
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



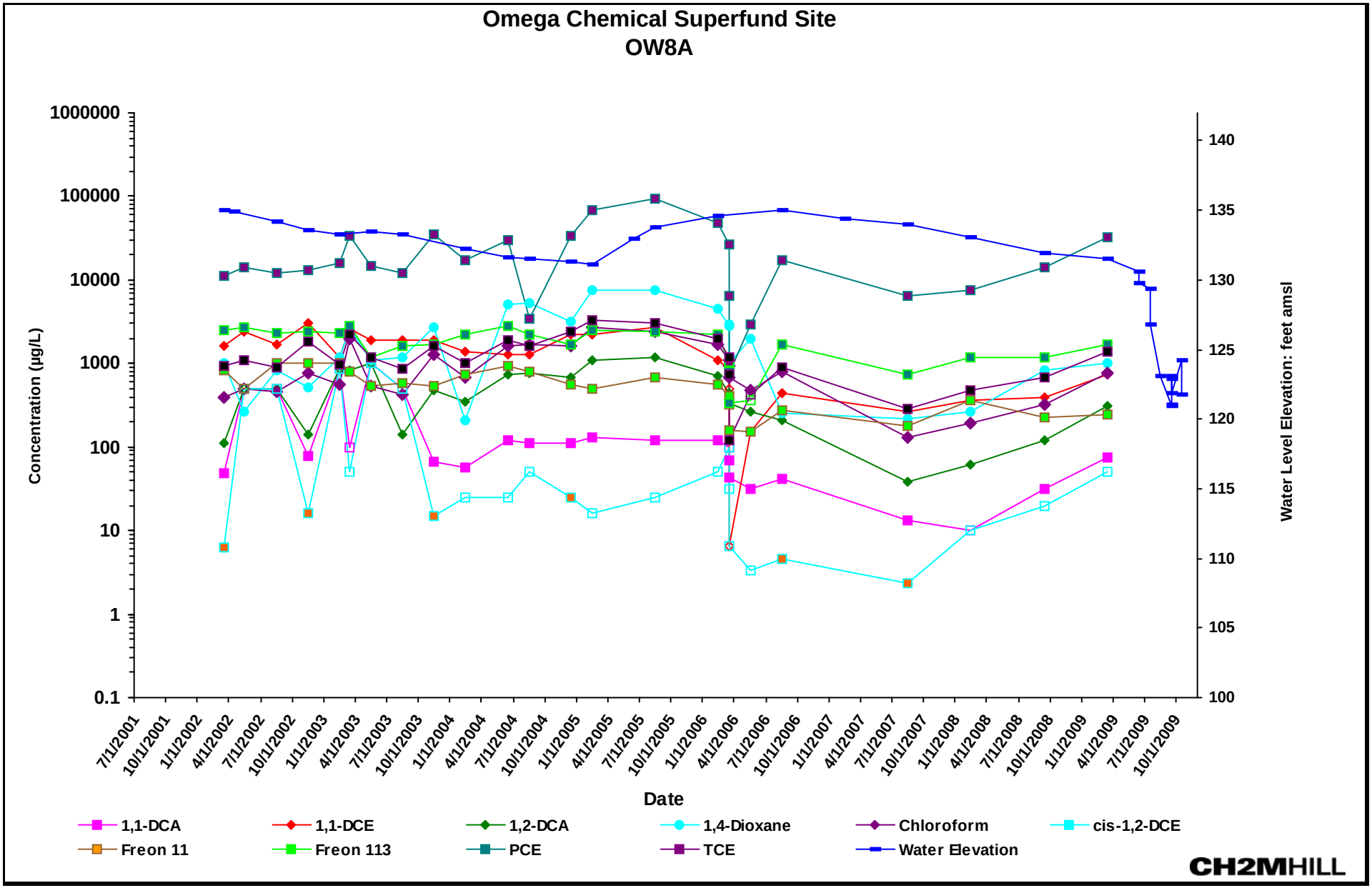
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



