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April 13, 2012

Penny Reddy
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EPA Region IX
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Subject: **2011 Annual Progress Report – Former Fairchild Buildings 13, 19 and 23**
Middlefield-Ellis-Whisman ("MEW") Area
Mountain View, California

Dear Ms. Reddy:

Attached please find the 2011 Annual Progress Report for Former Fairchild Buildings 13, 19 and 23, prepared by Geosyntec Consultants on behalf of Schlumberger Technology Corporation.

This annual progress report is being submitted in accordance with U.S. Environmental Protection Agency (EPA) Section XV of the Administrative Order for Remedial Design and Remedial Action (106 Order).

If you have any questions regarding this 2011 Annual Progress Report, please feel free to call me.

Very truly yours,

V. COCIANNI

Virgilio Cocianni
Remediation Manager

Attachment

CC: MEW Distribution List

Prepared for

Schlumberger Technology Corporation
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2011 ANNUAL PROGRESS REPORT FOR FORMER FAIRCHILD BUILDINGS 13, 19, and 23

MOUNTAIN VIEW, CALIFORNIA

Prepared by

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engineers | scientists | innovators

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Project Number: WR1133

13 April 2012

2011 Annual Progress Report for Former Fairchild Buildings 13, 19, and 23

369/441 North Whisman Road
Middlefield-Ellis-Whisman Study Area
Mountain View, California

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ACRONYMS AND ABBREVIATIONS

106 Order	Administrative Order for Remedial Design and Remedial Action
bgs	below ground surface
cis-1,2-DCE	cis-1,2-dichloroethene
EPA	United States Environmental Protection Agency
Fairchild	Fairchild Semiconductor Corporation
ft	feet
GAC	granular activated carbon
Geosyntec	Geosyntec Consultants
HLA	Harding Lawson Associates
K	hydraulic conductivity
µg/L	micrograms per liter
MEW	Middlefield-Ellis-Whisman
MCLs	maximum contaminant levels
NASA	National Aeronautics and Space Administration
NPDES	National Pollutant Discharge Elimination System
PCE	tetrachloroethene
O&M	operation and maintenance
QA/QC	quality assurance and quality control
RAO	remedial action objective
RGRP	Regional Groundwater Remediation Program
ROD	Record of Decision
RRWs	regional recovery wells
SCRWs	source control recovery wells
Site	369/441 Whisman Road, Mountain View, California
SVE	Soil Vapor Extraction

Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
Weiss	Weiss Associates
TCE	trichloroethene
VOCs	volatile organic compounds

1. INTRODUCTION

This 2011 Annual Progress Report was prepared by Geosyntec Consultants (Geosyntec) with assistance from Weiss Associates (Weiss) on behalf of Schlumberger Technology Corporation for the former Fairchild Semiconductor Corporation (Fairchild) facilities located at 369/441 North Whisman Road (former Buildings 13, 19, and 23) in Mountain View, California (Site) (Figures 1 and 2).

This progress report contains a summary of Site activities and data from 1 January through 31 December 2011, and monitoring data from the past five years. The report is submitted in accordance with Section XV of the 1990 Administrative Order for Remedial Design and Remedial Action (106 Order) issued by the United States Environmental Protection Agency (EPA), and the EPA's correspondence prescribing Annual Report contents (EPA, 1990a, 2005, and 2011).

1.1 Site Background

The Site lies within the Middlefield-Ellis-Whisman (MEW) study area, an approximate quarter square-mile area bounded by Middlefield Road on the south, Ellis Street on the east, Whisman Road on the west, and Highway 101 on the north, in Mountain View California (Figure 2).

From 1969 to 1987 Site functioned as a facility to produce semiconductor devices. The Site was redeveloped in the 1990s, and was occupied by AOL/Netscape and HP/Mercury Interactive until about 2007. The Site buildings are currently undergoing tenant improvements in advance of Google occupying the buildings beginning in 2012. The previous and current addresses of Former Fairchild Buildings 13, 19 and 23 are provided below:

Previous Address	Current Address
Former Fairchild Buildings 13, 19, and 23 369/441 North Whisman Road	369 North Whisman Road 379 North Whisman Road 389 North Whisman Road 399 North Whisman Road ("The Quad")

Remedial actions for the MEW study area, including the Site, are specified in a 1989 Record of Decision (ROD) issued by EPA and two subsequent Explanations of Significant Difference (EPA, 1989, 1990b, 1996). The volatile organic compounds (VOCs) addressed in the MEW ROD are assigned to both facility-specific and regional responsibilities.

As specified in the ROD, groundwater cleanup included initial actions (completed) and the current long-term remedial phase (EPA, 1989).[1]

In order to prevent migration of VOCs offsite, a groundwater extraction and treatment system was installed at the Site beginning in 1984 and a soil-bentonite slurry wall was constructed at the Site from the ground surface to the A/B Aquitard in 1985. A description of the remedy is provided in Section 1.3.

1.2 Local Hydrogeology

The Site is located within the northern portion of the Santa Clara Valley Groundwater Sub-basin, the northern-most of three interconnected groundwater basins within Santa Clara County (SCVWD, 2001). The groundwater flow direction is northerly, toward the San Francisco Bay, and generally sub-parallel to the ground slope. The hydrostratigraphy in this part of the sub-basin is divided into upper and lower water-bearing zones, separated by an extensive regional aquitard (SCVWD, 1989).

The upper water-bearing zone is subdivided into two water-bearing zones: the A Zone (roughly between 20 and 45 feet below ground surface [bgs]) and the B Zone (roughly between 50 and 160 feet bgs), which are separated by the A/B Aquitard. The B Zone is subdivided into three zones (B1, B2, and B3 Zones).

The lower water-bearing zone occurs below a depth of about 200 feet bgs. The lower water bearing zone is subdivided into the C Zone (which extends to about 240 feet bgs) and the Deep Zone. The aquitard separating the upper and lower water-bearing zones is represented as the B/C Aquitard and is the major confining layer beneath the Site.

---

[1] The soil cleanup goals have been met at the Site (EPA, 2004). Site soil cleanup actions were conducted from 1994 to 1997 and included in-situ soil vapor extraction (SVE) with treatment by vapor-phase GAC, and soil excavation and treatment by aeration.

The water-bearing zones defined at the MEW area are summarized below:

Water Bearing Zones	Approximate Depth Interval Below Ground Surface (bgs)
A[a]	0 to 45 feet
B1[b]	50 to 75 feet
B2	75 to110 feet
B3	120 to 160 feet
C	200 to 240 feet
Deep Aquifer	>240 feet

[a] Navy and NASA refer to this zone as the A1 Zone north of Highway 101.

[b] Navy and NASA refer to this zone as the A2 Zone north of Highway 101.

The following table summarizes the estimated ranges of hydraulic conductivity (K) hydraulic gradient, and transmissivity for the A and B Zones[2].

Water-Bearing Zone	Estimated Hydraulic Conductivity (ft/day)		Approximate Horizontal Gradient (ft/ft)	Saturated Thickness (ft)	Transmissivity (ft^2/day)	
	Low	High			Low	High
A Zone	6	480	0.004	15	44	4,400
B1 Zone	20	260	0.003	25	150	2,600
B2 Zone	0.4	5	0.002 to 0.005	35	2	230
B3 Zone	0.5	5	0.001 to 0.002	40	5	130

Groundwater flow beneath the Site is generally towards the north in the A and B Zones during both non-pumping and pumping conditions. Groundwater hydraulic gradients are locally modified by the operation of groundwater recovery wells (both source control and regional recovery wells) and slurry walls, resulting in steeper gradients in the vicinity of pumping wells.

The vertical component of groundwater flow is generally upward from the B1 to the A Zone, but is locally downward in some areas of the Site. Vertical gradients below the B1 Zone are generally upward (Geosyntec, 2008). Groundwater extraction has likely exerted an influence on the measured vertical gradients.

[2] Pumping tests were conducted at the MEW study area from from 1986 through 1985. References are Canonie 1986a, 1986b 1987 and 1988, Geomatrix 2004, HLA 1986 & 1987, Locus 1998, PRC 1991, Navy 2005 and Weiss Associates 1995 and 2005.

1.3 Description of Remedy

As specified in the ROD, the current Site remedy consists of slurry wall containment and groundwater extraction and treatment.

The groundwater extraction and treatment system is designed to protect local water supplies and to remediate or control groundwater that contains elevated concentrations of chemicals, including control of discharge of such groundwater to surface water.[3]

Groundwater cleanup goals are 5 micrograms per liter (µg/L) for trichloroethene (TCE) in shallow groundwater (A and B Zones) and 0.8 µg/L for TCE in deep groundwater (C and Deep Zones).[4] The ROD states that the chemical ratio of TCE to other chemicals found at the Site is such that achieving the cleanup goal for TCE will result in cleanup of the other Site chemicals to at least their respective federal maximum contaminant levels (MCLs).

A network of 15 extraction wells is used to remove groundwater from three depth intervals at the Site (Table 1). Extracted groundwater is then transported through conveyance piping to a treatment facility located at 389 N. Whisman Road (System 19, formerly 369 N. Whisman Road). Once treated, the water is monitored and sampled in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit, then discharged to a storm water sewer.

Effectiveness of the remedy is evaluated using a network of monitoring wells that are currently monitored according to the schedule provided on Table 2. A construction summary for these wells is provided in Table 3.

1.4 Summary of 2011 Site Activities and Deliverables

Table 3 provides the 2011 monitoring and reporting schedule for the Site Groundwater Remediation Program. Ongoing Site activities include:

- Groundwater extraction and treatment;

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[3] The objectives of the groundwater remedy design are described in the ROD and the Feasibility Study (Canonie, 1988).

[4] Groundwater cleanup goals are presented in the ROD.

- Operation and Maintenance (O&M) of treatment systems;
- Assessment of remedial progress;
- Planning for future remedial activities; and
- Sampling the treatment systems monthly in compliance with general VOC permit under California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) Order No. R2-2009-0059 for Fairchild Treatment System 19.

Specific Site activities and deliverables by month in 2011 are listed below:

February 2011

- 15 February – Submitted the 4th Quarter 2010 System 19 NPDES Self-Monitoring Report.

March 2011

- 24 March – Collected semiannual groundwater elevation measurements in Site monitoring and extraction wells.

May 2011

- 10 May – Submitted the 1st Quarter 2011 System 19 NPDES Self-Monitoring Report.
- 26 May – Collected quarterly groundwater elevation measurements in Site slurry wall well pairs.

June 2011

- 15 June – Distributed the 2010 Annual Progress Report to the EPA and MEW distribution list parties.

August 2011

- 4 August – Submitted the 2nd Quarter 2011 System 19 NPDES Self-Monitoring Report.

September 2011

- 1 September through 14 October – Collected annual groundwater samples from Site wells.
- 15 September – Collected semiannual groundwater elevation measurements in Site monitoring and extraction wells.

November 2011

- 4 November – Submitted the 3rd Quarter 2011 System 19 NPDES Self-Monitoring Report.
- 10 November – Collecting quarterly groundwater elevation measurements in Site slurry wall well pairs.

D*ecember 2011*

- 9 December – Annual settlement monitoring.

The 2011 Annual Report Remedy Performance Checklist is provided in Appendix A.

2. GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

2.1 Extraction, Treatment, and Containment System Description

The Site groundwater extraction, treatment, and containment system (Figure 3) includes the following components:

- A slurry wall enclosure extend to a depth of about 40 feet below ground surface and keyed a minimum of two feet into the A2/B1 aquitard
- Recovery wells
    - 14 source control recovery extraction wells (SCRWs)
    - One regional recovery extraction wells (RRWs)
- Treatment System 19
    - Double-contained groundwater conveyance piping, well vaults;
    - Two sediment filters in parallel;
    - One pad sump, including sump pump;
    - Three 5,000-pound GAC vessels in series; and,
    - Electrical distribution and control panels including:
        - a programmable logic controller,
        - a supervisory control and data acquisition computer; and
        - auto-dialer.

The discharge of treated groundwater from the treatment system to the storm sewer is authorized by NPDES Permit CAG912003, Order No. R2-2009-0059.

2.1.1 Extraction Wells

Table 1 lists the groundwater zone, target flow rate, and 2011 average flow rates for the 15 Site extraction wells. Thirteen of the 15 Site extraction wells were operational in 2011. Extraction wells RW-1(B1) and RW-26A are shut down with EPA approval (EPA, 2006; Weiss, 2009).

The groundwater extracted by off-Site regional wells 65B3 and REG-4B(1) is conveyed to System 19 for treatment (Table 1). An additional five off-Site RRWs (DW3-219, DW3-244, DW3-334, DW3-364, and DW3-505R) are connected to System 19 but have been shut down with EPA approval (EPA, 2006; Weiss, 2009; Geosyntec, 2010a). Further discussion of these regional wells is provided in the MEW Regional Groundwater Remediation Program (RGRP) 2011 Annual Progress Report (Geosyntec, 2012).

2.2 Extraction and Treatment System Operation and Maintenance

From 1 January through 31 December, 2011, the Site treatment system ran 95.4% of the time. A total of approximately 56.5 million gallons of groundwater were treated and 234 pounds of VOCs were removed by the Site treatment system during this reporting period.

As required by the Site discharge permit, extraction well and treatment system flow readings are recorded weekly and the Site treatment systems are sampled monthly. Results are reported quarterly to the Water Board. Extraction well flow rates were optimized in 2010 for all Fairchild wells (Geosyntec, 2010a). The optimized target flow rates and actual flow rates are shown on Table 1. The combined average flow rates for the wells pumping to System 19 totaled 99 gpm, which meets the optimized target flow rate of approximately 98 gpm. Monthly average flow rates and monthly extraction totals by well are provided in Tables 4 and 5 respectively.

The analytical results for monthly groundwater samples from System 19 are summarized in Table 6A and 6B. The laboratory analytical reports are provided in Appendix B, and quality assurance/quality control (QA/QC) evaluation for samples collected at the Site during 2011 is provided in Appendix C.

Table 7 presents a VOC mass removal summary based on the quarterly NPDES Self-Monitoring Reports produced by Weiss (Weiss, 2011a, 2011b, 2011c, and 2012). The cumulative groundwater and VOC mass removal for System 19 is shown in Figure 4.

A summary of routine and non-routine maintenance or operational activities performed at the Site during 2011 is provided in Table 8. The EPA and Water Board are required to be notified of extraction well and system down-time events as follows:

- EPA: The owner and/or operator of the Fairchild treatment system will make a best effort to orally notify EPA within 24 hours of a well or system shutdown that occurs for more than 72 hours.
- Water Board: If the treatment system is shut down for more than 120 consecutive hours after the start up period (maintenance, repair, violations, etc.) the reason(s) for shut down, proposed corrective action(s), and estimated start-up date shall be orally reported to the Water Board within five days of shut down and a written submission shall also be provided within 15 days of shut down.

As demonstrated by System 19 downtime events listed in Table 8, no notifications of well or system shut downs were required during 2011.

A total of 30 tons of spent carbon was generated and classified as non-hazardous for reactivation. Spent sediment filters generated during 2011 were disposed of as hazardous waste.

2.3 Groundwater Level Monitoring

Groundwater levels are measured semi-annually for the purpose of monitoring the hydraulic performance of the Site groundwater remedy. During this reporting period, groundwater levels were measured in the Site monitoring wells on 24 March and 15 September 2011. In addition, water levels were measured in 11 slurry wall well pairs (22 wells) quarterly on 24 March, 26 May, 15 September, and 10 November. Table 2 summarizes the construction details for the Site monitoring and extraction wells. Water levels measured in the Site monitoring wells during 2011 are included in Table 9. Water levels measured in the Site Slurry Wall Well Pairs between January 2007 and December 2011 are included in Table 10.

Hydrographs of Site slurry wall well pairs are provided in Figures 5 and 6. Figure 5 includes a set of hydrographs of A Zone slurry wall well pairs showing the inward and outward gradients across the slurry wall. Figure 6 includes a set of hydrographs of slurry wall well pairs in which one well is screened inside the slurry wall in the A Zone and the adjacent well pair is screened below the slurry wall in the B1 Zone.

Groundwater elevation contour maps for the Site are provided in Figures 7-12 and are based on facility-specific and regional data as presented in the MEW RGRP Annual Report (Geosyntec, 2012). The groundwater elevation contour maps were created using

KT3D_H2O version 3.0, a geostatistical software package (Tonkin and Larson, 2002).[5] As opposed to most interpolation programs that require a choice between linear and logarithmic kriging, this version of KT3D allows for linear-log ordinary kriging using linear kriging in areas distant from recovery wells and point logarithmic kriging in the vicinity of recovery wells. The flow rates from the extraction wells were input to the program in order to allow for a variable radial distance of transition from linear to logarithmic kriging. A spherical variogram was specified with grid spacing of 30 feet.

2.4 Hydraulic Control and Capture Zone Analysis

The water level monitoring described in Section 2.3 provides the basis for evaluating the hydraulic performance of the Site-specific groundwater remedies. The hydraulic capture area achieved by one or more recovery wells cannot be directly measured, but rather requires analysis and interpretation of the measured water levels and extraction rates. The following discussion summarizes the basis for estimating the capture zones.

2.4.1 Methodology

In evaluating groundwater capture for Site wells, consideration was given to the EPA guidance document *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems* (EPA, 2008). The following steps were used to perform the hydraulic evaluation of the groundwater remedy.

- The Site conceptual model, remedy objectives, slurry wall locations, and target capture zones were available from previous studies and prior annual monitoring reports;
- Water level measurements from March and September 2011 were interpolated to generate groundwater elevation contour maps as described in Section 2.3 and the MEW RGRP Annual Report (Geosyntec, 2012);
- Pumping rates from RRWs and SCRWs were compiled;

[5] The KT3D software package was developed as part of the Geostatistical Software Library (GSLIB) at Stanford University and was subsequently modified by S.S. Papadopulos and Associates, Inc. to include well drift (Deutsh and Journal, 1998, Tonkin and Larson, 2002).

- Hydraulic capture from each RRW and SCRW was estimated based on graphical flow-net analysis of the contour maps, guided by backward particle tracking and analytical flow solutions (Section 2.4.2);
- A water balance calculation was used to check the total width of capture estimated from the graphical analysis;
- Water level data from well clusters were analyzed for the distribution of vertical gradients; and
- VOC time-series trends in monitoring wells were reviewed for confirming evidence of hydraulic capture (Section 2.5).

2.4.2 Estimated Extraction Well Capture

Estimated capture zones for Site recovery wells in March and September 2011 are shown in Figures 7 through 12. The capture zones were estimated by graphical flow-net analysis, using the groundwater elevation contour maps (Section 2.3). The graphical analysis was guided by backward particle tracking using TransientTracker in KT3D_H20 and calculated distances to the stagnation point and capture zone width based on the analytical solution of Javandel and Tsang (1986). All extraction wells pumping in the MEW study area were considered as part of the capture zone evaluation for the Site. The KT3D_H20 particle tracking method and analytical calculations assume homogeneous, two-dimensional groundwater flow with a single regional estimated value of transmissivity. These methods were used as supporting lines of evidence to evaluate capture together with the groundwater elevation contour maps. The final capture zones as presented in Figures 7 through 12 are based on professional judgment in consideration of the above analyses, known site conditions, and experience with similar sites.

2.4.3 Capture Width Based on Combined Flow Rate Analysis

The capture zone analysis described in 2.4.2 above was developed on a well-by-well basis. However, the net result of the combined capture zones from all SCRWs is an area of hydraulic capture significantly wider than the distribution of VOCs in groundwater. An independent check of the capture zones presented in Figures 7 through 13 was developed by using the combined 2011 groundwater extraction rates for all RRWs and SCRWs located in the Site boundaries, to estimate the total capture width in each zone (A, B1, B2, and B3). The estimated capture widths were then compared to

the distribution of TCE in groundwater (Section 2.5, Figures 13, 17, and 21) within the Site boundaries, measured in map view for each zone. The target capture width for A Zone wells inside the slurry wall was considered to be the total width of the slurry wall enclosure. If the estimated width of capture is greater than the trans-gradient width of the TCE distribution in groundwater, then hydraulic containment of the plume is indicated.

The calculations of capture width for each zone based on the total extraction rate, regional hydraulic gradient, hydraulic conductivity, and zone thickness are shown in Table 11.

The results indicate that the predicted capture width based on the total extraction rate is greater than the measured transgradient width of TCE in groundwater within the Site, thereby providing an additional line of evidence that hydraulic containment is achieved.

2.4.4 Comparison to Target Captures for Individual SCRWs

The target capture zones and estimated hydraulic capture for the SCRWs in each aquifer, are depicted in Figures 7 through 13. The target hydraulic capture areas for individual SCRWs outside the Site slurry wall are the modeled capture zones depicted in the final remedial design document for the MEW area South of Highway 101 (Canonie, 1994; Smith, 1996). There are no target capture zones for wells RW-2A and RW-2B1 because they were not selected in the Site remedial design as SCRWs. Fairchild later added these wells as SCRWs. As noted in Section 2.4.2, estimated hydraulic capture zones were drawn based on multiple forms of analysis, professional judgment, and known site conditions.

The estimated capture zones in Figures 7 through 13 depict complete capture of the target capture zones.

2.4.5 Horizontal and Vertical Gradients

Figures 5 and 6 illustrate head differences between slurry wall well pairs at the Site. The well pairs in Figure 5 are used to evaluate the direction of horizontal gradient across the slurry wall by comparing water levels in wells located inside the slurry wall with water levels in adjacent wells outside the slurry wall. The well pairs in Figure 6 are used to evaluate the direction of vertical gradient across the A/B Aquitard by comparing water levels in wells located inside the slurry wall (in the A Zone) with

water levels in wells located below the slurry wall (in B1 Zone). Groundwater elevations were recorded quarterly in March, May, August, and November 2011 in the slurry wall well pairs listed on Table 10. The well locations are shown in Figures 3, 5, and 6.

Results of the well pair analysis at the Building 19 slurry wall indicate the following:

Horizontal Gradients: During this reporting period, inward gradients were consistently observed at well pairs 140A/101A and 142A/143A located on the upgradient side of the slurry wall, and well pair 141A/139A located on the eastern crossgradient side of the slurry wall. Outward gradients were observed at well pairs 115A/135A and 154A/155A located on the downgradient side of the slurry wall, and well pair 17A/159A located on the western crossgradient side of the slurry wall.

Vertical Gradients: Upward, neutral, and downward gradients were observed between the A and B1 aquifer. Upward gradients were observed at well pairs 101A/93B1, 159A/RW-1(B1), and 15A/98B1; neutral gradients were observed at well pair 134A/110B1; and, downward gradients were observed at well pair 12A/117B1.

The horizontal and vertical gradients recorded during this reporting period are generally consistent with historical observations. The outward and downward gradients observed at the Site slurry wall do not impact Site cleanup objectives because water immediately downgradient of the slurry wall is completely captured by downgradient Site extractions wells (A Zone: RW-24A and RW-2A; B1 Zone: RW-11 and RW-2(B1)). Additionally, the VOC concentration trends in wells downgradient of the slurry wall provide supporting evidence for adequate plume capture (Section 2.5).

2.5 Groundwater Quality Monitoring

The 2011 Annual Groundwater Quality Sampling Event at the Site was conducted in September and October 2011. A total of 38 Site wells were sampled for VOCs in 2011. In addition, 3 MEW RGRP wells located on the Site were sampled in 2011 and are reported separately in the RGRP Annual Report (Geosyntec, 2012). A summary of chemical analytic results for the previous five years (2007 through 2011) is provided in Table 12. Appendix B contains the laboratory analytic reports and chain-of-custody documents for samples collected in 2011, and Appendix C contains the QA/QC evaluation report, summary tables, and criteria. VOC versus time graphs for select monitoring wells are included in Appendix D.

2.5.1 Isoconcentration Contour Maps

Tetrachloroethene (PCE), TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride isoconcentration contour maps were created for the 2011 annual sampling event. The 2011 TCE contour maps were based on the existing 2010 TCE contour maps (Geosyntec, 2011) with contours modified as needed to reflect decreases or increases in TCE concentrations from 2010 to 2011. Similarly, the cis-1,2-DCE and vinyl chloride contour maps were based on and modified from the regional 2009 cis-1,2-DCE and vinyl chloride contour maps (Geosyntec, 2010b). The PCE contour maps were generated by hand and based on professional judgment in consideration of known Site conditions. All wells in the MEW study area sampled for VOCs in 2011 were included in isoconcentration contouring as presented in the MEW RGRP Annual Progress Report (Geosyntec, 2012). The 2011 isoconcentration contour maps for the Site are presented for the A Zone, B1 Zone, and B2 Zone in Figures 13 to 24.

2.5.2 Remedy Performance

In conjunction with the hydraulic analysis described in Section 2.4, the VOC monitoring data provides an additional line of evidence for assessing remedy performance.

In the 2011 annual monitoring event all of the Site wells sampled had TCE concentrations that were within or below historical ranges.

Selected VOC versus time graphs are presented in Appendix D. In addition to the creation of time series graphs a Mann-Kendall statistical analysis was performed in order to evaluate VOC concentration trends in the Site wells[6] (Table 13). Based on the Mann-Kendall statistical analysis the TCE concentrations are stable, decreasing or have no trend in all of the Site wells. Approximately 53% of Site wells display decreasing TCE concentration trends and 47% show no trend or are stable.

The spatial distribution of VOC monitoring data can also be used to assess remedy performance. Figures 13, 17, and 21 present maps of the A Zone, B1 Zone, and B2

[6] A Mann-Kendall statistical analysis was performed on all Site wells using the TCE, cis-1,2-DCE and Vinyl Chloride concentration data from 2002 to 2011 to evaluate the concentration trends. Well with insufficient data (< 4 sampling events) were not included in the trend analysis evaluation.

Zone, respectively, with the September 2011 hydraulic capture zones (Section 2.4) overlain on the September/October 2011 TCE isoconcentration maps. These figures illustrate complete hydraulic capture, within the site boundaries.

The VOC time series data and VOC monitoring data indicate that the combined MEW remedies are performing as designed to control or remediate VOCs in groundwater.

2.6 Compliance

The system operated within the effluent limits established by the NPDES permits for the entire period. VOC results from samples collected for NPDES compliance are summarized in Table 6A.

3. OTHER ACTIVITIES

3.1 Air/Vapor Intrusion

The EPA issued a ROD amendment on 16 August 2010 to address vapor intrusion. The MEW parties continued to work with EPA and local entities to implement the ROD amendment during 2011. In accordance with the Statement of Work for the Vapor Intrusion ROD Amendment, an annual report summarizing the status of the vapor intrusion remedy will be submitted under separate cover (Haley and Aldrich, 2012).

3.2 Soil Settlement Survey

An annual settlement survey was performed on 9 December 2011. The purpose of these annual measurements is to evaluate any potential adverse effects on the Site facilities, and whether long-term remedial groundwater extraction could affect soil settlement in the MEW study area. A qualified Geotechnical Engineer reviewed the historical settlement and water level elevation data and concluded that the measured values of ground elevation change do not appear to be related to groundwater extraction operations. Additional information on the settlement survey can be found in the RGRP 2011 Annual Progress Report (Geosyntec, 2012).

4. PROBLEMS ENCOUNTERED

Table 9 provides a summary of all non-routine O&M events that occurred at the Building 19 Treatment System or at individual extraction wells. No other problems related to the groundwater treatment or containment system at Building 19 were encountered.

5. TECHNICAL ASSESSMENT

The following assessment of the groundwater remedy performance was made based on data collected through 2011.

- The remedy is functioning as intended. Based on 2011 data reviewed, the groundwater remedy is generally functioning as intended. An Annual Report Remedy Performance Checklist is included in Appendix A.
- The capture zones are adequate. Groundwater elevations, graphical flow net analysis, capture zone width calculations, and VOC concentration trends provide converging lines of evidence that the Site extraction wells are achieving adequate horizontal and vertical capture. The concentration trends in downgradient wells indicate supporting evidence for adequate plume control within the Site slurry wall enclosure.
- VOC concentrations are steady to decreasing over time. Table 13 shows that all of the Site wells either have no trend or have a stable to decreasing TCE concentration trend over the last ten years.

The remedial actions meet the remediation action objectives (RAOs) for groundwater.

6. CONCLUSIONS AND RECOMMENDATIONS

Approximately 56.5 million gallons of groundwater were treated and 234 pounds of VOCs were removed by the groundwater treatment system during 2011. From 1 January through 31 December 2011, the groundwater treatment system operated 95.4% of the time.

The technical assessment concludes that the Site groundwater remedy is preforming as intended. The estimated capture zones from March and September 2011 meet or exceed target capture areas as indicated by converging lines of evidence, including graphical flow net analysis, capture zone width calculations, and concentration trends.

7. UPCOMING WORK IN 2012 AND PLANNED FUTURE ACTIVITIES

January	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)
February	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit 4th Quarter and Annual NPDES report
March	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Groundwater level measurements
April	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Annual Progress Report to EPA
May	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Semi-annual system influent sampling (NPDES) • Submit 1st Quarter NPDES report
June	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)
July	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)
August	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit 2nd Quarter NPDES report
September	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Annual Groundwater sampling • Groundwater level measurements
October	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Annual system effluent sampling (NPDES) • Annual Groundwater sampling • Triennial system effluent sampling (NPDES)
November	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Semi-annual system influent sampling (NPDES) • Submit 3rd Quarter NPDES report
December	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)

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TABLES

Table 1
System 19 Target and 2011 Average Recovery Well Flow Rates
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Extraction Wells	2011 Target Flow Rate[1] (gpm)	Average 2011 Flow Rate[2] (gpm)
A Zone		
71A	4.0	3.6
RW-1A	4.0	4.0
RW-2A	8.5	8.4
RW-11A	3.0	3.5
RW-12A	2.0	1.8
RW-23A	10.5	10.8
RW-24A	2.5	4.5
RW-26A[3]	off	off
RW-29A	11.5	8.7
B1/A2 Zone		
REG-4B(1) (RGRP)	6.0	6.2
RW-1(B1)[3]	off	off
RW-2(B1)	5.5	6.2
RW-10(B1)	12.5	12.4
RW-11(B1)	9.0	9.7
B2 Zone		
RW-1(B2)	0.1	0.3
RW-2(B2) (RGRP)	12.0	12.4
B3 Zone		
65B3 (RGRP)	6.5	6.5
C/Deep Zone		
DW3-219 (RGRP)[3]	off	off
DW3-244 (RGRP)[3]	off	off
DW3-334 (RGRP)[3]	off	off
DW3-364 (RGRP)[3]	off	off
DW3-505R (RGRP)[3]	off	off

Notes:
Wells shown in **bold** are located on the Site
1. Target flow rates were adjusted in 2010 as a result of EPA comments on the 2008 optimization evaluation (Geosyntec, 2010).
2. Average 2011 flow rates were calculated by dividing the total volume of groundwater recovered by the time in minutes between the totalizer readings. System 19 totalizer readings were recorded on 29 December 2010 and 28 December 2011.
3.Well is offline with EPA approval (EPA, 2006; Weiss, 2009; Geosyntec 2010).
gpm = gallons per minute
(RGRP) = Regional Groundwater Remediation Program well connected to System 19 for treatment. Further discussion of this well is provided in the MEW RGRP 2011 Annual Progress Report (Geosyntec, 2012).
EPA = United States Environmental Protection Agency

Table 2
Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Monitoring and Sampling - Wells		
Well	**Sampling Frequency**	**Water Level Gauging Frequency**
A/A1 Zone		
4A	Annually (September or October)	Semiannually (March, September)
6A[1]	Every 5 Years	Semiannually (March, September)
9A[1]	Every 5 Years	Semiannually (March, September)
12A[1]	Every 5 Years	Quarterly
15A[1]	Every 5 Years	Quarterly
16A	Annually (September or October)	Semiannually (March, September)
17A	Annually (September or October)	Quarterly
22A	Annually (September or October)	Semiannually (March, September)
23A[3]	Annually (September or October)	Semiannually (March, September)
71A	Annually (September or October)	Semiannually (March, September)
101A[1]	Every 5 Years	Quarterly
115A	Annually (September or October)	Quarterly
134A	Annually (September or October)	Quarterly
139A[1]	Every 5 Years	Quarterly
140A		Quarterly
141A		Quarterly
142A[2] (RGRP)		Quarterly
143A[1]	Every 5 Years	Quarterly
148A[1]	Every 5 Years	Semiannually (March, September)
149A	Annually (September or October)	Semiannually (March, September)
154A	Annually (September or October)	Quarterly
155A	Annually (September or October)	Quarterly
159A	Annually (September or October)	Quarterly
160A	Annually (September or October)	Semiannually (March, September)
161A[1]	Every 5 Years	Semiannually (March, September)
174A	Annually (September or October)	Semiannually (March, September)
175A	Annually (September or October)	Semiannually (March, September)
RW-1A	Annually (September or October)	Semiannually (March, September)
RW-2A	Annually (September or October)	Semiannually (March, September)
RW-11A	Annually (September or October)	Semiannually (March, September)
RW-12A	Annually (September or October)	Semiannually (March, September)
RW-23A	Annually (September or October)	Semiannually (March, September)
RW-24A	Annually (September or October)	Semiannually (March, September)
RW-26A	Annually (September or October)	Semiannually (March, September)
RW-29A	Annually (September or October)	Semiannually (March, September)
B1/A2 Zone		
93B1[1]	Every 5 Years	Quarterly
95B1	Annually (September or October)	Semiannually (March, September)
98B1[2] (RGRP)		Quarterly
101B1	Annually (September or October)	Quarterly
110B1	Annually (September or October)	Semiannually (March, September)
117B1	Annually (September or October)	Quarterly
145B1	Annually (September or October)	Semiannually (March, September)
156B1	Annually (September or October)	Semiannually (March, September)
RW-1(B1)	Annually (September or October)	Quarterly
RW-2(B1) (RGRP)	Annually (September or October)	Semiannually (March, September)
RW-10(B1)	Annually (September or October)	Semiannually (March, September)
RW-11(B1)	Annually (September or October)	Semiannually (March, September)

Table 2
Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Monitoring and Sampling - Wells		
Well	**Sampling Frequency**	**Water Level Gauging Frequency**
B2 Zone		
40B2 (RGRP)	Annually (September or October)	Semiannually (March, September)
90B2	Annually (September or October)	Semiannually (March, September)
146B2	Annually (September or October)	Semiannually (March, September)
RW-1(B2)	Annually (September or October)	Semiannually (March, September)
RW-2(B2)	Annually (September or October)	Semiannually (March, September)

Monitoring and Sampling - System 19	
System Component	**Sample Frequency**
Systerm 19 Influent	Quarterly
System19 Midpoint 1	Monthly
System 19 Midpoint 2	Monthly
System 19 Effluent	Monthly
Stevens Creek[3,4]	

Reporting	
Report	**Due Date**
Quarterly NPDES	February 15, May 10, August 4, and November 4
EPA Annual Progress Report	April 15

Notes:

Wells shown in **bold** are associated with the Fairchild Operation and Maintenance Program (RMT, 2003).

1. Wells are sampled every five years and will be sampled next in 2012.
2. Regional Groundwater Remediation Program well gauged as part of a slurry wall well pair.
3. In cases of effluent exceedance, receiving water must be sampled upstream/downstream of treatment system within 24 hours for the exceeded compound(s) and dissolved oxygen level.
4. In cases of Cadmium, Chromium (total), Copper, Lead, Silver, or Zinc trigger exceedances, receiving water must be sampled upstream/downstream of treatment system for hardness and salinity on the same day as one of the three required resamples is taken (Per NPDES Permit CAG912003, Order No. R2-2009-0059, effective October 1, 2009).

EPA = = United States Environmental Protection Agency

MEW = Middlefield Ellis Whisman

NPDES = National Pollutant Discharge Elimination System

(RGRP) = Regional Groundwater Remediation Program well. Further discussion of this well is provided in the MEW RGRP 2011 Annual Progress Report (Geosyntec, 2012).

Slurry wall well pair water levels are measured on a quarterly basis.

Table 3
Extraction and Monitoring Well Construction Summary
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Well ID	Year Installed	Reference Elevation[1] (ft msl)	Diameter (inches)	Total Well Depth (ft btoc)	Top of Screened Interval (ft btoc)	Bottom of Screened Interval (ft btoc)	Top of Sand Pack (ft btoc)	Bottom of Sand Pack (ft btoc)	Well Type
A/A1 Zone									
4A	1982	54.69	2	35	20	35	15	35	Mon
6A	1982	54.74	2	39	20	39	17	39	Mon
9A	1982	55.82	2	40	15	40	10	40	Mon
12A	1982	55.11	2	35	15	35	15	35	Mon
15A	1982	54.06	2	40	15	40	15	40	Mon
16A	1982	53.30	2	32	22	32	14	32	Mon
17A	1982	53.40	2	35	20	35	15	35	Mon
22A	1982	52.87	2	30	14	30	12	30	Mon
23A	1982	50.56	2	30	14	30	14	30	Mon
71A	1984	55.15	12	36	26	31	13	37.5	Ext
101A	1986	55.14	4	36	19	34	14	36	Mon
115A	1986	53.48	4	30	20	30	18	32	Mon
134A	1986	53.44	4	30	20	30	18	32	Mon
139A	1986	53.21	4	31	16	31	11	34	Mon
140A	1986	56.99	4	33	18	33	16	35	Mon
141A	1986	53.25	4	26	16	26	11	28	Mon
142A (RGRP)	1986	57.27	4	27	22	27	20	29	Mon
143A	1986	55.72	4	27	22	27	20	29	Mon
148A	1991	53.92	4	32.5	22.5	32.5	19.5	33	Mon
149A	1991	51.90	4	32.5	12.5	32.5	11.5	35	Mon
154A	1993	53.90	4	29	19	29	15	30	Mon
155A	1993	54.17	4	29	19	29	15	30	Mon
159A	1997	54.62	4	30	20	30	17	33	Mon
160A	1997	53.89	4	33.5	18.5	33.5	15.5	35.5	Mon
161A	1997	56.15	4	30.5	20.5	30.5	17.5	33	Mon
174A	2002	53.66	4	31.5	18	28	15	30	Mon
175A	2002	53.82	4	35	19	29	16	30	Mon
RW-1A	1985	53.71	6	35	20	35	15.5	35	Ext
RW-2A	1985	49.42	6	34	19	34	15	36	Ext
RW-11A	1985	54.87	6	35	25	35	10	37	Ext
RW-12A	1985	53.96	6	35	25	35	10	37	Ext
RW-23A	1994	52.75	6	34.5	24.5	34.5	21.5	35	Ext
RW-24A	1994	50.15	6	32	22	32	19	33	Ext
RW-26A	1997	53.51	6	32	22	32	15	34	Ext
RW-29A	2002	52.04	6	35	20	35	17	35	Ext
B1/A2 Zone									
93B1	1986	55.27	4	67	52	67	45	69	Mon
95B1	1986	56.95	4	65	50	65	46.5	67	Mon
98B1 (RGRP)	1986	54.10	4	66	57	66	46	68	Mon
101B1	1986	54.92	4	65	50	65	46	67	Mon
110B1	1986	53.68	4	59	49	59	47	61	Mon
117B1	1986	53.80	4	63	53	63	51	65	Mon
145B1	1994	54.00	6	65	53	63	50	65	Mon
156B1	2002	50.87	4	60	49	54	37	55	Mon
RW-1(B1)	1985	53.83	6	72	52	72	42	73	Ext
RW-2(B1) (RGRP)	1986	48.18	6	56	46	56	45	59	Ext
RW-10(B1)	1994	52.40	6	65	55	65	52	66	Ext
RW-11(B1)	1995	50.43	6	61	51	61	48	63	Ext
B2 Zone									
40B2	1985	54.59	4	92	87	92	83.5	93	Mon
90B2	1986	54.18	4	104	94	104	87	106	Mon
146B2	1995	53.58	6	96	85	95	82	97	Mon
RW-1(B2)	1985	53.49	6	94	87	92	84	97	Ext
RW-2(B2)	1985	48.95	6	96	76	96	72	98	Ext

Notes:
Water levels for extraction wells are taken from a 2" piezometer located next to the well.
1. Reference Elevations are in National Geodetic Vertical Datum from 1929 (NGVD 29).
ft msl = feet mean sea level
ft btoc = feet below top of casing
Ext = extraction well
Mon = monitoring well
(RGRP) = Regional Groundwater Remediation Program well. Further discussion of this well is provided in the MEW RGRP 2011 Annual Progress Report (Geosyntec, 2012)

Table 4
System 19 Monthly Average Recovery Well Flow Rates
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Extraction Well	2011 Average Monthly Flowrate[1] (gpm)											
	January	February	March	April	May	June	July	August	September	October	November	December
A/A1 Zone												
71A	3.59	3.26	3.10	2.49	3.18	4.88	4.72	4.63	3.99	3.49	3.02	2.97
RW-1A	3.92	4.06	4.00	4.32	4.67	4.46	4.26	4.05	3.22	3.22	3.95	3.76
RW-2A	7.64	7.90	8.10	8.65	8.86	9.16	8.91	9.28	8.50	7.98	7.95	7.81
RW-11A	3.27	3.20	3.30	3.52	3.40	3.83	3.77	3.76	3.67	3.43	3.30	3.20
RW-12A	1.67	1.72	1.72	1.50	1.46	1.29	1.24	1.72	2.71	2.50	2.28	2.03
RW-23A	10.86	10.46	9.78	10.35	11.36	11.35	10.62	11.34	10.99	10.63	10.88	10.63
RW-24A	4.80	4.48	4.69	4.53	4.67	4.18	4.41	4.50	4.34	4.49	4.57	4.32
RW-26A[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-29A	6.59	7.14	7.91	9.53	8.91	9.80	9.31	9.56	9.10	8.89	9.04	8.29
B1/A2 Zone												
REG-4B(1) (RGRP)	6.34	6.14	5.82	5.66	5.99	5.70	5.66	6.90	6.59	6.52	6.77	6.63
RW-1(B1)[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-2(B1) (RGRP)	6.06	5.94	5.87	5.88	6.24	6.33	6.12	6.44	6.23	6.13	6.36	6.25
RW-10(B1)	11.39	11.25	11.14	11.92	13.10	13.31	12.73	13.34	13.14	12.70	12.78	11.76
RW-11(B1)	9.95	9.37	9.81	9.81	10.17	9.57	9.58	9.56	9.57	9.80	9.73	9.24
B2 Zone												
RW-1(B2)	0.34	0.34	0.33	0.34	0.35	0.35	0.33	0.34	0.33	0.32	0.32	0.32
RW-2(B2)	11.63	9.40	10.38	9.33	12.05	13.78	10.49	13.29	14.39	14.68	15.64	12.48
B3 Zone												
65B3 (RGRP)	6.66	6.49	6.37	6.22	6.52	6.56	6.35	6.68	6.46	6.37	6.61	6.46
C/Deep Zone												
DW3-219 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-244 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-334 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-364 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-505R (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
Total	94.72	91.15	92.32	94.05	100.93	104.55	98.50	105.37	103.22	101.15	103.22	96.16

Notes:

1. Monthly average recovery well flow rates were calculated by dividing the volume of groundwater extracted by the time (minutes) between the effluent totalizer readings (generally taken last Wednesday of each month).

2. Well is offline with EPA approval (EPA, 2006; Weiss, 2009; Geosyntec 2010).

gpm = gallons per minute

-- = well was off this month

EPA = United States Environmental Protection Agency

(RGRP) = Regional Groundwater Remediation Program well connected to System 19 for treatment. Further discussion of this well is provided in the MEW RGRP 2011 Annual Progress Report (Geosyntec, 2012)

Table 5
System 19 Monthly Extraction Totals
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Extraction Well	2011 Monthly Volume Extracted[1] (gallons)											
	January	February	March	April	May	June	July	August	September	October	November	December
A/A1 Zone												
71A	144,677	131,621	156,344	100,241	128,248	245,802	190,214	233,602	160,893	140,699	152,208	119,613
RW-1A	158,122	163,802	201,792	174,299	188,252	224,692	171,704	204,193	129,865	129,752	198,976	151,708
RW-2A	308,036	318,478	408,119	348,774	357,091	461,879	359,271	467,496	342,619	321,834	400,883	314,807
RW-11A	131,875	129,211	166,211	141,756	136,939	192,905	151,837	189,280	147,873	138,174	166,333	129,181
RW-12A	67,308	69,321	86,697	60,515	58,978	65,160	50,113	86,598	109,198	100,863	115,153	81,932
RW-23A	438,049	421,837	493,103	417,167	457,859	572,147	428,279	571,393	442,925	428,409	548,404	428,499
RW-24A	193,396	180,708	236,477	182,843	188,351	210,505	178,003	226,625	175,055	181,196	230,460	174,338
RW-26A[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-29A	265,526	287,716	398,842	384,109	359,082	494,050	375,484	481,672	366,717	358,367	455,414	334,217
B1/A2 Zone												
REG-4B(1) (RGRP)	255,785	247,370	293,504	228,371	241,419	287,245	228,072	347,847	265,804	262,925	341,138	267,316
RW-1(B1)[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-2(B1) (RGRP)	244,532	239,572	295,761	236,997	251,759	318,939	246,758	324,736	251,393	247,303	320,736	252,030
RW-10(B1)	459,446	453,436	561,242	480,430	528,177	670,757	513,343	672,457	529,974	512,069	644,014	474,336
RW-11(B1)	401,264	377,611	494,460	395,684	410,189	482,518	386,160	481,769	385,765	395,066	490,320	372,688
B2 Zone												
RW-1(B2)	13,671	13,699	16,750	13,621	13,989	17,434	13,326	16,984	13,165	12,820	16,329	13,058
RW-2(B2)	468,873	378,925	522,911	376,311	486,037	694,497	423,010	669,604	580,077	591,963	788,413	503,204
B3 Zone												
65B3 (RGRP)	268,527	261,720	320,829	250,793	262,953	330,621	255,880	336,468	260,659	256,819	333,266	260,381
C/Deep Zone												
DW3-219 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-244 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-334 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-364 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-505R (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
Total[3]	3,996,500	4,175,400	4,931,700	4,020,000	4,692,750	5,494,350	4,745,250	5,564,850	4,480,325	4,505,175	5,653,140	4,277,400

Notes:
1. The monthly volume of groundwater extracted is based on effluent totalizer readings at each well (generally taken last Wednesday of each month).
2. Well is offline with EPA approval (EPA, 2006; Weiss, 2009; Geosyntec 2010).
3. The total volume extracted is calculated from the system effluent meter, therefore the sum of the wells is not equal to the total volume reported. This discrepancy is attributed to inherent errors associated with comparing these two independently measured values.
-- = well was off this month
EPA = United States Environmental Protection Agency
(RGRP) = Regional Groundwater Remediation Program well connected to System 19 for treatment. Further discussion of this well is provided in the MEW RGRP 2011 Annual Progress Report

Table 6A
2011 System 19 VOC Sampling Results Summary
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	1,1,1-TCA	TCE	PCE	Vinyl Chloride	1,4-Dioxane[1]
Influent	2/10/2011	<5.0	<2.5	<2.5	**3.1**	**120**	<2.5	<10	**3.5**	**360**	<2.5	<2.5	NA
Influent	5/9/2011	<5.0	**3.1**	<2.5	**4.0**	**170**	**4.7**	11	**4.5**	**420**	<2.5	<2.5	<0.99
Influent	8/11/2011	<5.0	<2.5	<2.5	<2.5	**73**	<2.5	<10	<2.5	**230**	<2.5	<2.5	NA
Influent	11/4/2011	<7.1	<3.6	<3.6	**3.8**	**170**	<3.6	<14	<3.6	**420**	<3.6	<3.6	NA
Midpoint 1	1/13/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	2/10/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	3/16/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	4/5/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	5/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	6/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	7/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**2.1**	NA
Midpoint 1	7/29/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	8/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**1.1**	NA
Midpoint 1	9/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 1	10/10/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.80	NA
Midpoint 1	11/4/2011	<1.0	**3.5**	<0.5	**5.5**	**180**	**3.9**	17	**3.7**	**420**	**0.5**	**1.7**	NA
Midpoint 1	12/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**0.6**	NA
Midpoint 2	1/13/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 2	2/10/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 2	5/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 2	8/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 2	9/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Midpoint 2	11/4/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	1/13/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	2/10/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	3/16/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	4/5/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	5/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.99
Effluent	6/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
NPDES Trigger Levels		*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*3*
Effluent Limitations:		*5*	*5*	*0.5*	*0.11*	*5*	*5*	*5*	*5*	*5*	*5*	*0.5*	*NE*

Table 6A

2011 System 19 VOC Sampling Results Summary

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program

Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	1,1,1-TCA	TCE	PCE	Vinyl Chloride	1,4-Dioxane[1]
Effluent	7/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	8/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	9/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	10/10/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	11/4/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	12/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	3/16/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	5/11/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	7/29/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	9/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	11/4/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	12/2/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
NPDES Trigger Levels		*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	*3*
Effluent Limitations:		*5*	*5*	*0.5*	*0.11*	*5*	*5*	*5*	*5*	*5*	*5*	*0.5*	*NE*

Notes:

All Parameters are within effluent limits specified in NPDES permit order no. R2-2009-0059, NPDES permit no. CAG912003

The NPDES permit requries semiannual sampling of 1,4-Dioxane if the chemical is known to be in the influent. In May 2011, the influent was sampled for 1,4-Dioxane. Because it was not detected, sampling the effluent for the chemical is not required.

In accordance with the NPDES permit, if reporting limit for 1,1-DCE is greater than the effluent limit, the permit specifies that non-detect using a 0.5 µg/L reporting limit will not be deemed to be out of compliance.

Effluent limitations are maximum daily effluent limitations on discharge to drinking water areas as specified in Order No. R2-2009-0059, VOC General NPDES Permit No. CAG912003.