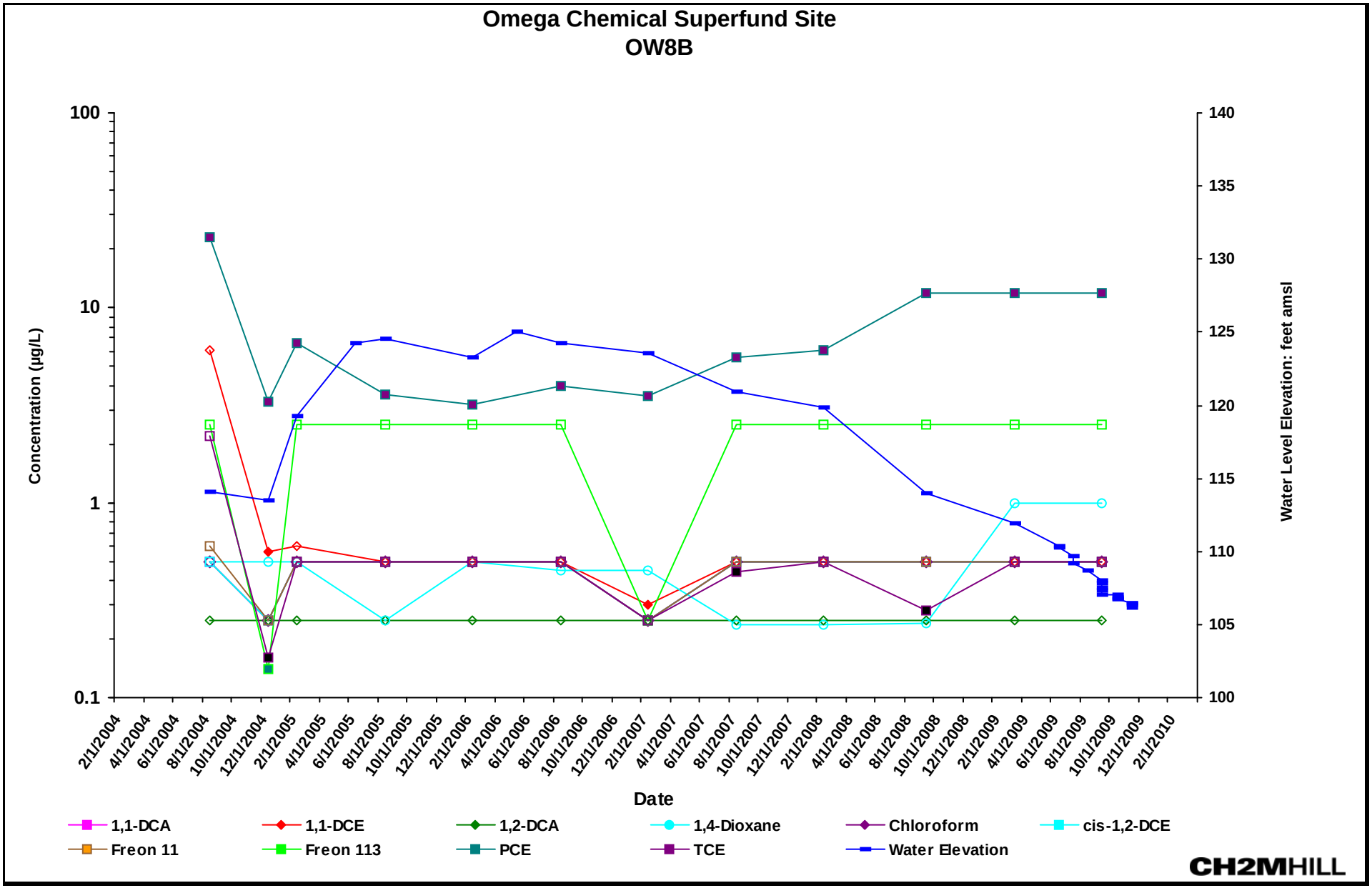
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