1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,2-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
Freon 113 = trichlorotriflourethane
trans-1,2-DCE = trans-1,2-Dichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene

(1) 1,4-dioxane analyzed by method 8270C SIM
< indicates analyte not detected above the reported detection limit
NA indicates the sample wasn't analyzed for the given analyte
CT = Curtis and Tompkins Laboratories, Berkeley, CA
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
NE = Not Established
NPDES = National Pollutant Discharge Elimination System
µg/L = micrograms per liter

Table 6B
System 19 Inorganic Sampling Results Summary
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	pH	Temperature (^oC)	Conductivity (µS/cm)	Turbidity (NTU)	Rainbow Trout Acute Toxicity[1] (% survival)
Influent	02/10/11	6.84	18.9	903	---	---
Influent	05/09/11	7.01	19.7	918	---	---
Influent	08/11/11	7.11	20.0	760	---	---
Influent	11/04/11	6.99	20.1	691	---	---
Midpoint 1	01/13/11	7.09	18.8	903	---	---
Midpoint 1	02/10/11	6.78	18.8	900	---	---
Midpoint 1	03/16/11	7.08	19.2	1117	---	---
Midpoint 1	04/05/11	7.22	18.6	710	---	---
Midpoint 1	05/09/11	7.02	19.6	919	---	---
Midpoint 1	06/02/11	7.14	19.2	910	---	---
Midpoint 1	07/11/11	7.08	21.5	673	---	---
Midpoint 1	07/29/11	6.85	20.7	829	---	---
Midpoint 1	08/11/11	7.06	20.0	759	---	---
Midpoint 1	09/09/11	7.07	20.1	824	---	---
Midpoint 1	10/10/11	7.29	19.9	694	---	---
Midpoint 1	11/04/11	6.93	20.1	673	---	---
Midpoint 1	12/02/11	6.76	19.6	663	---	---
Midpoint 2	01/13/11	7.13	19.0	898	---	---
Midpoint 2	02/10/11	6.74	18.8	915	---	---
Midpoint 2	05/09/11	7.05	19.9	922	---	---
Midpoint 2	08/11/11	7.12	19.9	757	---	---
Midpoint 2	09/02/11	7.27	20.9	758	---	---
Midpoint 2	11/04/11	6.94	20.0	685	---	---
Effluent	01/13/11	7.28	18.7	940	---	---
Effluent	02/10/11	6.86	18.5	920	---	---
Effluent	03/16/11	7.35	18.7	1112	---	---
Effluent	04/05/11	7.40	18.5	714	---	---
Effluent	05/09/11	7.13	20.0	913	---	---
Effluent	06/02/11	7.22	18.7	926	---	---
Effluent	07/11/11	7.11	19.9	684	---	---
Effluent	08/11/11	7.13	19.9	766	---	---
Effluent	09/09/11	7.19	21.1	839	---	---
Effluent	10/10/11 - 10/12/11	7.28 / 7.25	19.7 / 19.4	697 / 674	---	100
Effluent	11/04/11	6.88	19.7	687	<0.02	---
Effluent	12/02/11	6.71	19.4	592	---	---
NPDES Trigger Levels:		---	---	---	5	---
Effluent Limitations:[2]		6.5 to 8.5	NE	NE	NE	70.0

General Notes:
All parameters are within effluent limits specified in NPDES permit NO. CAG912003 and order NO. R2-2009-0059.
Per Order No. R2-2009-0059, VOC General NPDES Permit No. CAG912003, pH, temperature, electrical conductivity, and turbidity are now required to be reported on an annual basis but pH, temperature, and conductivity readings are collected on a monthly basis. System effluent was analyzed for turbidity in November.
Sampling for hardness and salinity is required in a single annual sample in the receiving water only if trigger levels for Cadmium, Chromium (total), Copper, Lead, Nickel, Silver, or Zinc are exceeded. System samples are analyzed for these metals, mercury, and cyanide every three years and sampling was last performed in October 2009. The next triennial sampling will be conducted in 2012.

Referenced Notes:
1. Rainbow trout acute toxicity, 96-hr static, percent survival, sampled annually in October coincident with effluent sampling.
2. Effluent limitation in system discharge as specified in Order No. R2-2009-0059, VOC General NPDES Permit No. CAG912003.
Shading indicates information from current quarter.
--- = not applicable, not required
ºC = degrees Celsius
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
NE = not established
NPDES = National Pollutant Discharge Elimination System
NTU = nephelometric turbidity units
µS/cm = micro Siemens per centimeter
VOC = volatile organic compound

Table 7
System 19 VOC Mass Removal Summary
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

	Total Groundwater Extracted[1] (gallons)	Influent VOC Concentration[1,2] (mg/L)	Total VOC Mass Removed[1] (pounds)
January	3,996,500	0.49	16.2
February	4,175,400	0.49	16.9
March	4,931,700	0.49	20.0
April	4,020,000	0.62	20.7
May	4,692,750	0.62	24.1
June	5,494,350	0.62	28.2
July	4,745,250	0.30	12.0
August	5,564,850	0.30	14.0
September	4,480,325	0.30	11.3
October	4,505,175	0.59	22.3
November	5,653,140	0.59	28.0
December	4,277,400	0.59	21.2
2011 Cumulative[1]	56,536,900		234.4

Notes:
1. Total groundwater extracted, influent VOC concentrations, total VOC mass removed, and cumulative values were obtained from the NPDES quarterly reports (Weiss, 2011a,b,c and 2012).
2. Influent samples are analyzed quarterly for System 19.
mg/L = milligrams per liter
NPDES = National Pollutant Discharge Elimination System
VOC = Volatile Organic Compound

Table 8
Summary of 2011 Routine and Non-Routine Maintenance and Operational Activities for System 19
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

2011	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
January 11 – 12	Treatment System	30 hours	Carbon change.	System was restarted.	Not Required
February 3	Treatment System	29 hours	Carbon change.	System was restarted.	Not Required
February 13 – 16	RW-2(B2)	58 hours	Multiple low flow alerts.	Flow transmitter was replaced.	Not Required
February 17 – 18	Treatment System, RW-2(B1)	12 hours	Vault high level alert.	High level alert was triggered by rain. Water was removed from the vault and the system was restarted.	Not Required
February 28	Treatment System	2 hours	Multiple vault high level alerts.	Alerts set off during annual vault inspections.	Not Required
March 1 – 2	Treatment System	27 hours	Carbon change.	System was restarted.	Not Required
March 15	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
March 20	Treatment System, RW-12A	17 hours	Vault high level alert.	High level alert was triggered by rain. Water was removed from the vault and the vault lid was sealed with caulking.	Not Required
March 22 – 23	Treatment System	27 hours	Carbon change.	System was restarted.	Not Required
March 29 – 30	Treatment System, REG-4B(1)	19 hours	Vault high level alert.	High level alert was triggered by rain. Water was removed from the vault and the system was restarted.	Not Required
April 5	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
April 7 – 8	Treatment System	24 hours	Removal of a high point vault.	System was restarted.	Not Required
April 8 – 11	71A	75 hours (The well was not offline for 72 consecutive hours.)	Multiple electrical fault alerts.	Well had trouble restarting after the high point vault removal. The pump saver was replaced. At no point was the well off-line for 72 consecutive hours.	Not Required
April 8 and 11	Treatment System	3 hours	Treatment system was off-line to allow for the troubleshooting of well 71A.	For safety reasons, power to the pump saver panel was shut off while troubleshooting well 71A.	Not Required
April 18	Treatment System	< 1 hour	Replaced the SCVWD effluent flow meter.	System was restarted.	Not Required
April 19 – 20	Treatment System	25 hours	Carbon change.	System was restarted.	Not Required
April 20	RW-24A	1 hour	Multiple low flow alerts.	Leftover carbon from the carbon change had plugged the filters, increasing the pressure in the manifold. RW-24A was not able to pump against this pressure. Filters were changed.	Not Required
April 20 – 23	Treatment System, LDV-12	4 hours	The treatment system was off-line for a total of approximately 4 hours due to two leak detect vault flood alerts.	After the first alert on April 20, the float switch was checked and raised to help determine if there is water in the double containment. The system was restarted. After the second alert on April 23, the pipe was dewatered, the float switch was checked and lowered to its original position, and the system was restarted.	Not Required
May 11	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during testing and repairing of the sump High/High Level alert.	Not Required
May 11 – 12	Treatment System	14 hours	Sump high level alert.	The basket strainer in the sump was packed with debris, and the sump pump's motor starter had tripped. The basket strainer was cleaned, and the motor starter was reset.	Not Required
May 18 – 19	Treatment System	21 hours	Carbon change.	System was restarted.	Not Required
May 23	Treatment System	< 1 hour	Multiple alerts.	Alerts were set off during electrical maintenance work.	Not Required
June 1	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
June 27	Treatment System	1 hour	Sump high level alert.	Alert was set off during testing and relocating of the level switch.	Not Required
June 28	Treatment System, RW-16(B1)	< 1 hour	Vault high level alert.	High level alert was triggered by rain. Water was removed from the vault and the system was restarted.	Not Required
July 3	Treatment System	6 hours	Power outage.	System was restarted.	Not Required
July 7 – 9	REG-4B(1)	46 hours	Low flow alert.	Flow transmitter and display head were replaced.	Not Required
July 12 – 13	Treatment System	24 hours	Carbon change.	System was restarted.	Not Required
July 20	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
August 5	RW-12A	1 hour	Pump replacement.	Well was restarted.	Not Required
August 12	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
August 31 – September 1	RW-2(B2)	12 hours	Low flow alert.	The flow meter paddle wheel shaft was broken. It was replaced and the well was restarted.	Not Required
September 8 – 9	Treatment System	28 hours	Carbon change.	System was restarted.	Not Required
September 29	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during quarterly O&M testing. System was restarted.	Not Required
October 7	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during monthly O&M testing. System was restarted.	Not Required
October 11	Treatment System, RW-2(B1)	10 hours	Vault high level alert.	Vault level switch was triggered due to rain. Water was pumped out and the system was restarted.	Not Required

Table 8
Summary of 2011 Routine and Non-Routine Maintenance and Operational Activities for System 19
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

2011	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
October 19 – 20	Treatment System	24 hours	Carbon change.	System was restarted.	Not Required
October 24	Treatment System	2 hours	Multiple sump high level alerts.	Alerts were triggered while treating purge water.	Not Required
November 4	Treatment System	< 1 hour	Sump high level alert.	Alert was set off during annual O&M testing. System was restarted.	Not Required
November 8	Treatment System, LDV-5	3 hours	Leak detect vault high level alert.	Water was removed from the containment pipe. System was restarted.	Not Required
November 19 – 24	Sump Pump	1.5 hours	Sump pump malfunction.	Sump pump non-functional. New pump installed on November 24.	Not Required
November 27	RW-2(B2)	14 hours	Pump fault alert.	Pump saver settings were reprogrammed.	Not Required
November 29 – 30	Treatment System	25 hours	Carbon change.	System was restarted.	Not Required
December 2	Treatment system	< 1 hour	Sump high level alert.	Alert was set off during quarterly O&M testing. System was restarted.	Not Required
December 8 – 9	Treatment System	25 hours	Carbon change.	System was restarted.	Not Required
December 21 – 23	RW-1A	41 hours	Well cycled off and did not call an alert.	Pump failed. Pump was replaced.	Not Required
December 23	Treatment System	1 hour	Manual shutdown.	System was shut down to help with the pump replacement.	Not Required
December 26 – 27	71A	23 hours	Low flow alert.	Paddle wheel had corroded. It was replaced, and well was restarted.	Not Required
December 31	RW-12A	3 hours	Low flow alert.	Well was restarted.	Not Required

Notes:

1. The EPA is required to be notified if the treatment system or an extraction well is shut down for 72 consecutive hours. The Water Board is required to be notified if the treatment system is shut down for more than 120 consecutive hours.

Gray shading represents non-routine maintenance

EPA = U.S. Environmental Protection Agency

O&M = operations and maintenance

Table 9

2011 Groundwater Elevations, January Through December 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program

Mountain View, California

Well ID	TOC Elevation (ft msl)	24 March 2011 Depth To Water (feet)	24 March 2011 Groundwater Elevation (ft msl)	15 September 2011 Depth To Water (feet)	15 September 2011 Groundwater Elevation (ft msl)
A/A1					
4A	54.69	12.15	42.54	14.04	40.65
6A	54.74	12.26	42.48	14.21	40.53
9A	55.82	13.85	41.97	15.36	40.46
12A	55.11	13.32	41.79	15.34	39.77
15A	54.06	12.65	41.41	14.42	39.64
16A	53.30	12.27	41.03	13.45	39.85
17A	53.40	12.78	40.62	14.15	39.25
22A	52.87	16.77	36.10	18.20	34.67
23A	50.56	14.52	36.04	15.50	35.06
71A	55.15	13.14	42.01	19.09	36.06
101A	55.14	12.91	42.23	13.74	41.40
115A	53.48	14.44	39.04	15.93	37.55
134A	53.44	12.37	41.07	14.30	39.14
139A	53.21	11.49	41.72	13.75	39.46
140A	56.99	11.76	45.23	12.59	44.40
141A	53.25	8.69	44.56	6.16	47.09
143A	55.72	12.08	43.64	15.06	40.66
148A	53.92	12.28	41.64	14.38	39.54
149A	51.90	15.66	36.24	17.29	34.61
154A	53.90	17.50	36.40	18.91	34.99
155A	54.17	12.81	41.36	14.81	39.36
159A	54.62	13.54	41.08	15.12	39.50
160A	53.89	17.70	36.19	19.09	34.80
161A	56.15	13.81	42.34	14.81	41.34
174A	53.70	12.45	41.25	14.41	39.29
175A	53.86	17.26	36.60	18.69	35.17
RW-1A	53.71	16.79	36.92	17.82	35.89
RW-2A	49.42	14.18	35.24	15.55	33.87
RW-11A	54.87	13.62	41.25	15.60	39.27
RW-12A	53.96	12.24	41.72	14.30	39.66
RW-23A	52.75	15.08	37.67	17.78	34.97
RW-24A	50.15	15.67	34.48	16.75	33.40
RW-26A	53.51	11.14	42.37	13.00	40.51
RW-29A	52.07	27.80	24.27	27.45	24.62
A2/B1					
93B1	55.27	10.90	44.37	12.99	42.28
95B1	56.95	12.80	44.15	14.19	42.76
101B1	54.92	10.73	44.19	11.96	42.96
110B1	53.68	12.90	40.78	14.36	39.32
117B1	53.80	13.08	40.72	14.76	39.04
145B1	54.00	13.60	40.40	15.00	39.00
156B1	50.91	10.75	40.16	12.15	38.76
RW-1(B1)	53.83	12.44	41.39	13.90	39.93
RW-2(B1) (RGRP)	48.18	10.89	37.29	12.02	36.16
RW-10(B1)	52.40	17.55	34.85	20.31	32.09

Table 9

2011 Groundwater Elevations, January Through December 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program

Mountain View, California

Well ID	TOC Elevation (ft msl)	24 March 2011		15 September 2011	
		Depth To Water (feet)	Groundwater Elevation (ft msl)	Depth To Water (feet)	Groundwater Elevation (ft msl)
A2/B1					
RW-11(B1)	50.43	16.39	34.04	17.55	32.88
B2					
40B2 (RGRP)	54.59	30.88	23.71	29.89	24.70
90B2	54.18	10.61	43.57	11.40	42.78
146B2	53.58	15.91	37.67	17.56	36.02
RW-1(B2)	53.49	75.10	-21.61	73.75	-20.26
RW-2(B2)	48.95	17.74	31.21	21.12	27.83

Notes:
ft msl = Feet Mean Sea Level
TOC = Top of Casing
RGRP = Regional Groundwater Remediation Program

Table 10
Groundwater Elevations, Slurry Wall Well Pairs, January 2007 Through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft bgs)	Difference	Flow Direction
Southern Wall - Upgradient Well Pairs						
3/22/2007	140A	44.95	101A	42.68	2.27	Inward
5/24/2007	140A	44.75	101A	42.25	2.50	Inward
8/23/2007	140A	44.32	101A	42.00	2.32	Inward
11/15/2007	140A	43.88	101A	41.84	2.04	Inward
3/27/2008	140A	44.33	101A	42.04	2.29	Inward
5/22/2008	140A	44.43	101A	42.24	2.19	Inward
8/28/2008	140A	43.94	101A	41.64	2.30	Inward
11/20/2008	140A	43.44	101A	41.20	2.24	Inward
3/26/2009	140A	44.03	101A	40.52	3.51	Inward
5/21/2009	140A	44.25	101A	42.26	1.99	Inward
8/27/2009	140A	43.54	101A	41.14	2.40	Inward
11/19/2009	140A	43.14	101A	40.73	2.41	Inward
3/25/2010	140A	44.32	101A	42.25	2.07	Inward
5/27/2010	140A	44.13	101A	41.69	2.44	Inward
8/26/2010	140A	43.88	101A	41.26	2.62	Inward
11/18/2010	140A	43.76	101A	40.93	2.83	Inward
3/24/2011	140A	45.23	101A	42.23	3.00	Inward
5/26/2011	140A	45.07	101A	42.09	2.98	Inward
9/15/2011	140A	44.40	101A	41.40	3.00	Inward
11/10/2011	140A	44.14	101A	41.01	3.13	Inward
3/22/2007	142A	44.65	143A	42.23	2.42	Inward
5/24/2007	142A	45.38	143A	41.77	3.61	Inward
8/23/2007	142A	45.03	143A	41.49	3.54	Inward
11/15/2007	142A	44.56	143A	41.54	3.02	Inward
3/27/2008	142A	43.74	143A	41.96	1.78	Inward
5/22/2008	142A	44.98	143A	41.82	3.16	Inward
8/28/2008	142A	44.95	143A	41.22	3.73	Inward
11/20/2008	142A	44.02	143A	40.62	3.40	Inward
3/26/2009	142A	44.59	143A	41.27	3.32	Inward
5/21/2009	142A	44.85	143A	36.85	8.00	Inward
8/27/2009	142A	44.20	143A	40.67	3.53	Inward
11/19/2009	142A	42.75	143A	40.21	2.54	Inward
3/25/2010	142A	43.77	143A	41.93	1.84	Inward
5/27/2010	142A	43.49	143A	41.78	1.71	Inward
8/26/2010	142A	44.80	143A	40.81	3.99	Inward
11/18/2010	142A	44.39	143A	40.18	4.21	Inward
3/24/2011	142A	45.82	143A	43.64	2.18	Inward
5/26/2011	142A	45.69	143A	41.61	4.08	Inward
9/15/2011	142A	45.08	143A	40.66	4.42	Inward
11/10/2011	142A	44.79	143A	40.21	4.58	Inward
Western Wall - Crossgradient Well Pairs						
3/22/2007	17A	40.08	159A	40.81	-0.73	Outward
5/24/2007	17A	39.83	159A	40.62	-0.79	Outward
8/23/2007	17A	39.49	159A	40.41	-0.92	Outward
11/15/2007	17A	39.37	159A	40.61	-1.24	Outward

Table 10
Groundwater Elevations, Slurry Wall Well Pairs, January 2007 Through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft bgs)	Difference	Flow Direction
3/27/2008	17A	39.84	159A	41.04	-1.20	Outward
5/22/2008	17A	39.75	159A	40.90	-1.15	Outward
8/28/2008	17A	39.30	159A	40.37	-1.07	Outward
11/20/2008	17A	38.72	159A	39.73	-1.01	Outward
3/26/2009	17A	39.56	159A	41.23	-1.67	Outward
5/21/2009	17A	39.79	159A	40.90	-1.11	Outward
8/27/2009	17A	38.80	159A	39.77	-0.97	Outward
11/19/2009	17A	38.37	159A	39.30	-0.93	Outward
3/25/2010	17A	39.80	159A	40.89	-1.09	Outward
5/27/2010	17A	39.69	159A	40.76	-1.07	Outward
8/26/2010	17A	39.38	159A	39.86	-0.48	Outward
11/18/2010	17A	38.69	159A	38.95	-0.26	Outward
3/24/2011	17A	40.62	159A	41.08	-0.46	Outward
5/26/2011	17A	39.92	159A	40.16	-0.24	Outward
9/15/2011	17A	39.25	159A	39.50	-0.25	Outward
11/10/2011	17A	38.97	159A	39.04	-0.07	Outward
Eastern Wall - Crossgradient Well Pairs						
3/22/2007	141A	44.47	139A	41.16	3.31	Inward
5/24/2007	141A	44.33	139A	41.06	3.27	Inward
8/23/2007	141A	44.05	139A	40.77	3.28	Inward
11/15/2007	141A	43.75	139A	40.83	2.92	Inward
3/27/2008	141A	43.89	139A	41.20	2.69	Inward
5/22/2008	141A	43.99	139A	41.01	2.98	Inward
8/28/2008	141A	43.75	139A	40.51	3.24	Inward
11/20/2008	141A	43.23	139A	39.90	3.33	Inward
3/26/2009	141A	43.63	139A	39.76	3.87	Inward
5/21/2009	141A	43.81	139A	41.15	2.66	Inward
8/27/2009	141A	43.35	139A	39.91	3.44	Inward
11/19/2009	141A	43.10	139A	39.41	3.69	Inward
3/25/2010	141A	43.80	139A	41.09	2.71	Inward
5/27/2010	141A	43.25	139A	40.81	2.44	Inward
8/26/2010	141A	43.38	139A	39.99	3.39	Inward
11/18/2010	141A	43.57	139A	39.10	4.47	Inward
3/24/2011	141A	44.56	139A	41.72	2.84	Inward
5/26/2011	141A	44.33	139A	40.23	4.10	Inward
9/15/2011	141A	47.09	139A	39.46	7.63	Inward
11/10/2011	141A	43.92	139A	38.93	4.99	Inward
Northern Wall - Downgradient Well Pairs						
3/22/2007	115A	38.57	134A	40.53	-1.96	Outward
5/24/2007	115A	38.23	134A	40.34	-2.11	Outward
8/23/2007	115A	37.97	134A	40.07	-2.10	Outward
11/15/2007	115A	38.20	134A	40.29	-2.09	Outward
3/27/2008	115A	38.44	134A	40.70	-2.26	Outward
5/22/2008	115A	38.31	134A	40.59	-2.28	Outward
8/28/2008	115A	37.88	134A	39.99	-2.11	Outward
11/20/2008	115A	37.42	134A	39.39	-1.97	Outward

Table 10
Groundwater Elevations, Slurry Wall Well Pairs, January 2007 Through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft bgs)	Difference	Flow Direction
3/26/2009	115A	38.22	134A	40.30	-2.08	Outward
5/21/2009	115A	38.23	134A	40.61	-2.38	Outward
8/27/2009	115A	37.43	134A	39.42	-1.99	Outward
11/19/2009	115A	37.07	134A	39.01	-1.94	Outward
3/25/2010	115A	38.43	134A	40.59	-2.16	Outward
5/27/2010	115A	38.22	134A	40.53	-2.31	Outward
8/26/2010	115A	37.91	134A	39.44	-1.53	Outward
11/18/2010	115A	37.11	134A	38.64	-1.53	Outward
3/24/2011	115A	39.04	134A	41.07	-2.03	Outward
5/26/2011	115A	38.15	134A	39.89	-1.74	Outward
9/15/2011	115A	37.55	134A	39.14	-1.59	Outward
11/10/2011	115A	37.27	134A	38.72	-1.45	Outward
3/22/2007	154A	36.02	155A	41.03	-5.01	Outward
5/24/2007	154A	35.53	155A	40.99	-5.46	Outward
8/23/2007	154A	35.29	155A	40.64	-5.35	Outward
11/15/2007	154A	35.75	155A	40.77	-5.02	Outward
3/27/2008	154A	35.86	155A	41.21	-5.35	Outward
5/22/2008	154A	35.70	155A	41.02	-5.32	Outward
8/28/2008	154A	35.35	155A	40.47	-5.12	Outward
11/20/2008	154A	34.92	155A	39.88	-4.96	Outward
3/26/2009	154A	35.68	155A	40.71	-5.03	Outward
5/21/2009	154A	35.57	155A	41.08	-5.51	Outward
8/27/2009	154A	34.85	155A	39.87	-5.02	Outward
11/19/2009	154A	34.56	155A	39.34	-4.78	Outward
3/25/2010	154A	35.84	155A	41.04	-5.20	Outward
5/27/2010	154A	35.72	155A	40.93	-5.21	Outward
8/26/2010	154A	35.21	155A	40.07	-4.86	Outward
11/18/2010	154A	34.61	155A	39.04	-4.43	Outward
3/24/2011	154A	36.40	155A	41.36	-4.96	Outward
5/26/2011	154A	35.6	155A	40.13	-4.53	Outward
9/15/2011	154A	34.99	155A	39.36	-4.37	Outward
11/10/2011	154A	34.65	155A	38.83	-4.18	Outward
Vertical Gradient Well Pairs						
3/22/2007	110B1	40.29	134A	40.53	-0.24	Downward
5/24/2007	110B1	40.30	134A	40.34	-0.04	Downward
8/23/2007	110B1	39.75	134A	40.07	-0.32	Downward
11/15/2007	110B1	40.44	134A	40.29	0.15	Upward
3/27/2008	110B1	40.29	134A	40.70	-0.41	Downward
5/22/2008	110B1	40.36	134A	40.59	-0.23	Downward
8/28/2008	110B1	39.65	134A	39.99	-0.34	Downward
11/20/2008	110B1	39.10	134A	39.39	-0.29	Downward
3/26/2009	110B1	39.96	134A	40.30	-0.34	Downward
5/21/2009	110B1	40.04	134A	40.61	-0.57	Downward
8/27/2009	110B1	39.08	134A	39.42	-0.34	Downward
11/19/2009	110B1	38.66	134A	39.01	-0.35	Downward
3/25/2010	110B1	40.15	134A	40.59	-0.44	Downward