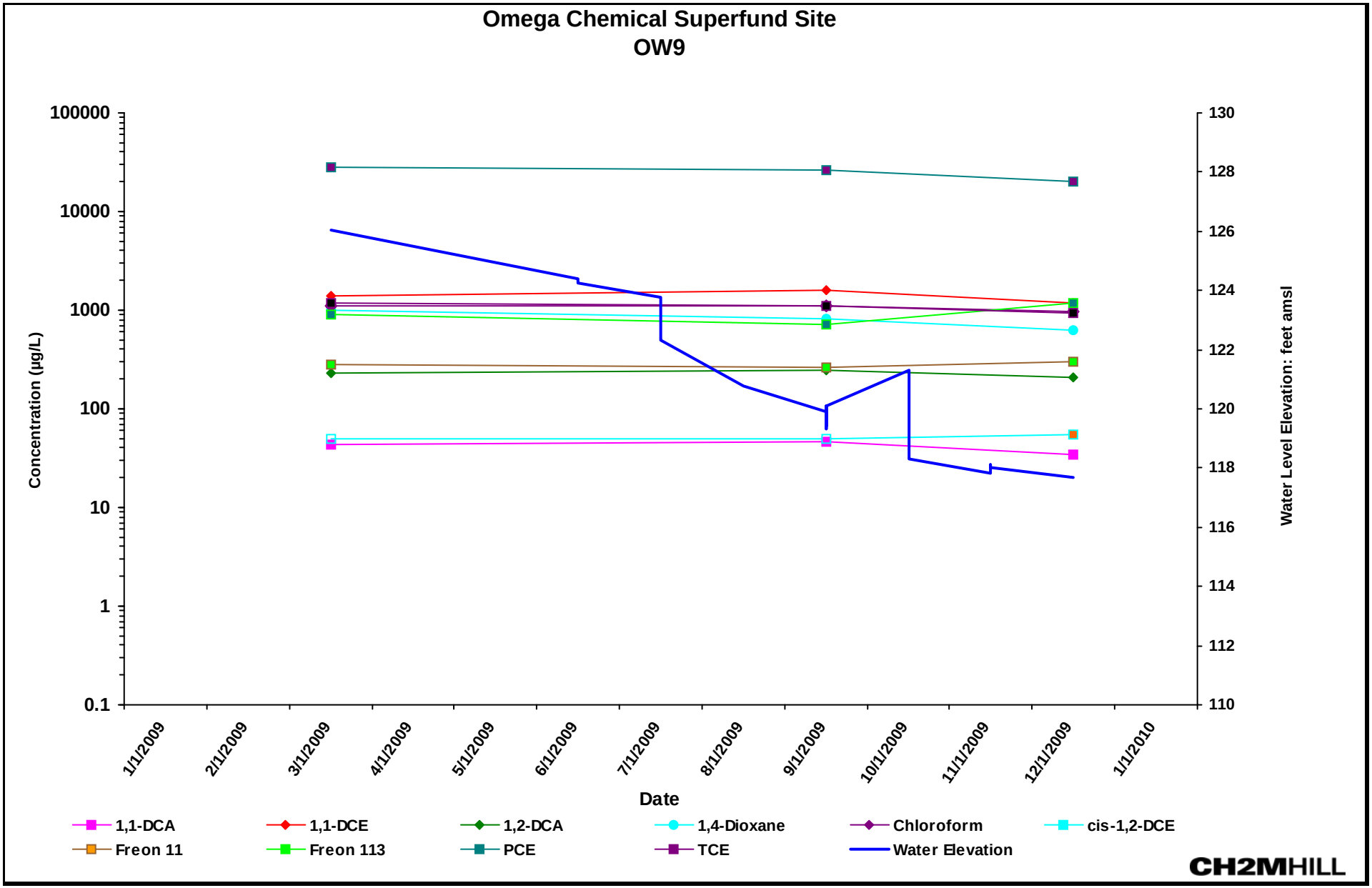
Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:

1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
cis-1,2-DCE: cis-1,2-Dichloroethene **Freon 11: Trichlorofluoromethane** **Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane** **PCE: Tetrachloroethene**
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:
1,1-DCA: 1,1-Dichloroethane **1,1-DCE: 1,1-Dichloroethene** **1,2-DCA: 1,2-Dichloroethane** **1,4-Dioxane: 1,4-Dioxane (p-dioxane)**
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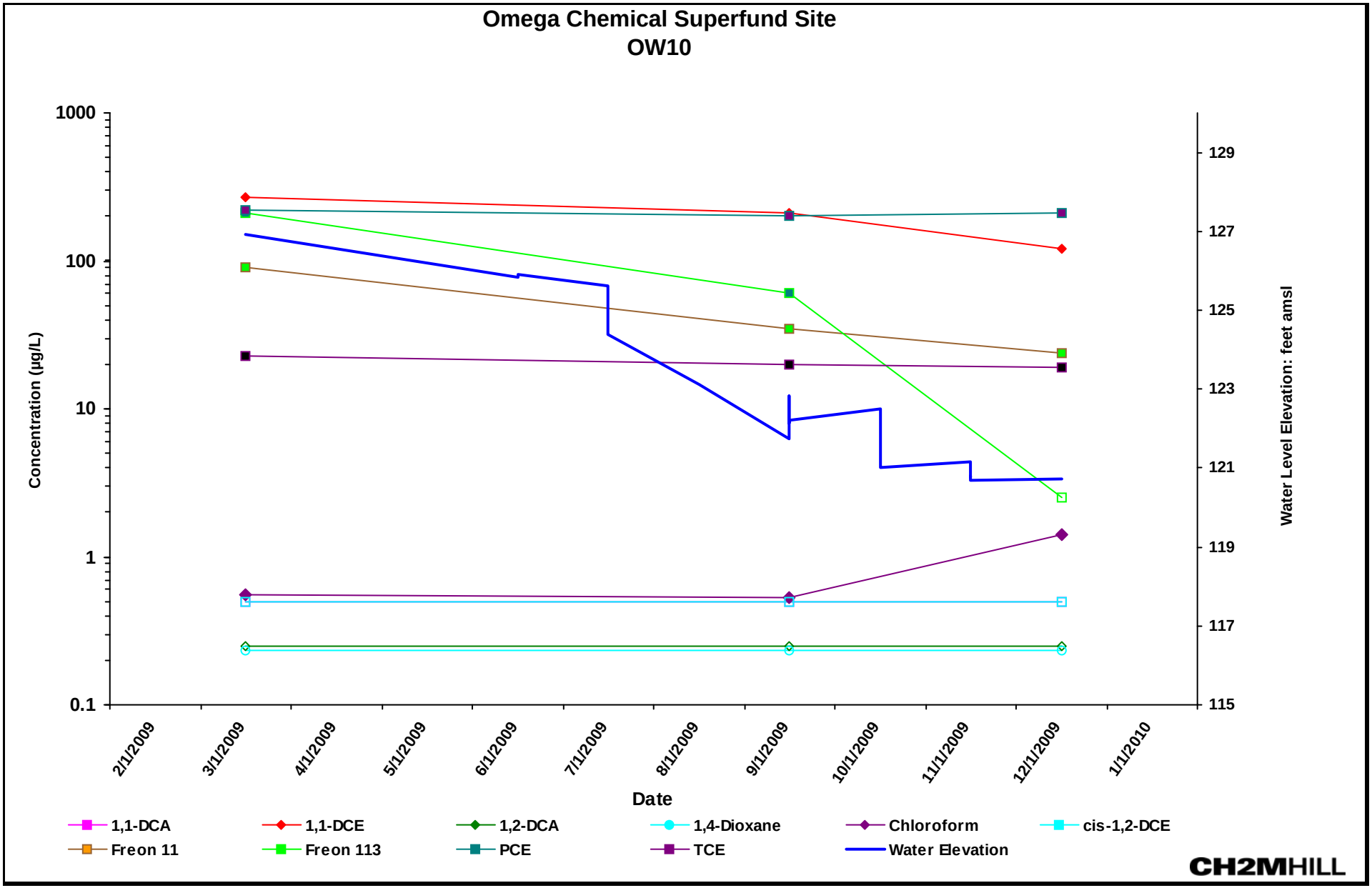
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations



Notes:
1,1-DCA: 1,1-Dichloroethane
1,1-DCE: 1,1-Dichloroethene
1,2-DCA: 1,2-Dichloroethane
1,4-Dioxane: 1,4-Dioxane (p-dioxane)
cis-1,2-DCE: cis-1,2-Dichloroethene
Freon 11: Trichlorofluoromethane
Freon 113: 1,1,2-Trichloro-1,2,2-trifluoroethane
PCE: Tetrachloroethene
TCE: Trichloroethene
Open symbol indicates reporting limit for non-detected concentrations

Appendix H
Statistical Plots

Appendix H
Freon Ratios

The ratios of concentrations of Freon 113 (F113) and Freon 11 (F11) were evaluated to identify indications of potential sources of Freons other than the former Omega facility.