Table 10
Groundwater Elevations, Slurry Wall Well Pairs, January 2007 Through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft bgs)	Difference	Flow Direction
5/27/2010	110B1	39.68	134A	40.53	-0.85	Downward
8/26/2010	110B1	39.10	134A	39.44	-0.34	Downward
11/18/2010	110B1	38.79	134A	38.64	0.15	Upward
3/24/2011	110B1	40.78	134A	41.07	-0.29	Downward
5/26/2011	110B1	39.89	134A	39.89	0.00	Downward
9/15/2011	110B1	39.32	134A	39.14	0.18	Upward
11/10/2011	110B1	38.98	134A	38.72	0.26	Upward
3/22/2007	117B1	40.16	12A	41.37	-1.21	Downward
5/24/2007	117B1	41.03	12A	41.09	-0.06	Downward
8/23/2007	117B1	40.19	12A	40.88	-0.69	Downward
11/15/2007	117B1	41.48	12A	40.96	0.52	Upward
3/27/2008	117B1	40.94	12A	41.42	-0.48	Downward
5/22/2008	117B1	41.03	12A	42.41	-1.38	Downward
8/28/2008	117B1	40.32	12A	40.66	-0.34	Downward
11/20/2008	117B1	39.84	12A	40.13	-0.29	Downward
3/26/2009	117B1	40.59	12A	40.95	-0.36	Downward
5/21/2009	117B1	40.78	12A	42.40	-1.62	Downward
8/27/2009	117B1	39.75	12A	41.79	-2.04	Downward
11/19/2009	117B1	39.35	12A	39.61	-0.26	Downward
3/25/2010	117B1	40.77	12A	41.25	-0.48	Downward
5/27/2010	117B1	40.24	12A	41.12	-0.88	Downward
8/26/2010	117B1	39.80	12A	42.10	-2.30	Downward
11/18/2010	117B1	38.61	12A	39.25	-0.64	Downward
3/24/2011	117B1	40.72	12A	41.79	-1.07	Downward
5/26/2011	117B1	39.68	12A	40.57	-0.89	Downward
9/15/2011	117B1	39.04	12A	39.77	-0.73	Downward
11/10/2011	117B1	38.7	12A	39.33	-0.63	Downward
3/22/2007	93B1	43.99	101A	42.68	1.31	Upward
5/24/2007	93B1	43.85	101A	42.25	1.60	Upward
8/23/2007	93B1	43.18	101A	42.00	1.18	Upward
3/27/2008	93B1	43.61	101A	42.04	1.57	Upward
5/22/2008	93B1	43.82	101A	42.24	1.58	Upward
8/28/2008	93B1	42.97	101A	41.64	1.33	Upward
11/20/2008	93B1	42.26	101A	41.20	1.06	Upward
3/26/2009	93B1	43.31	101A	40.52	2.79	Upward
5/21/2009	93B1	43.47	101A	42.26	1.21	Upward
8/27/2009	93B1	42.42	101A	41.14	1.28	Upward
11/19/2009	93B1	41.99	101A	40.73	1.26	Upward
3/25/2010	93B1	43.53	101A	42.25	1.28	Upward
5/27/2010	93B1	43.52	101A	41.69	1.83	Upward
8/26/2010	93B1	42.61	101A	41.26	1.35	Upward
11/18/2010	93B1	42.35	101A	40.93	1.42	Upward
3/24/2011	93B1	44.37	101A	42.23	2.14	Upward
5/26/2011	93B1	43.77	101A	42.09	1.68	Upward
9/15/2011	93B1	42.28	101A	41.40	0.88	Upward
11/10/2011	93B1	42.77	101A	41.01	1.76	Upward

Table 10
Groundwater Elevations, Slurry Wall Well Pairs, January 2007 Through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft bgs)	Difference	Flow Direction
3/22/2007	98B1	42.02	15A	41.20	0.82	Upward
5/24/2007	98B1	41.88	15A	41.08	0.80	Upward
8/23/2007	98B1	41.33	15A	40.77	0.56	Upward
11/15/2007	98B1	41.35	15A	40.88	0.47	Upward
3/27/2008	98B1	41.71	15A	41.28	0.43	Upward
5/22/2008	98B1	41.80	15A	41.06	0.74	Upward
8/28/2008	98B1	41.15	15A	40.58	0.57	Upward
11/20/2008	98B1	40.46	15A	39.97	0.49	Upward
3/26/2009	98B1	41.35	15A	40.87	0.48	Upward
5/21/2009	98B1	41.51	15A	41.15	0.36	Upward
8/27/2009	98B1	40.60	15A	39.99	0.61	Upward
11/19/2009	98B1	40.20	15A	39.51	0.69	Upward
3/25/2010	98B1	41.57	15A	41.11	0.46	Upward
5/27/2010	98B1	41.00	15A	41.02	-0.02	Downward
8/26/2010	98B1	40.86	15A	40.29	0.57	Upward
11/18/2010	98B1	40.32	15A	39.31	1.01	Upward
3/24/2011	98B1	42.32	15A	41.41	0.91	Upward
5/26/2011	98B1	41.52	15A	40.39	1.13	Upward
9/15/2011	98B1	40.97	15A	39.64	1.33	Upward
11/10/2011	98B1	40.61	15A	39.14	1.47	Upward
3/22/2007	RW-1(B1)	40.79	159A	40.81	-0.02	Downward
5/24/2007	RW-1(B1)	40.74	159A	40.62	0.12	Upward
8/23/2007	RW-1(B1)	40.19	159A	40.41	-0.22	Downward
11/15/2007	RW-1(B1)	40.72	159A	40.61	0.11	Upward
3/27/2008	RW-1(B1)	40.74	159A	41.04	-0.30	Downward
5/22/2008	RW-1(B1)	40.78	159A	40.90	-0.12	Downward
8/28/2008	RW-1(B1)	40.08	159A	40.37	-0.29	Downward
11/20/2008	RW-1(B1)	39.53	159A	39.73	-0.20	Downward
3/26/2009	RW-1(B1)	40.39	159A	41.23	-0.84	Downward
5/21/2009	RW-1(B1)	40.47	159A	40.90	-0.43	Downward
8/27/2009	RW-1(B1)	39.53	159A	39.77	-0.24	Downward
11/19/2009	RW-1(B1)	39.58	159A	39.30	0.28	Upward
3/25/2010	RW-1(B1)	40.58	159A	40.89	-0.31	Downward
5/27/2010	RW-1(B1)	40.44	159A	40.76	-0.32	Downward
8/26/2010	RW-1(B1)	39.62	159A	39.86	-0.24	Downward
11/18/2010	RW-1(B1)	39.30	159A	38.95	0.35	Upward
3/24/2011	RW-1(B1)	41.39	159A	41.08	0.31	Upward
5/26/2011	RW-1(B1)	40.46	159A	40.16	0.30	Upward
9/15/2011	RW-1(B1)	39.93	159A	39.50	0.43	Upward
11/10/2011	RW-1(B1)	39.42	159A	39.04	0.38	Upward

Notes:
ft msl = Feet Mean Sea Level
ft bgs = Feet Below Ground Surface

Table 11
Calculation of Predicted Capture Widths Based on Combined Flow Rate
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, CA

Parameter	A-Zone[1]	A-Zone Slurry Wall[2]	B1-Zone[1]	B2-Zone[1]
Q = Combined pumping rate (gpm)	12.9	32.4	28.2	12.7
b = saturated aquifer thickness (ft)	15	15	25	35
i = regional hydraulic gradient (ft/ft)	0.004	0.004	0.003	0.004
K = hydraulic conductivity (ft/day)[3]	40	40	40	5
Calculated Capture Width (ft) = Q/(K x b x i)	1000	2600	1800	3500
Measured plume width at widest point (ft)[4]	662	630	662	662

Notes:

1. The combined pumping rate equals the summed average 2011 flow rates of all extraction wells located within the Fairchild Building 13, 19, and 23 Site that are outside the slurry wall
2. The combined pumping rate equals the summed average 2011 flow rates of all extraction wells located within the Fairchild Building Building 13, 19, and 23 Site slurry wall
3. Hydraulic conductivity values used for each aquifer zone are from the numerical model included as Appendix B to the 2008 Optimization Report
4. Measured plume width at widest point is not continued past Site boundaries, site width is approximately 662 feet

1 cubic foot = 7.48 gallons

1 day = 1440 minutes

gpm = gallons per minute; ft = feet

Assumptions:

1. Homogeneous, isotropic, confined aquifer of infinite extent
2. Uniform regional horizontal hydraulic gradient
3. No net recharge (or net recharge is accounted for in the regional hydraulic gradient)
4. Uniform aquifer thickness
5. Fully penetrating extraction well
6. Steady-state flow
7. Negligible vertical gradient

Table 12
VOC Analytical Results
Five Year Summary, January 2007 through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A/A1 Zone													
4A	11/12/2007	<140	**390**	<71	**490**	**1900**	<71	<130	<2900	<71	<71	**16000**	**180**
4A	11/18/2008	<83	**100**	<42	**180**	**390**	<42	**110**	<1700	<42	<42	**6000**	<42
4A	11/6/2009	<83	**350**	<42	**470**	**6800**	<42	<170	<1700	<42	<42	**11000**	**240**
4A	11/10/2010	<10	**13**	<5.0	**37**	**80**	<5.0	**24**	<20	<5.0	**5.9**	**950**	**5.1**
4A	9/28/2011	<71	**52**	<36	**100**	**660**	<36	<140	<140	<36	<36	**4000**	**46**
6A	11/12/2007	<6.3	**4.5**	<3.1	**17**	**17**	<3.1	<3.1	<130	<3.1	<3.1	**380**	<3.1
9A	11/12/2007	<5.0	**6.4**	<2.5	**6.4**	**290**	<2.5	<2.5	<100	<2.5	<2.5	**16**	**15**
12A	11/12/2007	<25	<13	<13	<13	**390**	**14**	<13	<500	<13	<13	**1500**	<13
15A	11/9/2007	<1.0	**3.2**	<0.5	**2.2**	**23**	<0.5	**1.1**	<20	<0.5	<0.5	**92**	<0.5
16A	11/21/2007	<1.0	<0.5	<0.5	<0.5	**2.2**	<0.5	**0.8**	<20	<0.5	<0.5	**56**	<0.5
16A	11/6/2008	**0.77**	<0.50	<0.50	<0.50	**3.0**	<0.50	**0.82**	<0.50	<0.50	<0.50	**47**	<0.50
16A	11/2/2009	<1.0	<0.5	<0.5	<0.5	**2.9**	<0.5	<2.0	<20	<0.5	<0.5	**64**	<0.5
16A	11/3/2010	<1.0	<0.5	<0.5	<0.5	**2.6**	<0.5	<2.0	<2.0	<0.5	<0.5	**56**	<0.5
16A	9/27/2011	<1.0	<0.5	<0.5	<0.5	**1.6**	<0.5	<2.0	<2.0	<0.5	<0.5	**50**	<0.5
17A	12/11/2008	<1.0	<0.5	<0.5	<0.5	**4.9**	<0.5	**1.4**	<20	<0.5	<0.5	**82**	<0.5
17A	11/2/2009	<1.4	<0.7	<0.7	<0.7	**3.8**	<0.7	<2.9	<29	<0.7	<0.7	**87**	<0.7
17A	11/3/2010	<1.0	<0.5	<0.5	<0.5	**5.7**	<0.5	<2.0	<2.0	<0.5	<0.5	**68**	<0.5
17A	9/27/2011	<1.0	<0.5	<0.5	<0.5	**4.0**	<0.5	<2.0	<2.0	<0.5	<0.5	**50**	<0.5
22A	11/11/2008	<1.4	**1.6**	<0.7	**2.2**	**17**	<0.7	**160**	<29	<0.7	**2.7**	**150**	<0.7
22A	11/23/2009	<1.4	**1.6**	<0.7	**1.7**	**20**	**1**	**110**	<29	<0.7	**2.4**	**100**	<0.7
22A	11/22/2010	<1.0	**1.8**	<0.5	**2.4**	**34**	**0.6**	**150**	<2.0	<0.5	**2.3**	**110**	<0.5
22A	9/22/2011	<2.0	<1.0	<1.0	<1.0	**19**	<1.0	**47**	<4.0	<1.0	**1.0**	**97**	<1.0
23A	11/2/2007	<1.0	**4.6**	<0.5	**7.1**	**45**	**0.6**	**5.8**	<20	<0.5	<0.5	**99**	<0.5
23A	11/6/2008	<0.50	**6.6**	<0.50	**10**	**54**	<0.50	**5.1**	<0.50	<0.50	<0.50	**96**	<0.50
23A	11/16/2009	<1.0	**1.2**	<0.5	**1.7**	**13**	<0.5	**3.3**	<20	<0.5	<0.5	**30**	<0.5
23A	11/11/2010	<1.0	<0.5	<0.5	<0.5	**0.7**	<0.5	**2.7**	<2.0	<0.5	<0.5	**3.0**	<0.5
23A	9/2/2011	<1.0	<0.5	<0.5	<0.5	**0.5**	<0.5	**2.6**	<2.0	<0.5	<0.5	**1.7**	<0.5
71A	8/8/2007	<14	<7.1	<7.1	<7.1	**130**	<7.1	**15**	<290	<7.1	<7.1	**900**	<7.1

Table 12
VOC Analytical Results
Five Year Summary, January 2007 through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A/A1 Zone													
71A	11/13/2007	<17	<8.3	<8.3	**11**	**1100**	**37**	**9.6**	<330	<8.3	<8.3	**400**	**220**
71A	12/4/2008	<25	<13	<13	**17**	**2500**	**75**	<13	<500	<13	<13	**34**	**910**
71A	11/23/2009	<25	<13	<13	**15**	**2300**	**68**	<50	<500	<13	<13	**20**	**610**
71A	11/10/2010	<7.1	<3.6	<3.6	**11**	**160**	**3.8**	<14	**19**	<3.6	<3.6	**530**	**25**
71A	9/16/2011	<20	<10	<10	<10	**310**	<10	<40	<40	<10	<10	**1600**	**33**
101A	11/9/2007	<1.0	**0.5**	<0.5	<0.5	**16**	<0.5	**2.0**	<20	<0.5	<0.5	**88**	**0.9**
115A	12/11/2008	<1.0	**4.5**	<0.5	**1.6**	**19**	<0.5	**3.8**	<20	<0.5	<0.5	**4.4**	<0.5
115A	11/2/2009	<1.0	**5.9**	<0.5	**2.5**	**43**	<0.5	**4.7**	<20	<0.5	<0.5	**4.3**	**0.7**
115A	11/2/2010	<1.0	**6.6**	<0.5	**4.7**	**110**	<0.5	**4.3**	<2.0	<0.5	<0.5	**4.1**	**1**
115A	9/27/2011	<4.0	**4.9**	<2.0	**3.6**	**180**	**3.7**	<8.0	<8.0	<2.0	<2.0	**5.3**	<2.0
134A	11/12/2007	<1.0	**2.9**	<0.5	**3.0**	**3.5**	<0.5	**20**	<20	<0.5	**11**	**54**	<0.5
134A	12/11/2008	<1.0	**3.2**	<0.5	**3.7**	**5.5**	<0.5	**27**	<20	<0.5	**13**	**52**	<0.5
134A	11/3/2009	<1.0	**3.1**	<0.5	**4.7**	**9.0**	<0.5	**25**	<20	<0.5	**11**	**57**	<0.5
134A	11/10/2010	<1.0	**2.7**	<0.5	**3.6**	**9.8**	<0.5	**17**	<2.0	<0.5	**9.0**	**49**	<0.5
134A	9/27/2011	<1.0	**1.9**	<0.5	**2.7**	**7.8**	<0.5	**11**	<2.0	<0.5	**4.7**	**47**	<0.5
139A	11/9/2007	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5
139A	11/17/2010	<1.0	**2.8**	<0.5	**2.6**	**11**	**0.7**	<2.0	<2.0	<0.5	**0.5**	**54**	<0.5
139A D	11/17/2010	<1.0	**2.9**	<0.5	**2.5**	**11**	**0.6**	<2.0	<2.0	<0.5	**0.5**	**54**	<0.5
141A	11/17/2010	<1.0	<0.5	<0.5	**0.7**	<0.5	<0.5	<2.0	<2.0	<0.5	**1.4**	**41**	<0.5
143A	11/9/2007	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	**10**	<20	**0.6**	<0.5	**4.9**	<0.5
148A	11/12/2007	<17	<8.3	<8.3	<8.3	**54**	<8.3	**34**	<330	<8.3	<8.3	**940**	<8.3
149A	11/6/2008	<0.50	**3.4**	<0.50	**5.6**	**340**	**2.7**	**6.3**	<0.50	<0.50	<0.50	**100**	**3.5**
149A	11/16/2009	<13	**10**	<6.3	**13**	**1200**	**10**	<25	<250	<6.3	<6.3	**42**	**8.8**
149A	11/15/2010	<1.0	<0.5	<0.5	**1.6**	**5.1**	<0.5	**4.6**	<2.0	<0.5	**1.5**	**94**	<0.5
149A	9/2/2011	<2.0	<1.0	<1.0	<1.0	**6.2**	<1.0	<4.0	<4.0	<1.0	**1.0**	**99**	<1.0
154A	12/11/2008	<2.0	**3.1**	<1.0	**4.7**	**79**	**1.5**	**19**	<40	<1.0	**7.6**	**270**	**1.5**
154A	11/6/2009	<2.5	**4.0**	<1.3	**4.1**	**92**	**1.9**	**13**	<50	<1.3	**6.8**	**250**	**2.2**
154A	11/10/2010	<2.5	**3.5**	<1.3	**7.1**	**110**	<1.3	**18**	<5.0	<1.3	**6.6**	**290**	**2.5**

Table 12
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Five Year Summary, January 2007 through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A/A1 Zone													
154A	9/27/2011	<5.0	**3.0**	<2.5	**4.6**	**100**	<2.5	**13**	<10	<2.5	**4.8**	**300**	<2.5
155A	11/12/2007	<8.3	**9.3**	<4.2	**6.3**	**24**	<4.2	**17**	<170	<4.2	**13**	**490**	<4.2
155A	12/11/2008	<2.5	**8.0**	<1.3	**7.5**	**23**	<1.3	**6.8**	<50	**1.4**	**11**	**400**	<1.3
155A	11/6/2009	<3.3	**5.9**	<1.7	**6.3**	**18**	<1.7	<6.7	<67	<1.7	**7.0**	**260**	<1.7
155A	11/10/2010	<3.3	**11**	<1.7	**13**	**17**	<1.7	**8.8**	<6.7	<1.7	**14**	**340**	<1.7
155A	9/27/2011	<5.0	**12**	<2.5	**9.0**	**20**	<2.5	<10	<10	<2.5	**13**	**340**	<2.5
159A	11/12/2007	<3.3	<1.7	<1.7	<1.7	**5.3**	<1.7	**2.1**	<67	<1.7	<1.7	**180**	<1.7
159A	11/17/2010	<5.0	<2.5	<2.5	<2.5	**7.9**	<2.5	<10	<10	<2.5	<2.5	**370**	<2.5
159A	9/28/2011	<8.3	<4.2	<4.2	<4.2	**9.3**	<4.2	<17	<17	<4.2	<4.2	**480**	<4.2
160A	11/8/2007	<3.3	<1.7	<1.7	<1.7	**50**	**3.0**	**13**	<67	<1.7	**3.9**	**180**	<1.7
160A	11/6/2008	<0.50	**4.7**	<0.50	<0.50	**210**	**3.3**	**83**	<0.50	<0.50	**5.7**	**390**	**1.1**
160A	11/17/2009	<6.3	**15**	<3.1	**17**	**380**	**5.8**	**450**	<130	<3.1	**9.4**	**500**	<3.1
160A	11/15/2010	<6.3	**11**	<3.1	**15**	**390**	**7.7**	**290**	<13	<3.1	**8.1**	**550**	**3.8**
160A	10/3/2011	<13	**11**	<6.3	**11**	**330**	**9.2**	**250**	<25	<6.3	**6.6**	**520**	<6.3
161A	11/12/2007	<130	<63	<63	<63	**11000**	**1400**	**170**	<2500	<63	<63	**5600**	<63
174A	11/8/2007	<5.0	**8.0**	<2.5	**7.4**	**21**	<2.5	**5.9**	<100	**3.1**	**8.3**	**280**	<2.5
174A	12/11/2008	<1.0	**1.7**	<0.5	**2.0**	**4.0**	<0.5	**2.6**	<20	**3.2**	**3.4**	**140**	<0.5
174A	11/3/2009	<2.0	**1.8**	<1.0	**2.1**	**4.0**	<1.0	<4.0	<40	**2.8**	**2.8**	**130**	<1.0
174A	11/5/2010	<3.3	**10**	<1.7	**7.5**	**13**	<1.7	<6.7	<6.7	**2.1**	**9.6**	**170**	<1.7
174A	9/9/2011	<4.0	**17**	<2.0	**7.2**	**26**	<2.0	**11**	<8.0	**2.1**	**13**	**220**	<2.0
175A	12/11/2008	<1.7	**11**	<0.8	**4.8**	**20**	<0.8	**9.2**	<33	**1.2**	**8.5**	**170**	<0.8
175A	11/16/2009	<2.0	**13**	<1.0	**6.6**	**26**	<1.0	**9.1**	<40	**1.1**	**9.2**	**150**	<1.0
175A	11/11/2010	<2.0	**11**	<1.0	**3.3**	**21**	<1.0	**7.5**	<4.0	<1.0	**7.1**	**120**	<1.0
175A	9/1/2011	<2.0	**7.4**	<1.0	**3.1**	**20**	<1.0	**4.9**	<4.0	<1.0	**4.0**	**100**	<1.0
RW-1A	8/8/2007	<1.4	<0.7	<0.7	<0.7	**3.6**	**0.7**	**1.0**	<29	<0.7	<0.7	**100**	<0.7
RW-1A	11/13/2007	<2.0	<1.0	<1.0	<1.0	**15**	**19**	<1.0	<40	<1.0	<1.0	**110**	<1.0
RW-1A	11/15/2008	<1.0	**0.6**	<0.5	**1.1**	**6.9**	**1.3**	**2.5**	<20	<0.5	**1.4**	**130**	<0.5
RW-1A	11/3/2009	<1.0	**0.7**	<0.5	**1.7**	**3.9**	**0.7**	**2.9**	<20	<0.5	**1.6**	**140**	<0.5

Table 12
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Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A/A1 Zone													
RW-1A	11/5/2010	<1.4	<0.7	<0.7	<0.7	**3.5**	**0.9**	<2.9	<2.9	<0.7	<0.7	**96**	<0.7
RW-1A	9/16/2011	**1.1**	<0.5	<0.5	<0.5	**5.8**	**1.0**	<2.0	<2.0	<0.5	<0.5	**87**	<0.5
RW-2A	11/13/2007	<6.3	**7.0**	<3.1	**10**	**310**	<3.1	**32**	<130	<3.1	**9.6**	**520**	<3.1
RW-2A	11/6/2008	**0.54**	**2.1**	<0.50	**3.4**	**83**	**1.0**	**11**	<0.50	<0.50	**3.9**	**170**	<0.50
RW-2A	11/12/2009	<1.0	**2.3**	<0.5	**3.3**	**89**	**1**	**11**	<20	<0.5	**4.4**	**180**	<0.5
RW-2A	11/15/2010	<2.5	**1.3**	<1.3	**3.5**	**81**	**1.5**	**12**	<5.0	<1.3	**3.0**	**200**	<1.3
RW-2A	9/2/2011	<5.0	<2.5	<2.5	**2.6**	**93**	<2.5	<10	<10	<2.5	<2.5	**240**	<2.5
RW-2A D	9/2/2011	<4.0	<2.0	<2.0	**2.3**	**89**	<2.0	**8.8**	<8.0	<2.0	**2.3**	**230**	<2.0
RW-11A	8/8/2007	<71	<36	<36	<36	**1300**	<36	**150**	<1400	<36	<36	**4600**	**130**
RW-11A	11/14/2007	<20	**22**	<10	**34**	**1100**	**26**	**180**	<400	<10	**39**	**4600**	**120**
RW-11A	11/4/2008	<50	<25	<25	**39**	**850**	<25	**180**	<1000	<25	**28**	**3100**	**120**
RW-11A	11/2/2009	<3.3	**20**	<1.7	**35**	**770**	**8.5**	**180**	<67	<1.7	**28**	**3300**	**50**
RW-11A D	11/2/2009	<3.3	**20**	<1.7	**27**	**760**	**30**	**190**	<67	<1.7	**30**	**3200**	**48**
RW-11A	12/7/2010	<14	**19**	<7.1	**34**	**310**	<7.1	**100**	<29	<7.1	**20**	**1600**	**17**
RW-11A D	12/7/2010	<17	**20**	<8.3	**35**	**320**	<8.3	**110**	<33	<8.3	**21**	**1600**	**19**
RW-11A	9/16/2011	<33	<17	<17	**29**	**260**	<17	**100**	<67	<17	**28**	**1600**	<17
RW-11A D	9/16/2011	<25	**18**	<13	**33**	**260**	<13	**100**	<50	<13	**25**	**1600**	**14**
RW-12A	8/8/2007	<25	<13	<13	<13	**1100**	**18**	**17**	<500	<13	<13	**1700**	**29**
RW-12A	11/13/2007	<25	<13	<13	<13	**1300**	**31**	<13	<500	<13	<13	**1800**	**69**
RW-12A	11/17/2008	<20	<10	<10	<10	**1100**	**37**	**15**	<400	<10	<10	**1400**	**62**
RW-12A	11/23/2009	<20	<10	<10	<10	**2100**	**37**	<40	<400	<10	<10	**1900**	**110**
RW-12A	12/7/2010	<40	<20	<20	<20	**3500**	**38**	<80	<80	<20	<20	**3400**	**130**
RW-12A	9/16/2011	<63	<31	<31	<31	**3400**	**50**	<130	<130	<31	<31	**2800**	**150**
RW-23A	8/8/2007	<10	**8.5**	<5.0	**7.0**	**64**	<5.0	**13**	<200	<5.0	**5.2**	**570**	<5.0
RW-23A	11/14/2007	<10	**7.8**	<5.0	<5.0	**50**	<5.0	**23**	<200	<5.0	**5.6**	**580**	<5.0
RW-23A	11/4/2008	<7.1	**8.1**	<3.6	**6.2**	**54**	<3.6	**12**	<140	<3.6	**5.4**	**560**	<3.6
RW-23A	11/6/2009	<2.5	**12**	<1.3	**5.2**	**66**	**1.4**	**9.3**	<50	**2.0**	**4.9**	**520**	<1.3
RW-23A	12/9/2010	<5.0	**13**	<2.5	**10**	**67**	<2.5	**17**	<10	<2.5	**8.5**	**550**	<2.5
RW-23A	9/16/2011	<10	**11**	<5.0	**6.8**	**90**	<5.0	<20	<20	<5.0	**6.6**	**520**	<5.0

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		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A/A1 Zone													
RW-24A	11/13/2007	<8.3	**8.9**	<4.2	**13**	**760**	**7.8**	**59**	<170	<4.2	**18**	**680**	<4.2
RW-24A	11/6/2008	<0.50	**6.4**	<0.50	**11**	**460**	**5.0**	**25**	<0.50	<0.50	**8.8**	**440**	**6.0**
RW-24A	11/12/2009	<5.0	**7.7**	<2.5	**11**	**550**	**26**	**31**	<100	<2.5	**7.7**	**410**	**9.8**
RW-24A	11/15/2010	<5.0	**4.2**	<2.5	**8.4**	**430**	**6.9**	**23**	<10	<2.5	**4.3**	**310**	**5.2**
RW-24A	9/2/2011	<7.1	**4.4**	<3.6	**7.5**	**460**	**6.6**	**19**	<14	<3.6	<3.6	**350**	**5.2**
RW-26A	8/8/2007	<2.5	<1.3	<1.3	**2.1**	**10**	<1.3	**3.6**	<50	<1.3	<1.3	**160**	<1.3
RW-26A	11/13/2007	<3.3	**3.9**	<1.7	**7.4**	**120**	**2.8**	**4.0**	<67	<1.7	**2.4**	**190**	<1.7
RW-26A	11/15/2008	<1.0	**3.3**	<0.5	**6.0**	**130**	**1.6**	**3.1**	<20	<0.5	**0.9**	**110**	<0.5
RW-26A	11/23/2009	<2.0	**3.4**	<1.0	**9.4**	**83**	**1.1**	**5.4**	<40	<1.0	**2.4**	**180**	<1.0
RW-26A	12/3/2010	<1.0	**4.0**	<0.5	**8.8**	**91**	**2.8**	**5.2**	<2.0	<0.5	**2.7**	**160**	<0.5
RW-26A	10/14/2011	<2.5	**3.5**	<1.3	**8.8**	**89**	**1.8**	**5.3**	<5.0	<1.3	**2.6**	**170**	<1.3
RW-29A	8/9/2007	<3.3	<1.7	<1.7	<1.7	**5.8**	<1.7	**1.4**	<67	**1.8**	**2.1**	**230**	<1.7
RW-29A	11/14/2007	<3.3	<1.7	<1.7	<1.7	**3.8**	<1.7	**2.0**	<67	<1.7	**3.9**	**230**	<1.7
RW-29A	11/4/2008	<3.3	<1.7	<1.7	**2.1**	**3.6**	<1.7	**2.0**	<67	**1.8**	**3.8**	**240**	<1.7
RW-29A	11/2/2009	<2.0	**1.5**	<1.0	**1.8**	**5.3**	**1.3**	<4.0	<40	**2.0**	**3.9**	**210**	<1.0
RW-29A	11/5/2010	<2.0	**3.9**	<1.0	**2.9**	**7.4**	<1.0	<4.0	<4.0	**1.2**	**3.1**	**160**	<1.0
RW-29A	9/16/2011	<3.3	**4.3**	<1.7	**2.3**	**9.4**	<1.7	<6.7	<6.7	<1.7	**2.8**	**180**	<1.7
A2/B1 Zone													
95B1	11/2/2007	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**13**	<0.5
95B1	11/5/2008	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**5.8**	<0.5
95B1	11/3/2009	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	**7.4**	<0.5
95B1	11/4/2010	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	**4.9**	<0.5
95B1	9/9/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	**5.7**	<0.5
101B1	11/9/2007	<1.0	**1.6**	<0.5	**1.6**	**50**	<0.5	**0.8**	<20	<0.5	**0.7**	**69**	<0.5
101B1	11/18/2008	<1.0	**1.2**	<0.5	**1.2**	**38**	<0.5	<0.5	<20	<0.5	<0.5	**53**	<0.5
101B1	11/3/2009	<1.0	**1.2**	<0.5	**1.2**	**41**	<0.5	<2.0	<20	<0.5	<0.5	**51**	<0.5
101B1	11/4/2010	<1.0	**1.2**	<0.5	**1**	**34**	**0.8**	<2.0	<2.0	<0.5	**0.5**	**51**	<0.5
101B1	9/9/2011	<1.0	**1.1**	<0.5	**0.9**	**32**	<0.5	<2.0	<2.0	<0.5	<0.5	**37**	<0.5

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		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
A2/B1 Zone													
110B1	11/8/2007	<4.0	<2.0	<2.0	**2.6**	**10**	<2.0	**44**	<80	<2.0	**28**	**210**	<2.0
110B1	11/5/2008	<3.3	<1.7	<1.7	**2.1**	**17**	<1.7	**30**	<67	<1.7	**13**	**290**	<1.7
110B1	11/3/2009	<5.0	<2.5	<2.5	<2.5	**28**	<2.5	**24**	<100	<2.5	**7.7**	**440**	<2.5
110B1 D	11/15/2010	<1.7	<1.7	<1.7	**3.1**	**15**	<1.7	**60**	<67	<1.7	**39**	**360**	<1.7
110B1	11/15/2010	<1.7	<1.7	<1.7	**2.4**	**13**	<1.7	**60**	<67	<1.7	**38**	**350**	<1.7
110B1	9/28/2011	<5.0	<2.5	<2.5	**3.8**	**7.2**	<2.5	**67**	<10	<2.5	**29**	**260**	<2.5
117B1	11/8/2007	<25	<13	<13	<13	**40**	<13	<13	<500	<13	<13	**2000**	<13
117B1	11/18/2008	<2.5	<1.3	<1.3	<1.3	**200**	**5.2**	**1.3**	<50	<1.3	<1.3	**200**	<1.3
117B1	11/6/2009	<1.3	<0.6	<0.6	<0.6	**110**	**1.3**	<2.5	<25	<0.6	<0.6	**110**	**0.9**
117B1	11/10/2010	<2.5	<1.3	<1.3	**1.4**	**460**	**7.2**	<5.0	<5.0	<1.3	<1.3	**150**	<1.3
117B1	9/28/2011	<7.1	<3.6	<3.6	<3.6	**430**	**11**	<14	<14	<3.6	<3.6	**200**	<3.6
145B1	11/8/2007	<1.4	**0.7**	<0.7	<0.7	**30**	**1.4**	<0.7	<29	<0.7	<0.7	**100**	<0.7
145B1	11/5/2008	<1.0	<0.5	<0.5	<0.5	**3.1**	<0.5	<0.5	<20	<0.5	<0.5	**1.2**	**2.9**
145B1	11/2/2009	<1.0	**0.8**	<0.5	**1.1**	**32**	**1.5**	<2.0	<20	<0.5	<0.5	**120**	**0.8**
145B1	11/4/2010	<1.0	**0.7**	<0.5	**0.9**	**26**	**1.5**	<2.0	<2.0	<0.5	<0.5	**97**	**1.5**
145B1	9/28/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	**2.2**
156B1	12/11/2008	<1.0	**2.9**	<0.5	**1.9**	**49**	**0.7**	**1.5**	<20	<0.5	**0.5**	**81**	<0.5
156B1	11/12/2009	<1.0	**1.6**	<0.5	<0.5	**21**	<0.5	<2.0	<20	<0.5	<0.5	**48**	<0.5
156B1	11/11/2010	<1.0	**1.7**	<0.5	**0.6**	**22**	<0.5	<2.0	<2.0	<0.5	<0.5	**40**	<0.5
156B1	9/1/2011	<1.0	**1.7**	<0.5	**0.8**	**25**	<0.5	<2.0	<2.0	<0.5	<0.5	**46**	<0.5
RW-1(B1)	11/8/2007	<1.0	<0.5	<0.5	<0.5	**6.9**	<0.5	<0.5	<20	<0.5	<0.5	**1.7**	<0.5
RW-1(B1)	11/15/2008	<1.0	**1.8**	<0.5	**0.7**	**60**	**0.5**	<0.5	<20	<0.5	<0.5	**14**	**0.5**
RW-1(B1)	11/24/2009	<1.0	**2.6**	<0.5	**8.0**	**5.4**	<0.5	**120**	<20	<0.5	**98**	**110**	<0.5
RW-1(B1)	12/3/2010	<1.0	**1.9**	<0.5	**3.9**	**8.9**	<0.5	**41**	<2.0	<0.5	**19**	**96**	<0.5
RW-1(B1)	10/14/2011	<0.50	**1.2**	<0.50	**2.2**	**6.9**	<0.50	**22**	<5.0	<0.50	**9.8**	**73**	<0.50
RW-2(B1) (RGRP)	11/14/2007	<5.0	<2.5	<2.5	**5.0**	**34**	<2.5	**100**	<100	<2.5	**56**	**360**	<2.5
RW-2(B1) (RGRP)	11/11/2008	<3.3	**1.7**	<1.7	**3.3**	**31**	<1.7	**69**	<67	<1.7	**31**	**330**	<1.7
RW-2(B1) (RGRP)	11/23/2009	<3.3	<1.7	<1.7	**3.0**	**29**	<1.7	**56**	<67	<1.7	**27**	**220**	<1.7
RW-2(B1) (RGRP)	12/2/2010	<2.0	**1.4**	<1.0	**2.4**	**27**	<1.0	**46**	<4.0	<1.0	**25**	**270**	<1.0

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A2/B1 Zone													
RW-2(B1) (RGRP)	10/6/2011	<3.3	<1.7	<1.7	**1.9**	**21**	<1.7	**30**	<6.7	<1.7	**15**	**190**	<1.7
RW-10(B1)	8/9/2007	<14	<7.1	<7.1	<7.1	**210**	<7.1	**8.9**	<290	<7.1	<7.1	**790**	<7.1
RW-10(B1)	11/20/2007	<13	<6.3	<6.3	<6.3	**500**	**11**	**9.1**	<250	<6.3	<6.3	**980**	<6.3
RW-10(B1)	11/4/2008	<17	<8.3	<8.3	<8.3	**320**	**9.7**	**9.0**	<330	<8.3	<8.3	**1000**	<8.3
RW-10(B1)	11/2/2009	<5.0	<2.5	<2.5	<2.5	**300**	**17**	<10	<100	<2.5	<2.5	**870**	<2.5
RW-10(B1)	12/7/2010	<6.3	<3.1	<3.1	<3.1	**410**	**10**	<13	<13	<3.1	**4.7**	**650**	<3.1
RW-10(B1)	9/16/2011	<10	<5.0	<5.0	<5.0	**360**	**7.9**	<20	<20	<5.0	**5.6**	**670**	<5.0
RW-11(B1)	11/2/2007	<2.0	**1.0**	<1.0	<1.0	**51**	**2.2**	<1.0	<40	<1.0	<1.0	**120**	<1.0
RW-11(B1)	11/4/2008	<2.0	<1.0	<1.0	<1.0	**43**	**1.3**	<1.0	<40	<1.0	<1.0	**120**	<1.0
RW-11(B1)	11/12/2009	<1.0	**1.3**	<0.5	**0.9**	**57**	**1.6**	<2.0	<20	<0.5	**0.6**	**91**	<0.5
RW-11(B1)	11/15/2010	<1.0	**1**	<0.5	**1.0**	**48**	**2.1**	<2.0	<2.0	<0.5	**0.6**	**99**	<0.5
RW-11(B1) D	9/2/2011	<2.0	<1.0	<1.0	<1.0	**45**	**2.0**	<4.0	<4.0	<1.0	<1.0	**96**	<1.0
RW-11(B1)	9/2/2011	<2.0	<1.0	<1.0	<1.0	**44**	**1.9**	<4.0	<4.0	<1.0	<1.0	**95**	<1.0
B2 Zone													
40B2 (RGRP)	11/6/2008	<2.5	<2.5	<2.5	<2.5	**68**	<2.5	<2.5	<2.5	<2.5	<2.5	**12**	<2.5
40B2 (RGRP)	12/11/2008	<1.0	<0.5	<0.5	<0.5	**48**	<0.5	**4.0**	<20	<0.5	<0.5	**10**	<0.5
40B2 (RGRP)	11/3/2009	<1.0	<0.5	<0.5	<0.5	**11**	**0.5**	<2.0	<20	<0.5	<0.5	**2.0**	<0.5
40B2 (RGRP)	11/3/2010	<1.0	<0.5	<0.5	<0.5	**21**	**0.6**	<2.0	<2.0	<0.5	<0.5	**1.0**	<0.5
40B2 (RGRP)	9/28/2011	<1.0	<0.5	<0.5	<0.5	**9.5**	**0.7**	<2.0	<2.0	<0.5	<0.5	**2.0**	<0.5
90B2	11/8/2007	<3.3	<1.7	<1.7	<1.7	**34**	<1.7	<1.7	<67	<1.7	<1.7	**230**	<1.7
90B2	11/18/2008	<1.0	<0.5	<0.5	**1.2**	**49**	**0.9**	<0.5	<20	<0.5	<0.5	**170**	<0.5
90B2	11/3/2009	<2.5	<1.3	<1.3	<1.3	**22**	<1.3	<5.0	<50	<1.3	<1.3	**150**	<1.3
90B2	11/10/2010	<1.0	<1.0	<1.0	**1.0**	**35**	<1.0	<4.0	<40	<1.0	<1.0	**180**	<1.0
90B2 D	11/10/2010	<1.0	<1.0	<1.0	**1.1**	**36**	<1.0	<4.0	<40	<1.0	<1.0	**180**	<1.0
90B2	9/28/2011	<2.5	<1.3	<1.3	<1.3	**33**	<1.3	<5.0	<5.0	<1.3	<1.3	**140**	<1.3
146B2	11/8/2007	<2.0	<1.0	<1.0	<1.0	**110**	**3.8**	<1.0	<40	<1.0	<1.0	**7.2**	<1.0
146B2	11/5/2008	<1.0	<0.5	<0.5	<0.5	**74**	<0.5	<0.5	<20	<0.5	<0.5	**6.0**	<0.5
146B2	11/2/2009	<1.0	<0.5	<0.5	<0.5	**93**	<0.5	<2.0	<20	<0.5	<0.5	**4.4**	<0.5

Table 12
VOC Analytical Results
Five Year Summary, January 2007 through December 2011
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L and method is 8260B)											
		Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride
B2 Zone													
146B2	11/3/2010	<1.0	<0.5	<0.5	<0.5	**91**	<0.5	<2.0	<2.0	<0.5	<0.5	**3.5**	<0.5
146B2	9/28/2011	<5.0	<2.5	<2.5	<2.5	**230**	<2.5	<10	<10	<2.5	<2.5	**5.8**	<2.5
RW-1(B2)	8/9/2007	<1.4	<0.7	<0.7	<0.7	**37**	**1**	**1.1**	<29	<0.7	<0.7	**82**	<0.7
RW-1(B2)	11/13/2007	<1.0	<0.5	<0.5	<0.5	**39**	<0.5	**2.1**	<20	<0.5	<0.5	**82**	<0.5
RW-1(B2)	11/15/2008	<1.0	<0.5	<0.5	<0.5	**27**	<0.5	**0.7**	<20	<0.5	<0.5	**110**	<0.5
RW-1(B2)	11/3/2009	<1.4	<0.7	<0.7	<0.7	**35**	<0.7	<2.9	<29	<0.7	<0.7	**83**	<0.7
RW-1(B2)	11/5/2010	<1.0	<0.5	<0.5	<0.5	**7.2**	<0.5	<2.0	<2.0	<0.5	<0.5	**2.3**	<0.5
RW-1(B2)	9/16/2011	<1.0	<0.5	<0.5	<0.5	**33**	<0.5	<2.0	<2.0	<0.5	<0.5	**71**	<0.5
RW-2(B2)	11/13/2007	<20	<10	<10	<10	**39**	<10	<10	<400	<10	<10	**1000**	<10
RW-2(B2)	11/6/2008	<0.50	<0.50	<0.50	**4.8**	**13**	**2.2**	**3.4**	<0.50	<0.50	<0.50	**890**	<0.50
RW-2(B2)	11/12/2009	<1.0	<0.5	<0.5	**5.7**	**13**	**2.8**	**4.7**	<20	<0.5	**0.7**	**830**	<0.5
RW-2(B2)	11/15/2010	<10	<5.0	<5.0	**5.5**	**10**	<5.0	<20	<20	<5.0	<5.0	**730**	<5.0
RW-2(B2)	9/2/2011	<14	<7.1	<7.1	<7.1	**13**	<7.1	<29	<29	<7.1	<7.1	**750**	<7.1

Notes:
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,2-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE = trans-1,2-Dichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
< indicates analyte not detected above the reported detection limit
D indicates duplicate sample
NA indicates the sample wasn't analyzed for the given analyte
RGRP = Regional Groundwater Remediation Program

Table 13
Mann-Kendall Statistics Concentration Trends Summary
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Well Name	TCE	cis-1,2-DCE	Vinyl Chloride
A/A1 Zone			
4A	S	NT	NT
6A	N/A	N/A	N/A
9A	N/A	N/A	N/A
12A	N/A	N/A	N/A
15A	N/A	N/A	N/A
16A	S	PD	NT
17A	D	NT	NT
22A	D	S	NT
23A	D	S	NT
71A	S	NT	NT
101A	N/A	N/A	N/A
115A	NT	I	NT
134A	S	I	NT
139A	N/A	N/A	N/A
140A	N/A	N/A	N/A
141A	N/A	N/A	N/A
143A	N/A	N/A	N/A
148A	N/A	N/A	N/A
149A	D	NT	NT
154A	S	S	NT
155A	S	S	NT
159A	NT	NT	NT
160A	NT	NT	NT
161A	N/A	N/A	N/A
174A	S	NT	NT
175A	D	NT	NT
RW-1A	S	S	NT

Well Name	TCE	cis-1,2-DCE	Vinyl Chloride
A/A1 Zone			
RW-2A	S	NT	NT
RW-11A	D	D	S
RW-12A	NT	NT	I
RW-23A	D	I	NT
RW-24A	D	PI	I
RW-26A	S	NT	NT
RW-29A	D	NT	NT
B1/A2 Zone			
93B1	N/A	N/A	N/A
95B1	D	PD	NT
101B1	D	D	NT
110B1	NT	NT	NT
117B1	PD	NT	NT
145B1	PD	D	S
156B1	D	S	NT
RW-1(B1)	S	PD	NT
RW-2(B1)	D	S	NT
RW-10(B1)	D	I	NT
RW-11(B1)	D	D	NT
B2 Zone			
40B2	D	D	NT
90B2	S	PD	NT
146B2	D	NT	NT
RW-1(B2)	D	S	NT
RW-2(B2)	S	NT	NT

Notes:

TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

PI =Probably Increasing

I =Increasing

N/A = Not applicable due to insufficient data (< 4 sampling events)