Both F11 and F113 are stable compounds that do not degrade in groundwater. Their sorption characteristics are similar and, furthermore, sorption is not substantial in the sandy aquifer materials present at OU2. These characteristics support the expectation of a (relatively) constant F113/F11 ratio in a plume resulting from a single source at OU2. The ratio of their concentrations would be expected to remain constant in the absence of sampling, analytical, and any other variation.

It can be reasonably expected that the source at Omega OU1 is well-mixed and the Freon ratio at OU1 was fairly uniform over time as a result of the release of mixed waste into soil. If there is another substantial source of either F11 or F113 somewhere at OU2 downgradient from OU1, the ratio of F113/F11 in groundwater is expected to be different downgradient of that source. A source of both F11 and F113 but with a different mix than those at OU1 would have a similar effect.

Table 3-4 in Section 3 of the main text summarizes the statistics for the F113/F11 ratios calculated for each well using the entire historical record (with nondetects removed). Wells with insufficient records (for example, MW31, MW30, and MW29) are not included in the table.

Analysis of the J-qualified and unqualified Freon ratios (total data count N=788) provided the following results:

- Parametric and non-parametric ANOVA tests indicate statistically significant differences in ratios among well locations.
- Box-plots included in this appendix corroborate the differences. Sorting by median values shows which wells are particularly different.

The main limitations to this analysis are:

- Inclusion of the J values was assessed for its potential effect. A box-plot compares the ratios over the paired qualifiers: Q1*Q2 where Q1 is the F113 qualifier and Q2 is the F11 qualifier. Possible combinations and record counts include: DD [N=646]; DJ [N=39]; JD [N=43]; JJ [N=61]. The results suggest that the J-qualified F11 results exhibit wider variability than the J-qualified F113 results; however, this is a soft conclusion given the overall variability of the results.
- Record counts (that is, the number of data points) differ widely among the wells. The counts themselves are not so much the issue; rather, the different lengths of monitoring records for some wells may affect the representativeness of the results (the lengths of records depend on the time of the well installation, which varies from 1996 to 2009). As the monitoring at OU2 continues, eventually it will be possible to use the same record length for each well.

The limitations specifically related to using ratios of concentrations are briefly explained as follows:

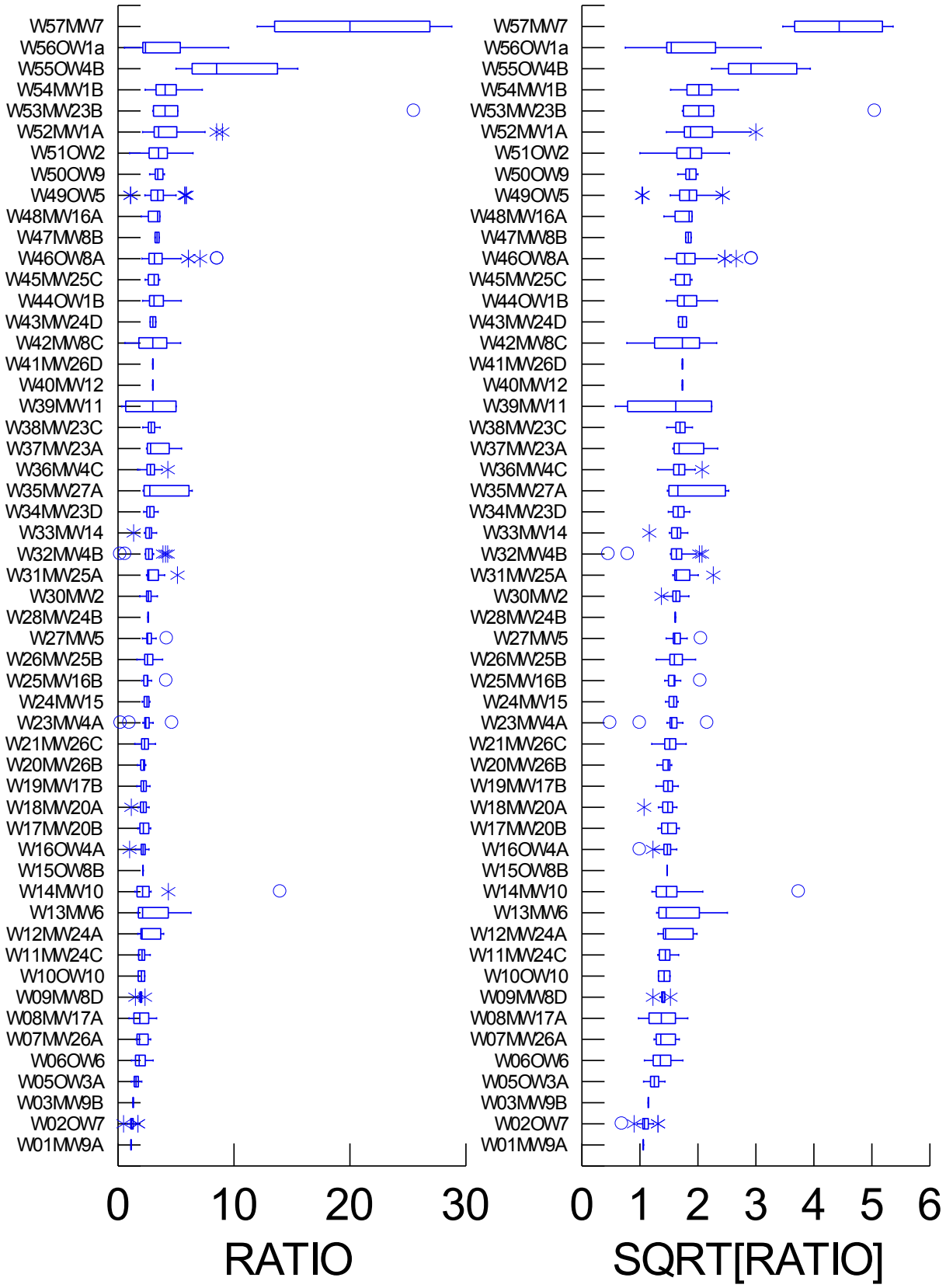
- The accuracy of a ratio is comparatively lower given measurement uncertainties in the quantification of both F113 and F11 concentrations. For example, if 15 µg/L can truly represent concentrations between 12 and 18, a ratio of 1 (F113 and F11 concentrations both reported at 15) means the ratio could actually be as low as 0.67 and as high as 1.5. That is not accounted for in the presented evaluation but is clearly a generic problem in the use of ratios.
- The potential relationship of a ratio to the magnitude of the concentrations is also not accounted for above. If the laboratory method accuracy and precision vary as a function of concentration, the ratios are not independent of concentration.
- Ratios often give rise to unusual distributions (non-normal). Ratios of concentrations, which are typically not normally distributed, are expected to be non-normal.

The median ratios calculated from historical concentration data are shown in Figure 3-12 in the main text of this report. The spatial pattern does not indicate clustering or trends in the ratios over OU2. The variability in the ratios may be entirely attributable to the limitations listed above.

The ratios fall within a narrow range of 1.1 to 4.1 except for wells MW7 (20), OW1A (9.5), and OW4B (8.5). MW7 is located at the plume margin and its median ratio may be considered an outlier as a result of low and J-qualified F11 concentrations. Similarly, the high ratios at OW4B are related to the low and J-qualified F11 concentrations (also noting that only two records are available). It is unlikely that another source of Freons is affecting only OW4B without affecting the shallower cluster well OW4A (ratio of 2.1). The high ratios for OW1A may be related to analytical results affected by high sample dilutions. This seems to be a likely explanation, considering the much lower ratio (3.1) at the nearby OU1 well OW1B, which is deeper and has much lower VOC concentrations.

The narrow ratio range for the remaining wells seems to be indicative of Omega OU1 being a single source of the two Freons at OU2. However, it is noted that because of the limitations of this analysis, only a substantial change in the F113/F11 ratio resulting from a substantial release of Freon(s) to groundwater could be detected.

Box Plots for Freon Concentration Ratios (Freon 113/Freon 11)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W45MW25C
W44OW1B
W43MW24D
W42MW8C
W41MW26D
W40MW12
W39MW11
W38MW23C
W37MW23A
W36MW4C
W35MW27A
W34MW23D
W33MW14
W32MW4B
W31MW25A
W30MW2
W28MW24B
W27MW5
W26MW25B
W25MW16B
W24MW15
W23MW4A
W21MW26C
W20MW26B
W19MW17B
W18MW20A
W17MW20B
W16OW4A
W15OW8B
W14MW10
W13MW6
W12MW24A
W11MW24C
W10OW10
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W07MW26A
W06OW6
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RATIO
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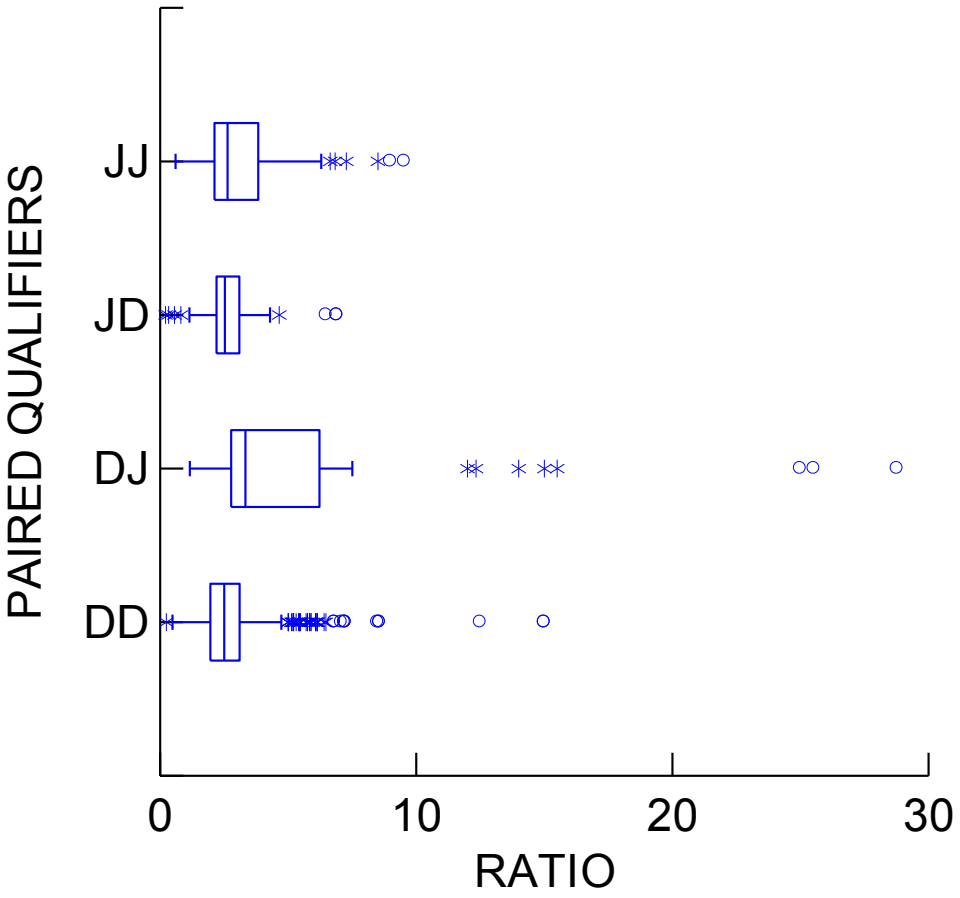
2
3
4
5
6
SQRT[RATIO]


PAIRED QUALIFIERS
JJ
JD
DJ
DD
0
10
20
30
RATIO