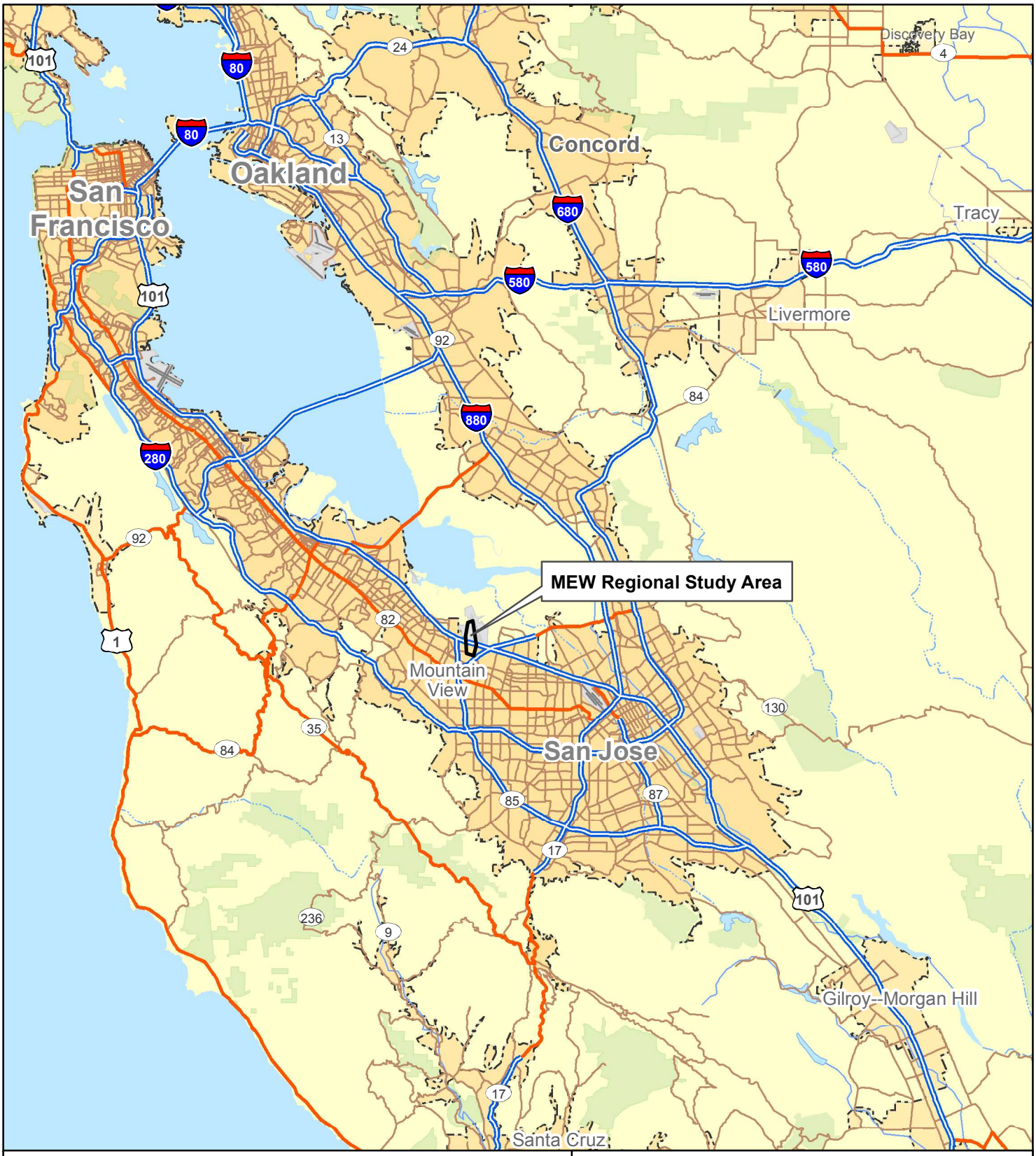
S = Stable

PD = Probably Decreasing

D = Decreasing

NT = No Trend

FIGURES



N

0 10 Miles

Site Location Map

MEW Area, Mountain View, California

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Figure 1

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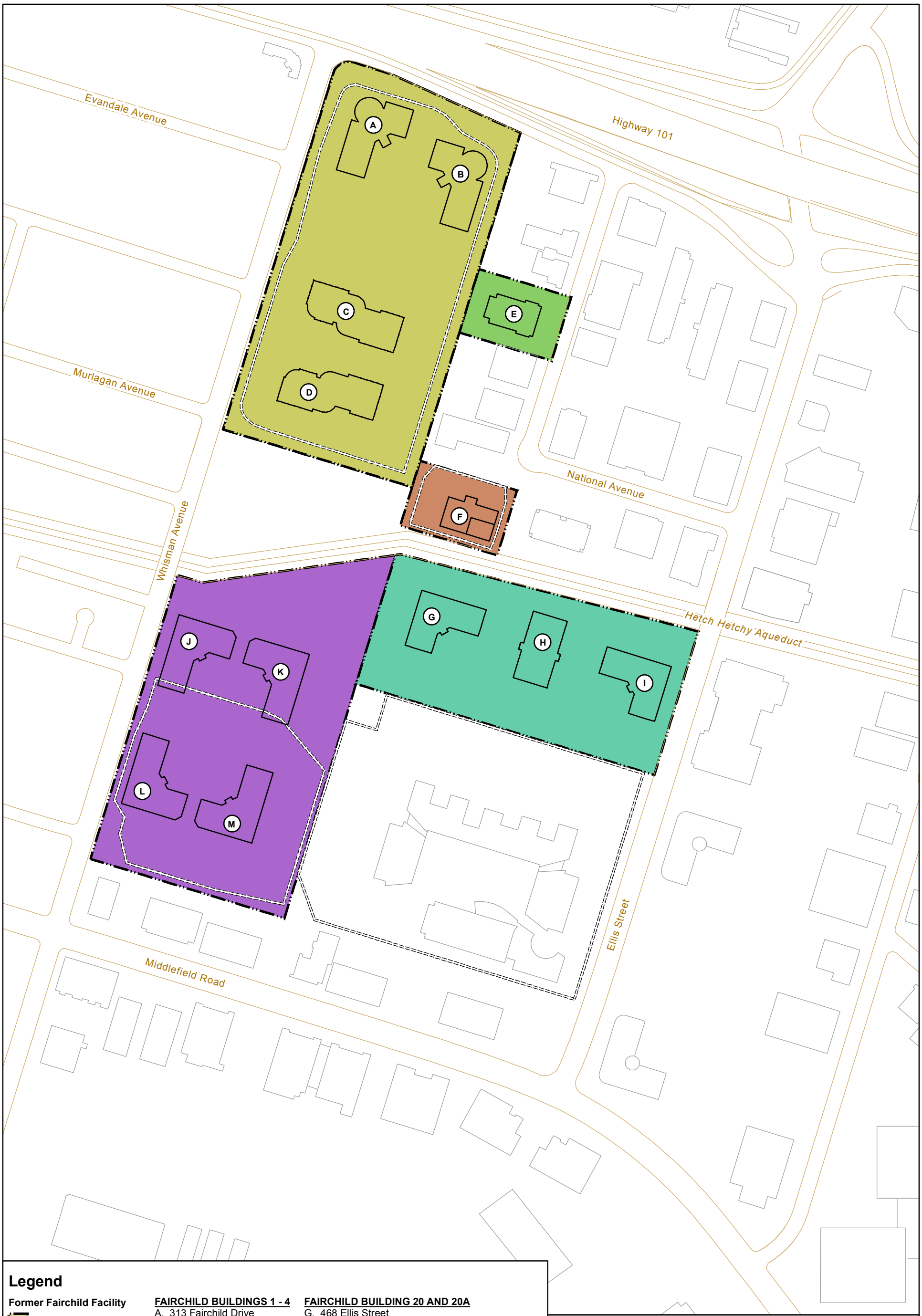

Legend

Former Fairchild Facility

- Buildings 1 - 4
- Building 18
- Building 9
- Building 20 and 20A
- Buildings 13, 19, and 23
- Slurry Wall
- Building
- Road

FAIRCHILD BUILDINGS 1 - 4
A. 313 Fairchild Drive
B. 323 Fairchild Drive
C. 545 North Whisman Road
D. 515 North Whisman Road

FAIRCHILD BUILDING 18
E. 644 National Avenue

FAIRCHILD BUILDING 9
F. 401 National Avenue

FAIRCHILD BUILDING 20 AND 20A
G. 468 Ellis Street
H. 466 Ellis Street
I. 464 Ellis Street

FAIRCHILD BUILDINGS 13, 19, AND 23
J. 399 North Whisman Road
K. 389 North Whisman Road
L. 369 North Whisman Road
M. 379 North Whisman Road

N

300 150 0 300 Feet

Current Building Configurations
Former Fairchild Facilities

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 2

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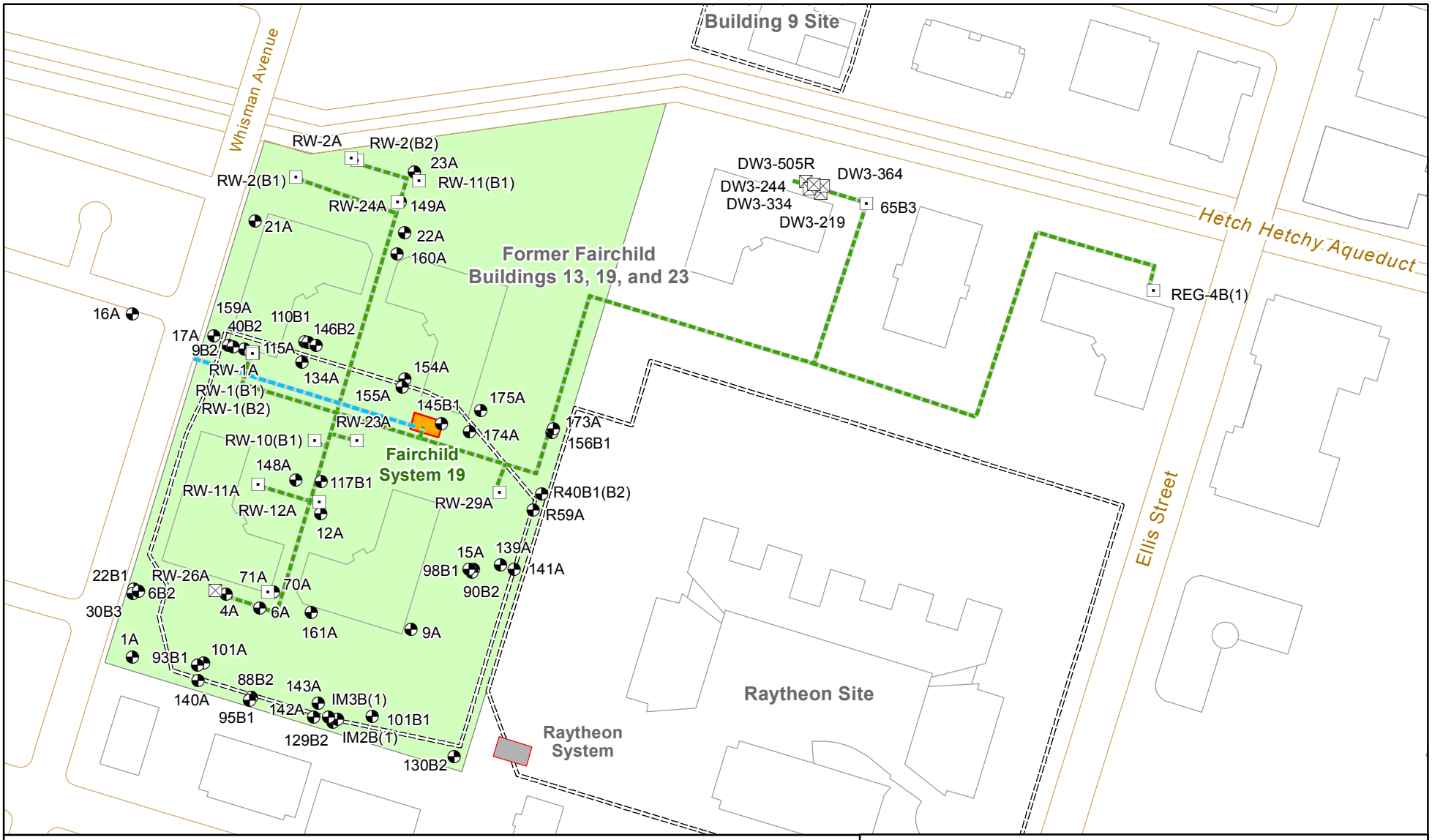

Legend

Extraction and Monitoring Wells

- Monitoring Well
- Recovery Well, On
- Recovery Well, Off
- Treatment System Pipeline
- Treatment-System Discharge Pipeline
- Slurry Wall
- Building
- Road
- Former Fairchild Building 19 Site - 369/441 Whisman Road
- Fairchild Groundwater Treatment System 19
- Groundwater Treatment System

N

0 250 Feet

Site Map and Well Network

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 3

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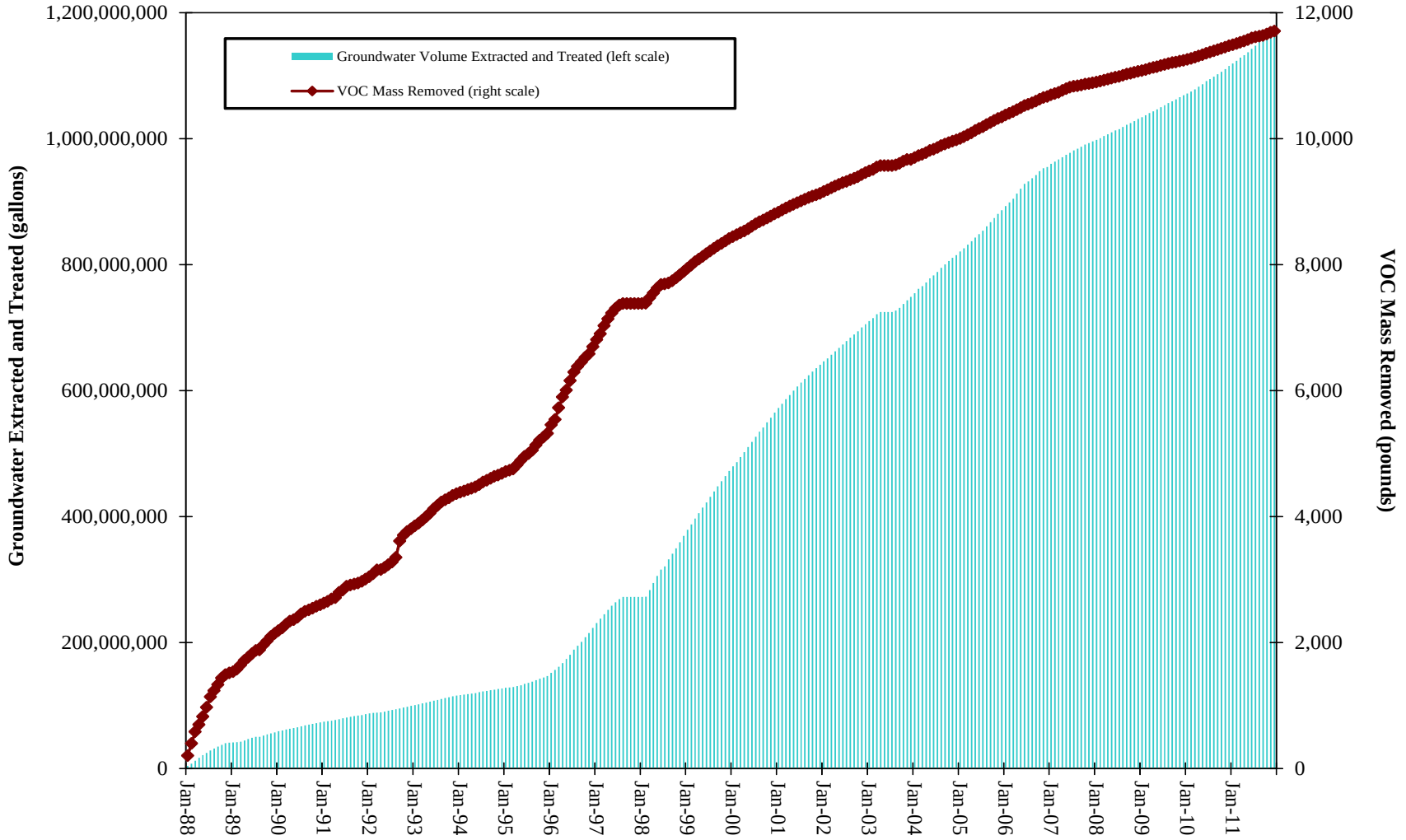

Source: 2011 Annual Self-Monitoring Report, Treatment System 19, Former Fairchild Buildings 13, 19 and 23 (Weiss, 2012a)

Cumulative Groundwater Extracted and VOC Mass Removed

Former Fairchild Buildings 13, 19 and 23
Mountain View, California

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Figure 4

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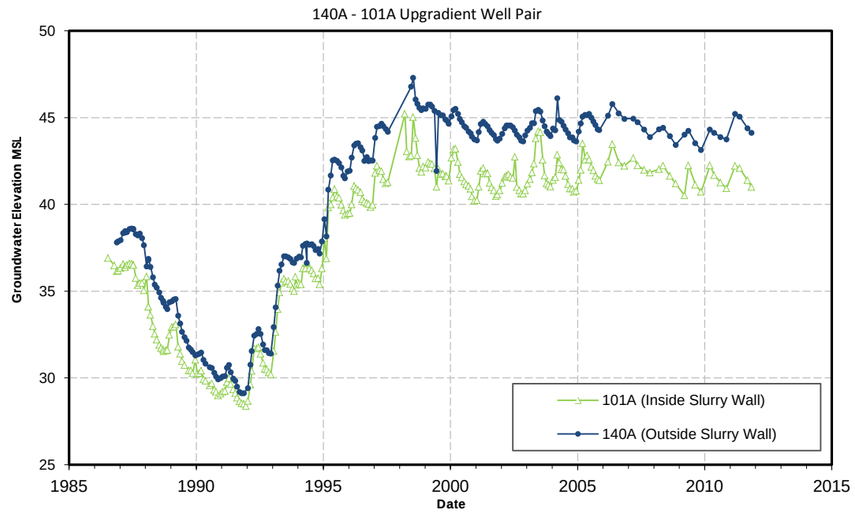

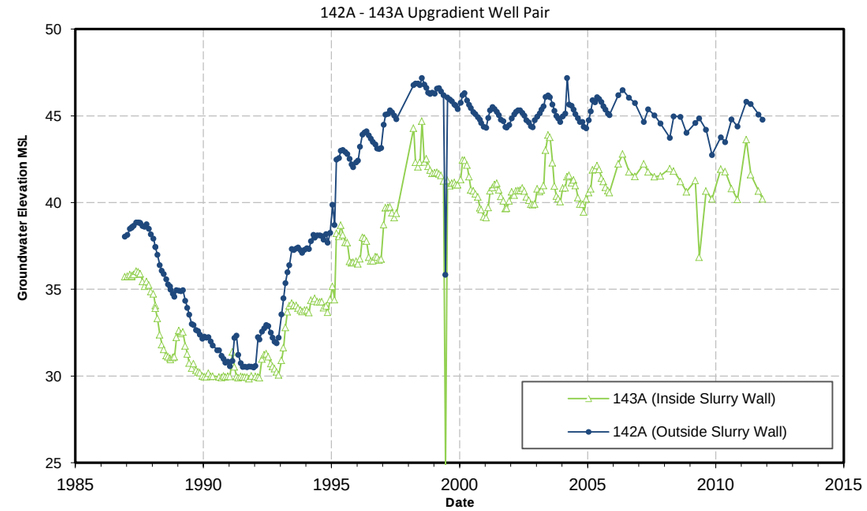

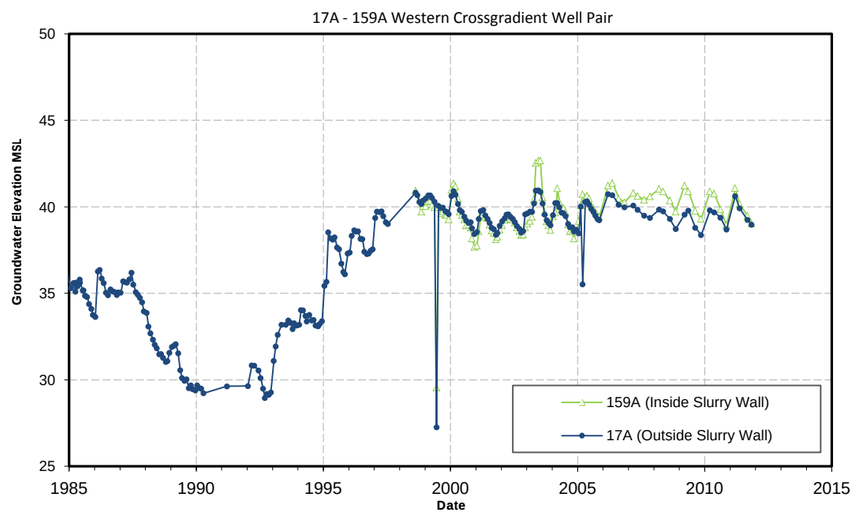

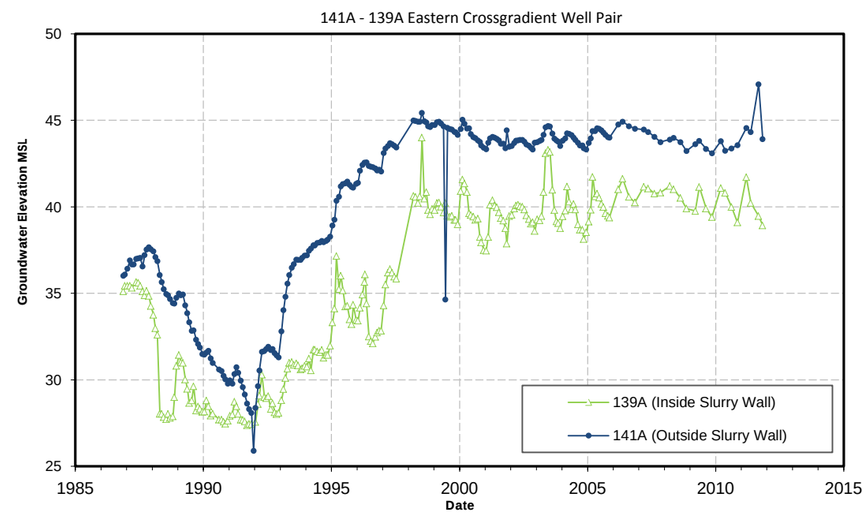

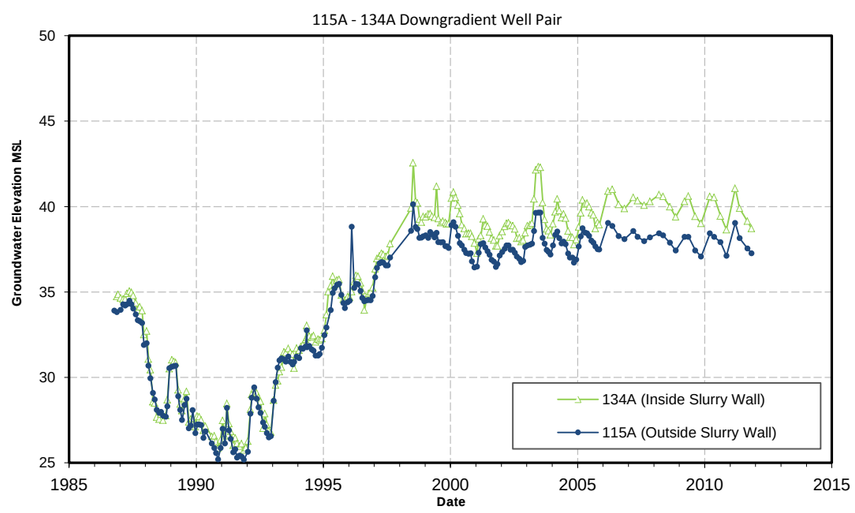

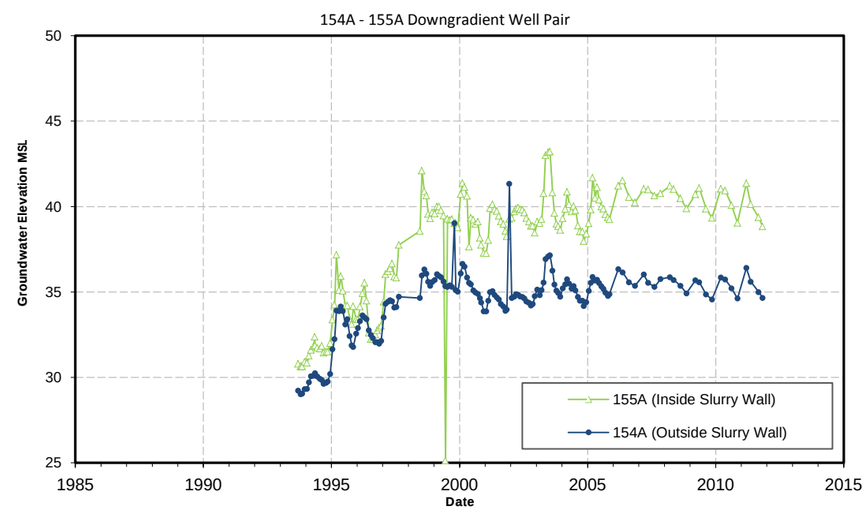

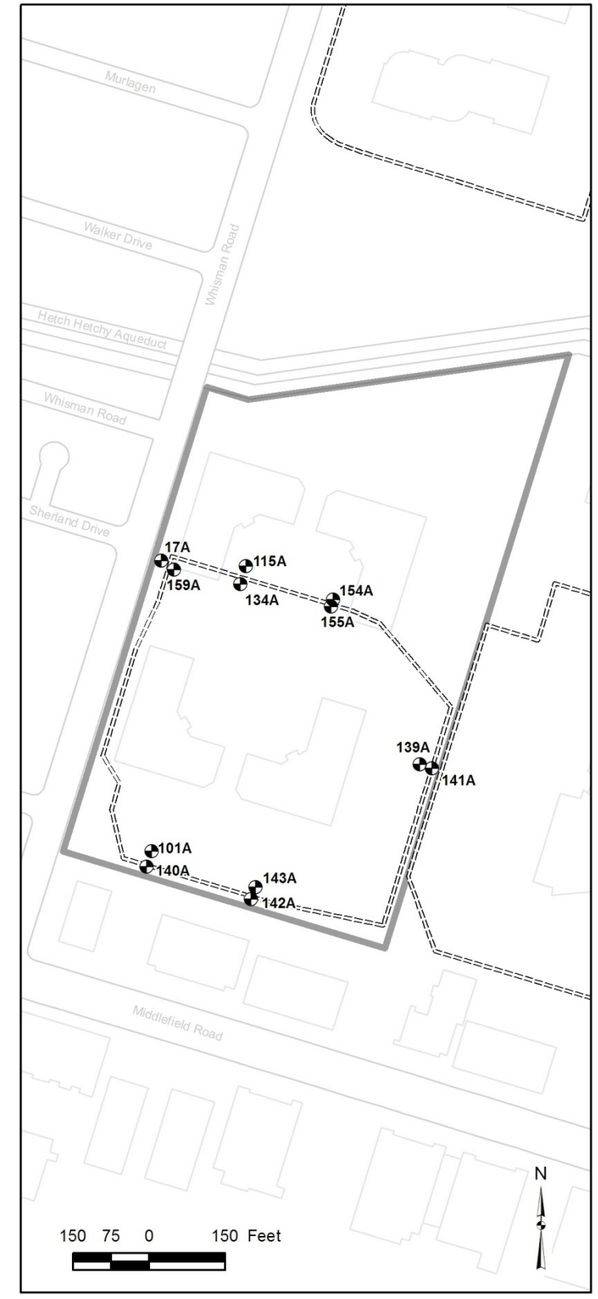

Hydrographs - Groundwater Elevation Measurements
Slurry Wall Well Pairs

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 5

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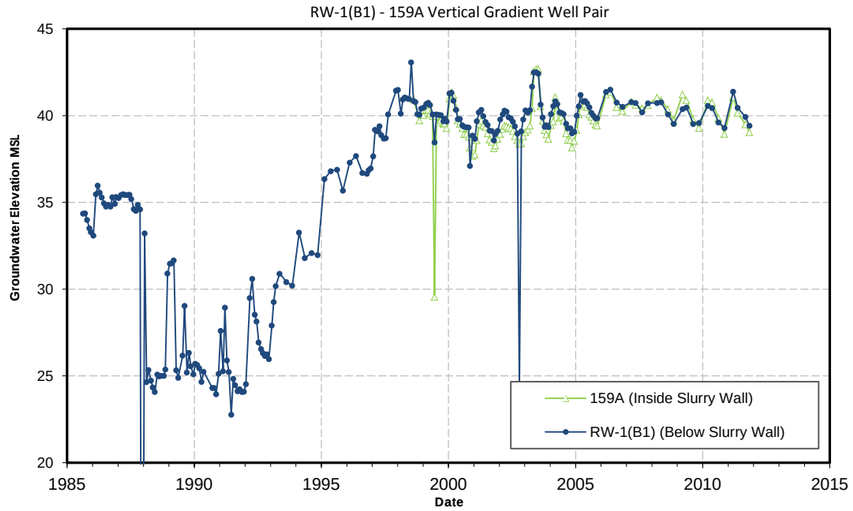

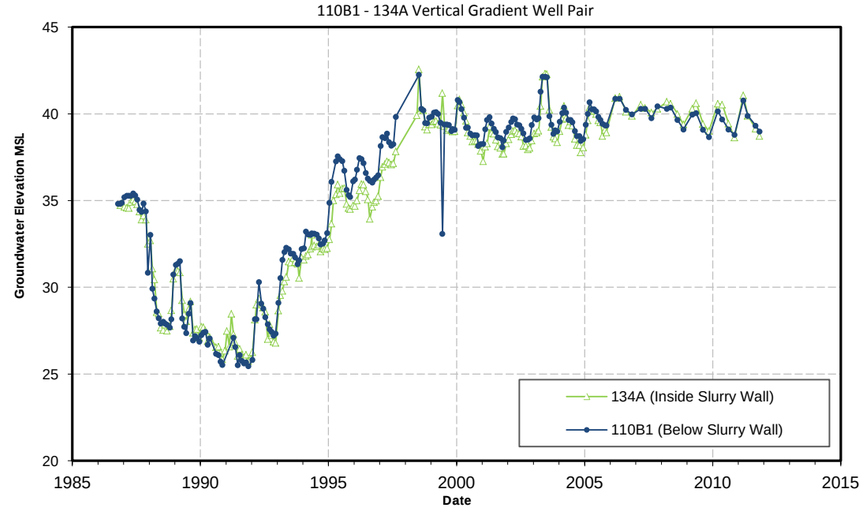

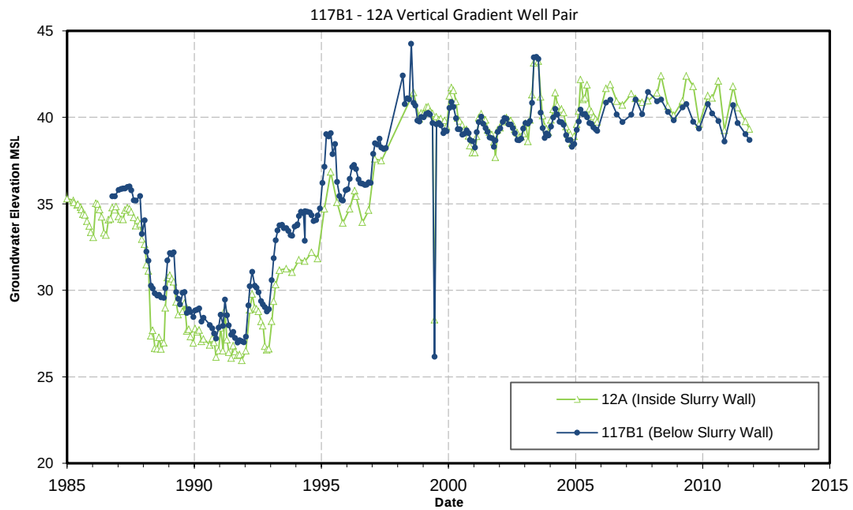

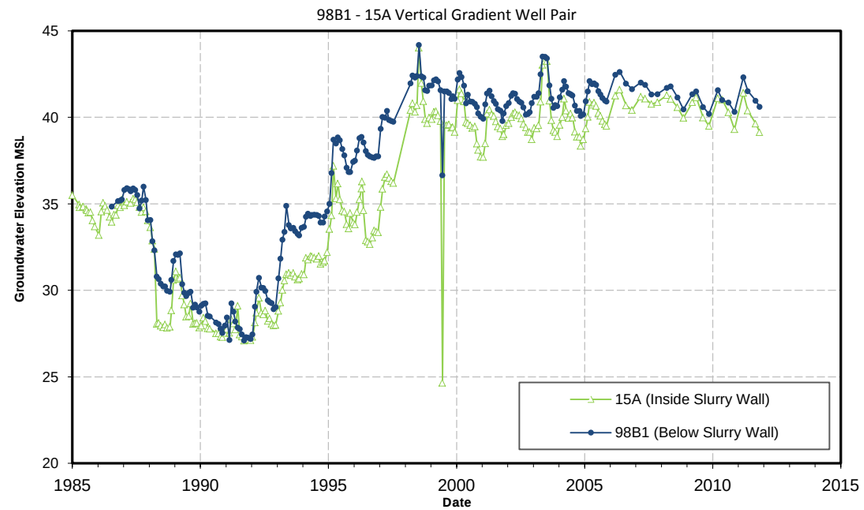

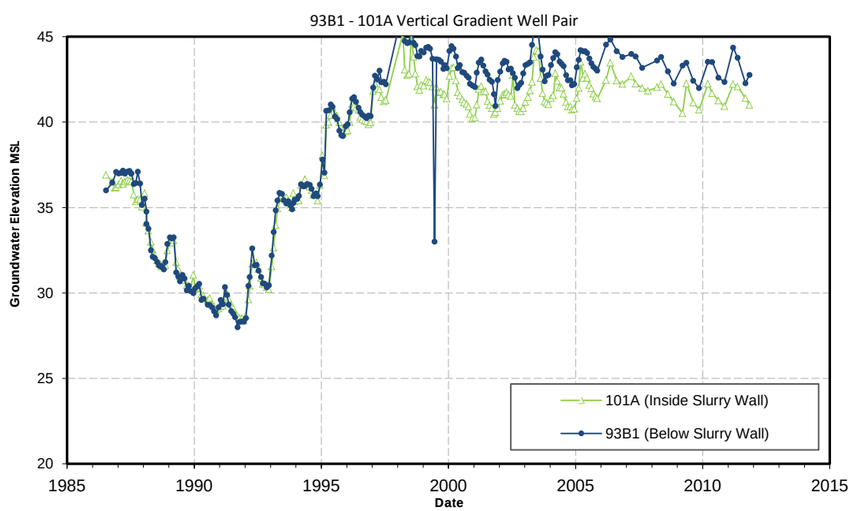

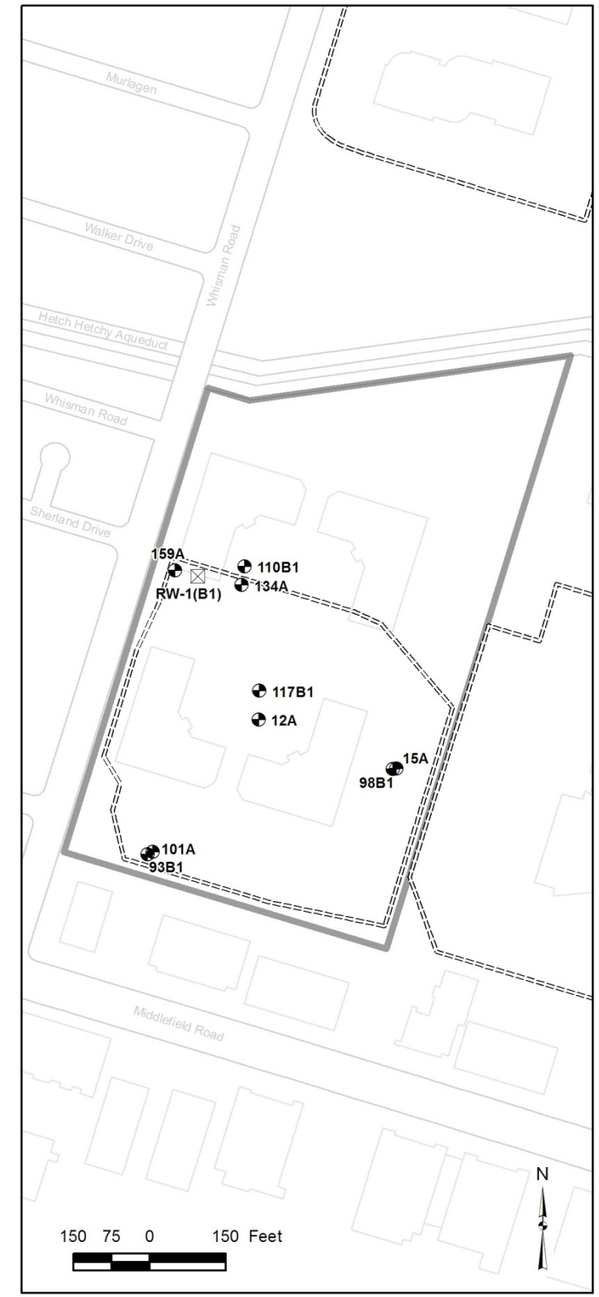

Hydrographs - Groundwater Elevation Measurements
Slurry Wall Well Pairs Across Water-Bearing Zones

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 6

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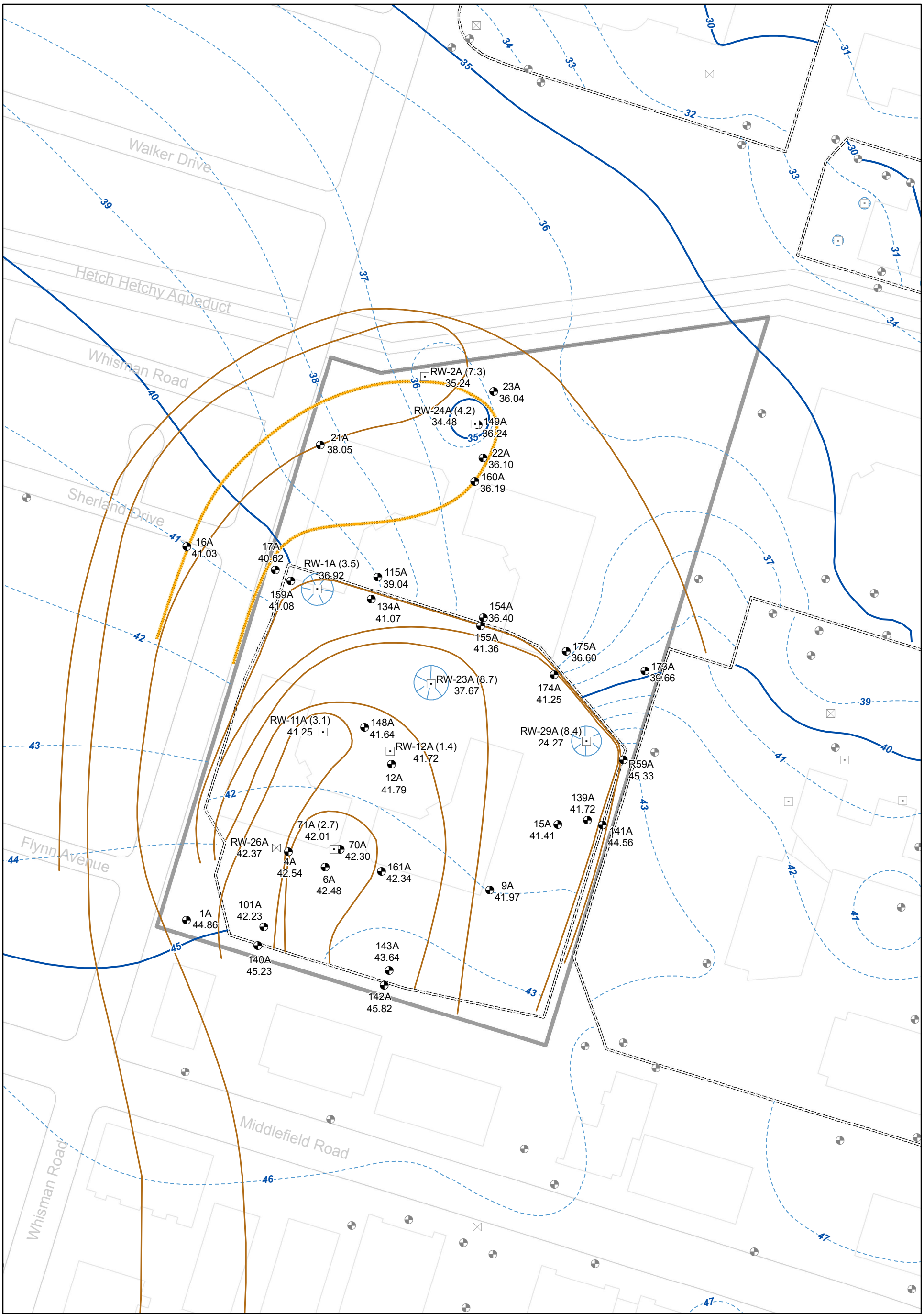

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

71A (2.7) Well ID (Flow Rate)
42.01 Groundwater Elevation (feet above mean sea level)

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

N

150 75 0 150 Feet

A/A1 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones
24 March 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 7

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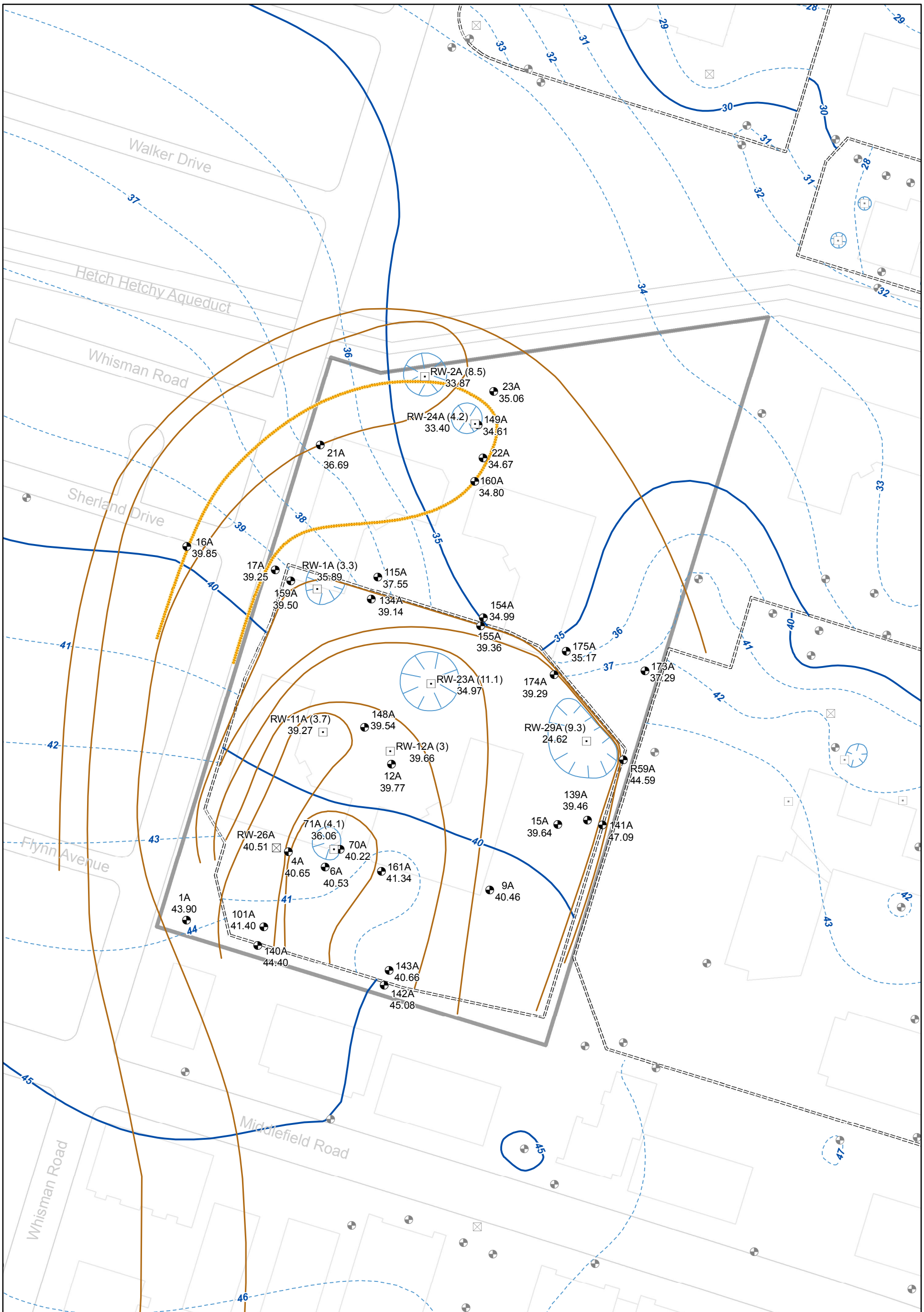

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

71A (4.1) Well ID (Flow Rate)
36.06 Groundwater Elevation (feet above mean sea level)

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

N

150 75 0 150 Feet

A/A1 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones
15 September 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure **8**

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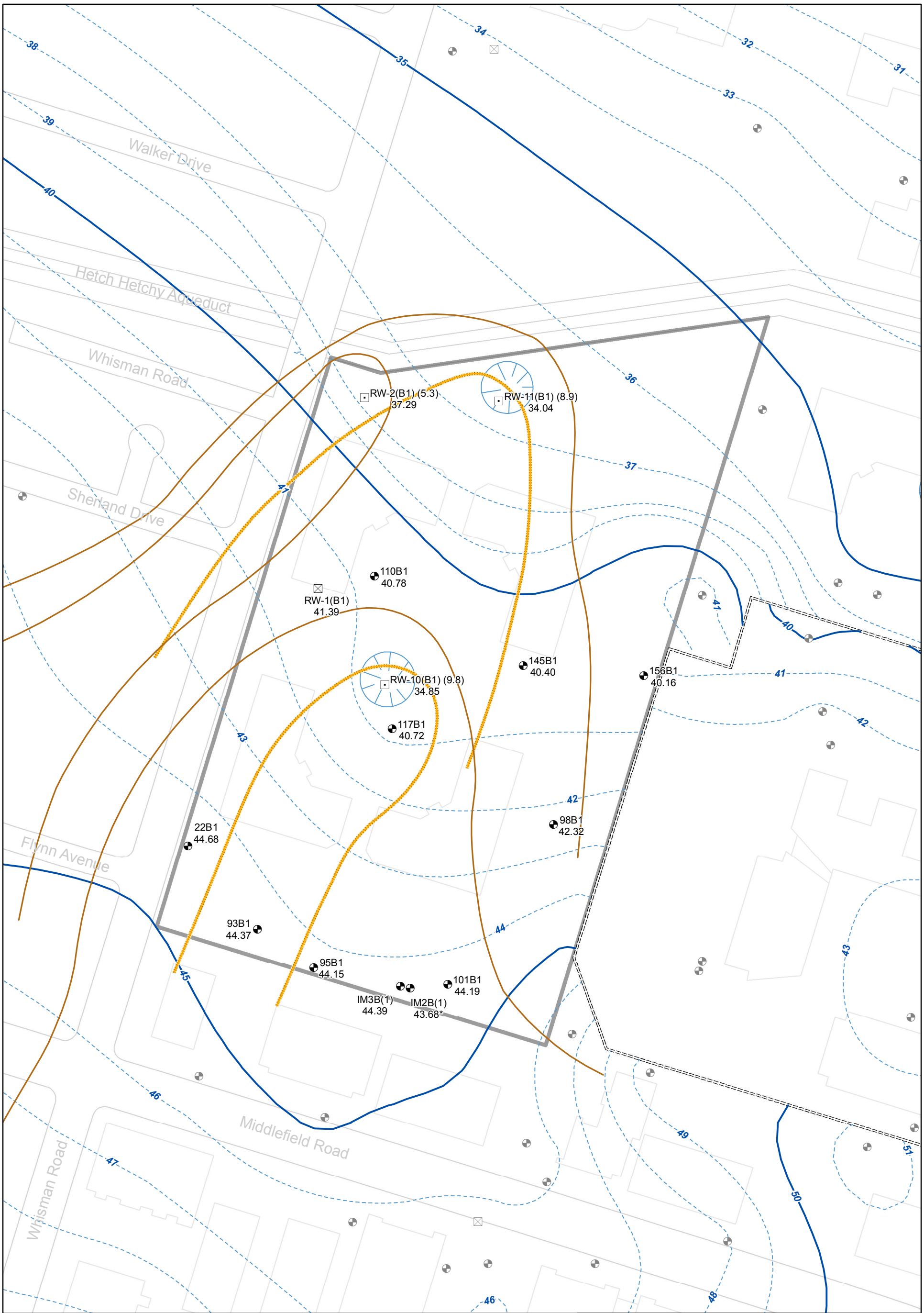

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

RW-2(B1) (5.3) Well ID (Flow Rate)
37.29 Groundwater Elevation (feet above mean sea level)

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

N

150 75 0 150 Feet

B1/A2 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones
24 March 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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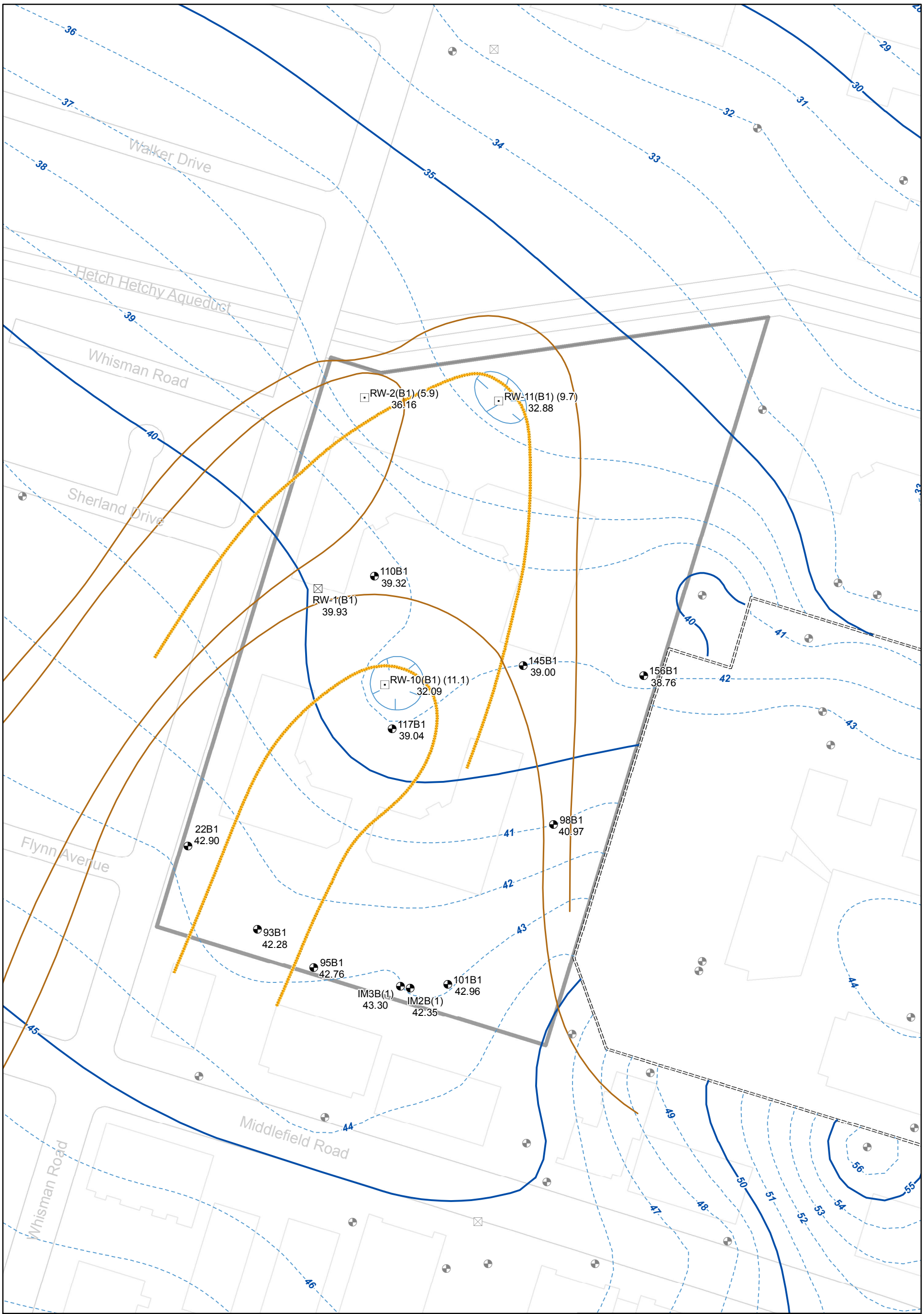
Figure 9

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig09_GW_B1A2_1_Mar2011.mxd | 4/10/2012 4:13:55 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

RW-2(B1) (5.9) Well ID (Flow Rate)
36.16 Groundwater Elevation (feet above mean sea level)

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

150 75 0 150 Feet

N

B1/A2 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones
15 September 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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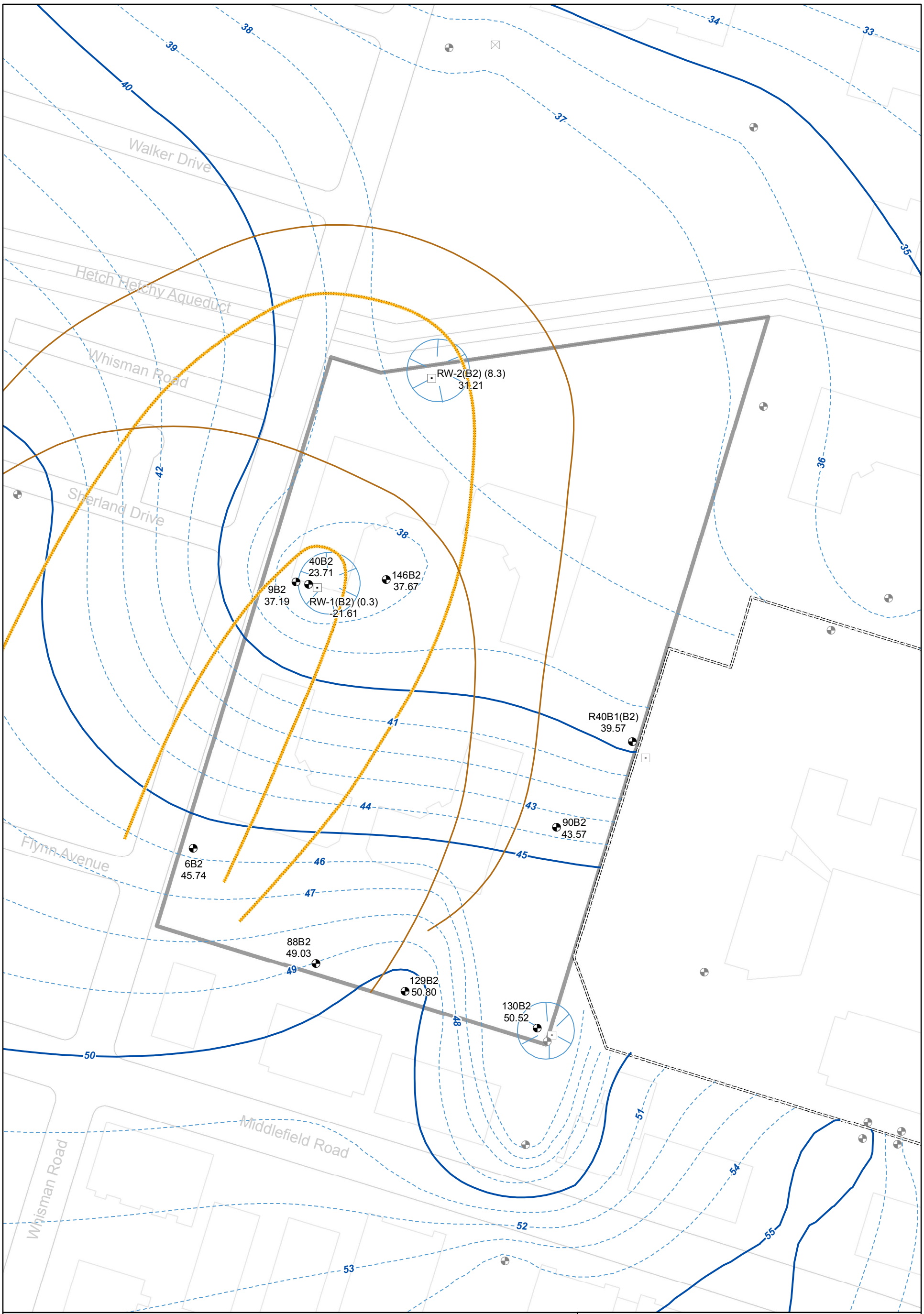
Figure **10**

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig10_GW_B1A2_1_Sept2011.mxd | 4/10/2012 4:14:04 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

RW-1(B2) (0.3) Well ID (Flow Rate)
-21.61 Groundwater Elevation (feet above mean sea level)

N

150 75 0 150 Feet

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones
24 March 2011

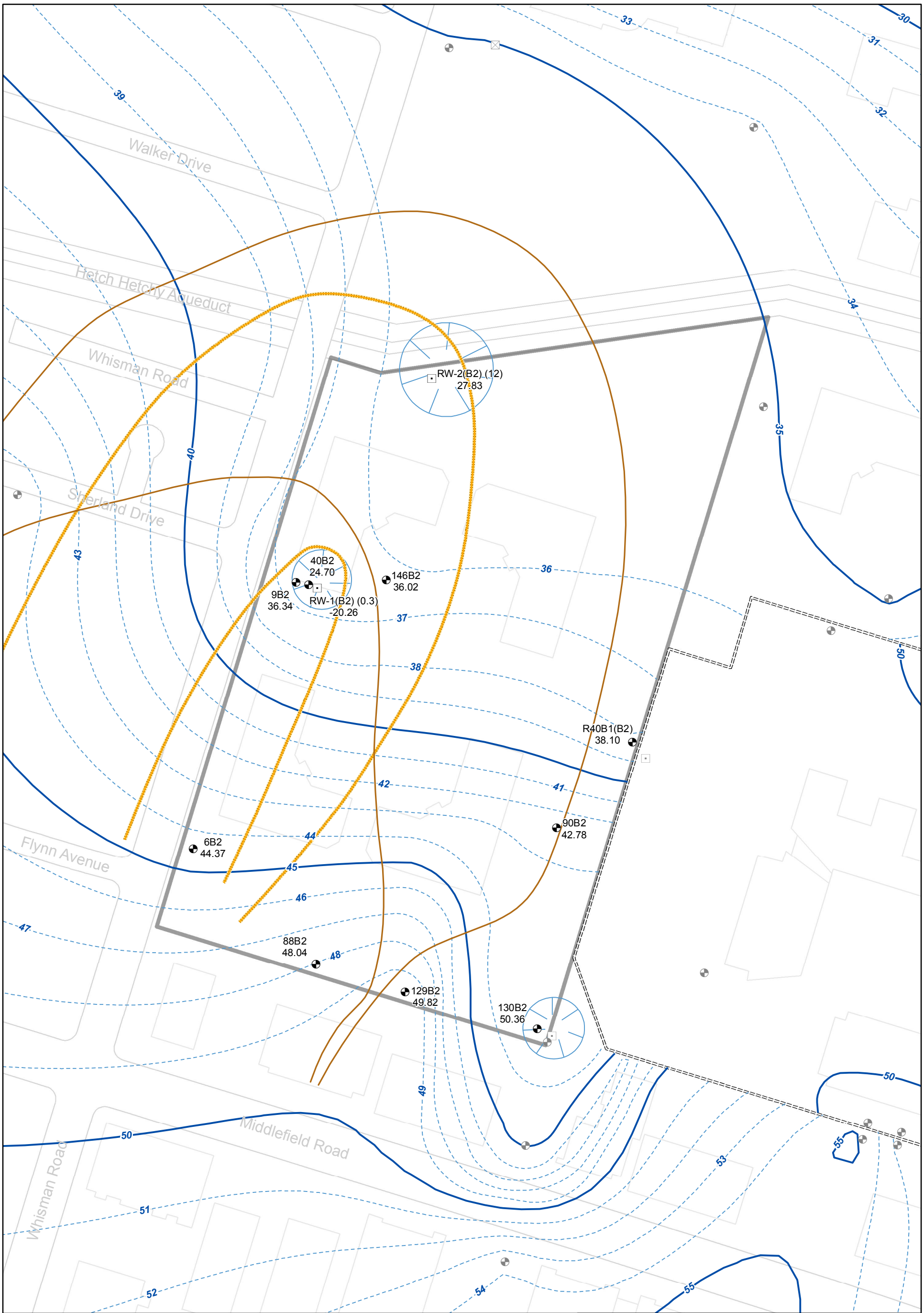
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure **11**

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig11_GW_B2_Mar2011.mxd | 4/10/2012 4:14:15 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- Groundwater Elevation: 1 ft Contours
- Groundwater Elevation: 5 ft Contours
- Closely Spaced Groundwater Contour
- Estimated Capture Zone
- Target Capture Zone
- Building
- Road
- Slurry Wall
- Site Boundary

RW-1(B2) (0.3) Well ID (Flow Rate)
-20.26 Groundwater Elevation (feet above mean sea level)

N

150 75 0 150 Feet

Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone Groundwater Elevation Contours and Estimated/Target Capture Zones 15 September 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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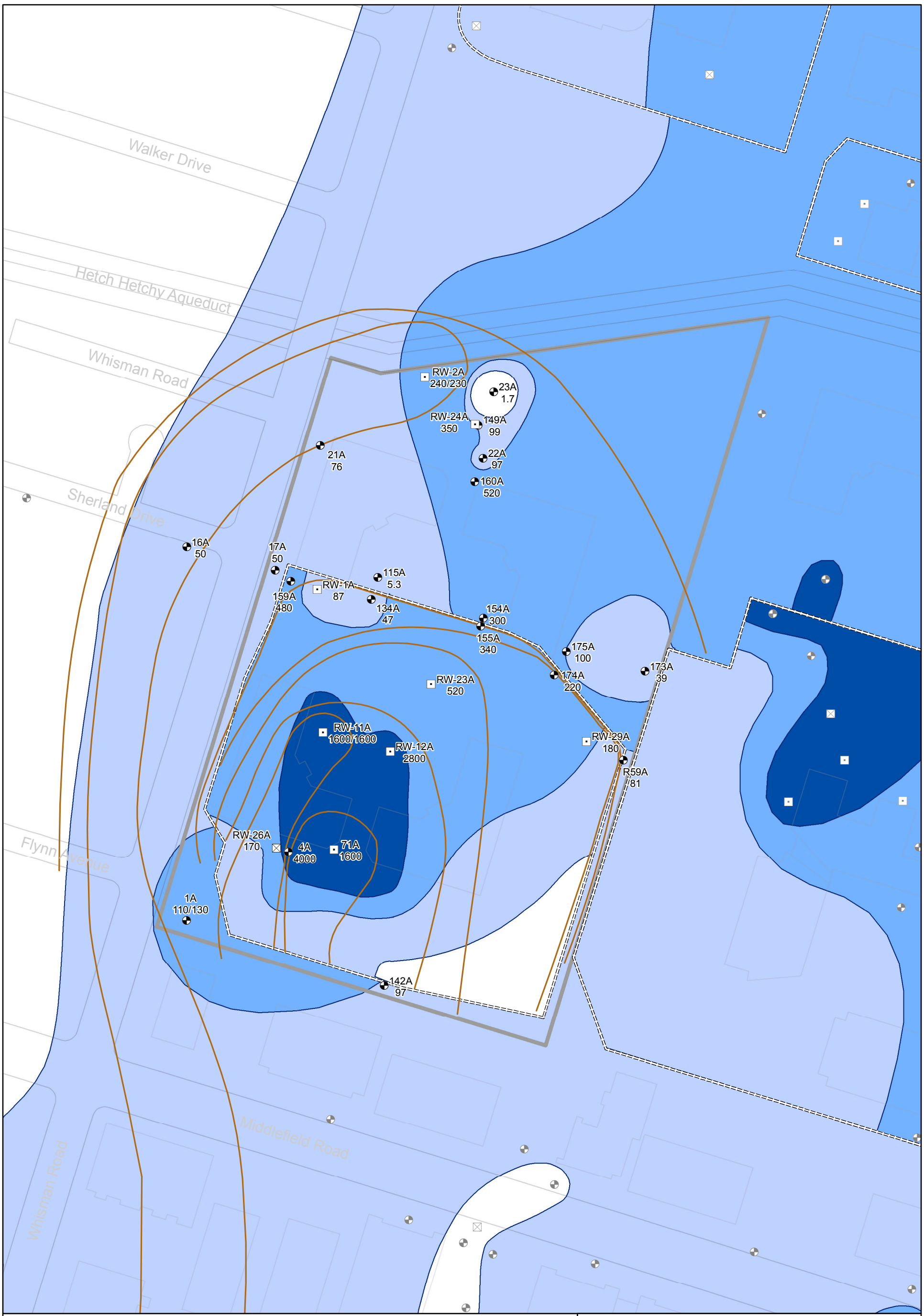
Figure 12

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig12_GW_B2_Sept2011.mxd | 4/10/2012 4:14:24 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

TCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
TCE = Trichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for TCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A/A1 Zone TCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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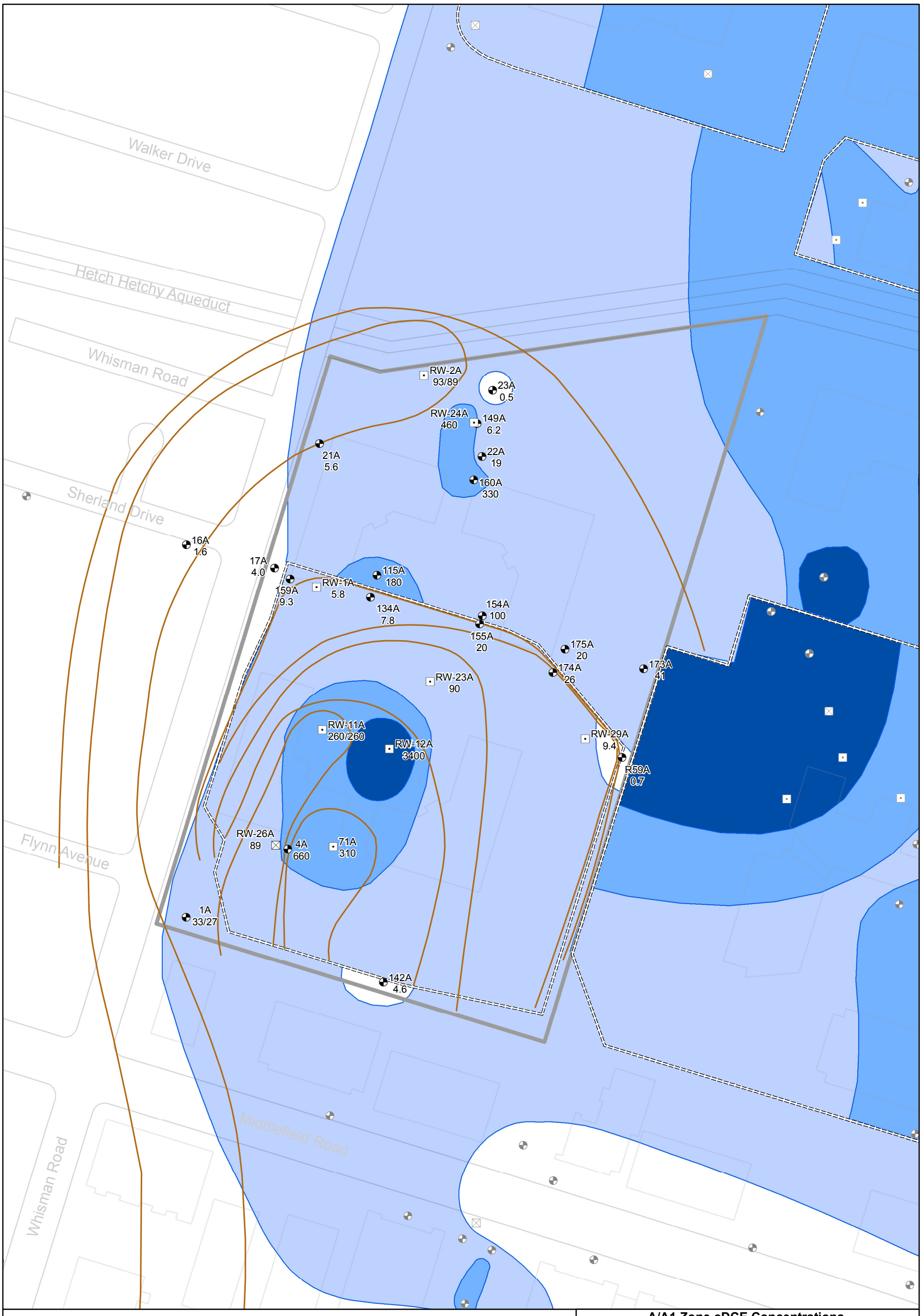
Figure 13

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig13_TCE_AA1_Sept2011_CZ.mxd | 4/10/2012 4:14:34 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

cDCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

150 75 0 150 Feet

Notes:
cDCE = cis-1,2-Dichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for cDCE in 2011.
Wells not associated with the Former Fairchild
Buildings 13, 19, and 23 Site are shown in gray.

A/A1 Zone cDCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 14

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig14_DCE_AA1_Sept2011_CZ.mxd | 4/10/2012 4:14:45 PM

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

VC Concentration

- 0.5 - 5 ug/L
- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
VC = Vinyl Chloride
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for VC in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A/A1 Zone VC Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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Figure 15

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig15_VC_AA1_Sept2011_CZ.mxd | 4/10/2012 4:14:53 PM

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

PCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
PCE = Tetrachloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for PCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A/A1 Zone PCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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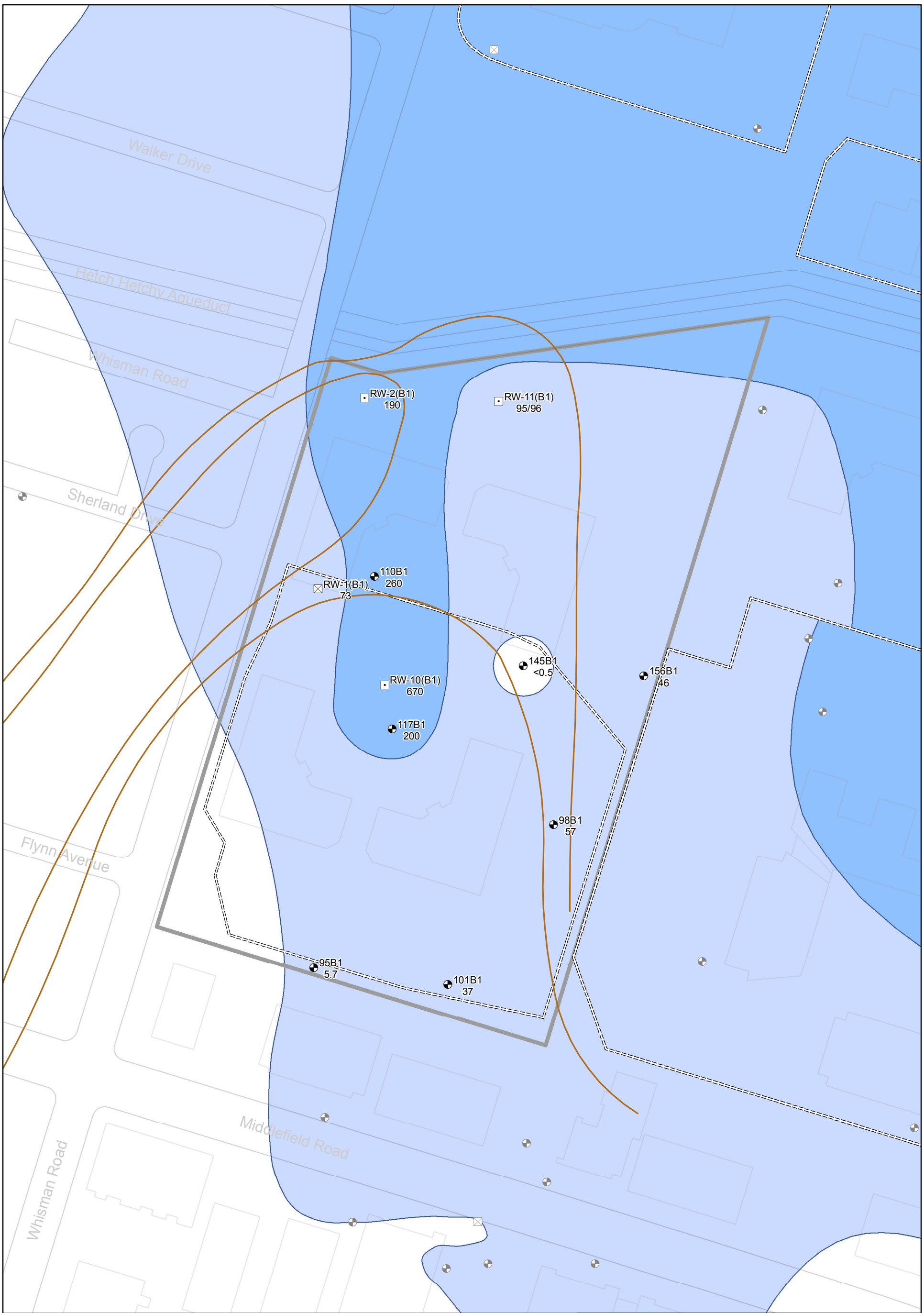
Figure 16

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig16_PCE_AA1_Sept2011_CZ.mxd | 4/10/2012 4:15:02 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

TCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
TCE = Trichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for TCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B1/A2 Zone TCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

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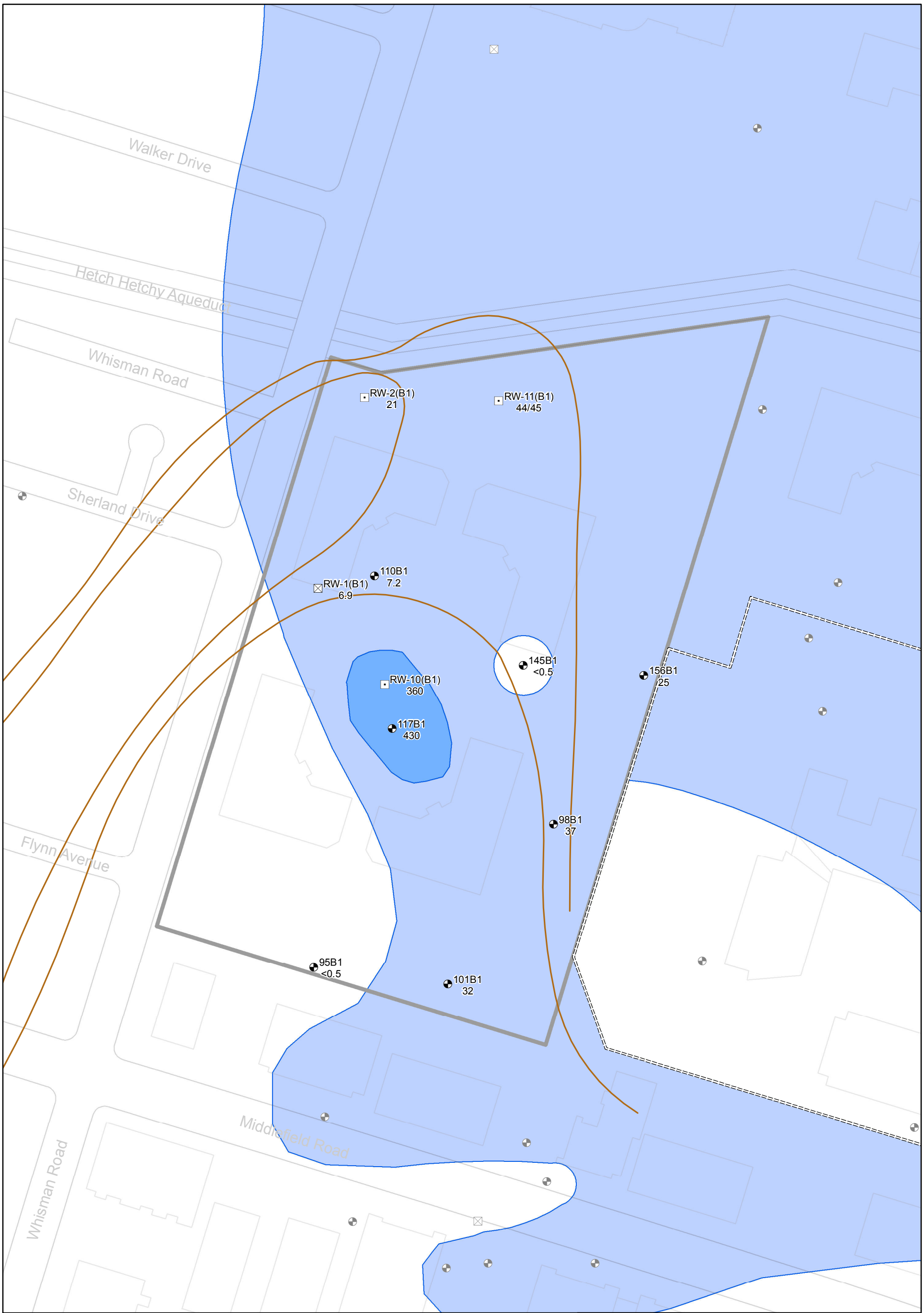
Figure 17

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig17_TCE_B1A2_Sept2011_CZ.mxd | 4/11/2012 9:04:07 AM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

cDCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
cDCE = cis-1,2-Dichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for cDCE in 2011.
Wells not associated with the Former Fairchild
Buildings 13, 19, and 23 Site are shown in gray.

B1/A2 Zone cDCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

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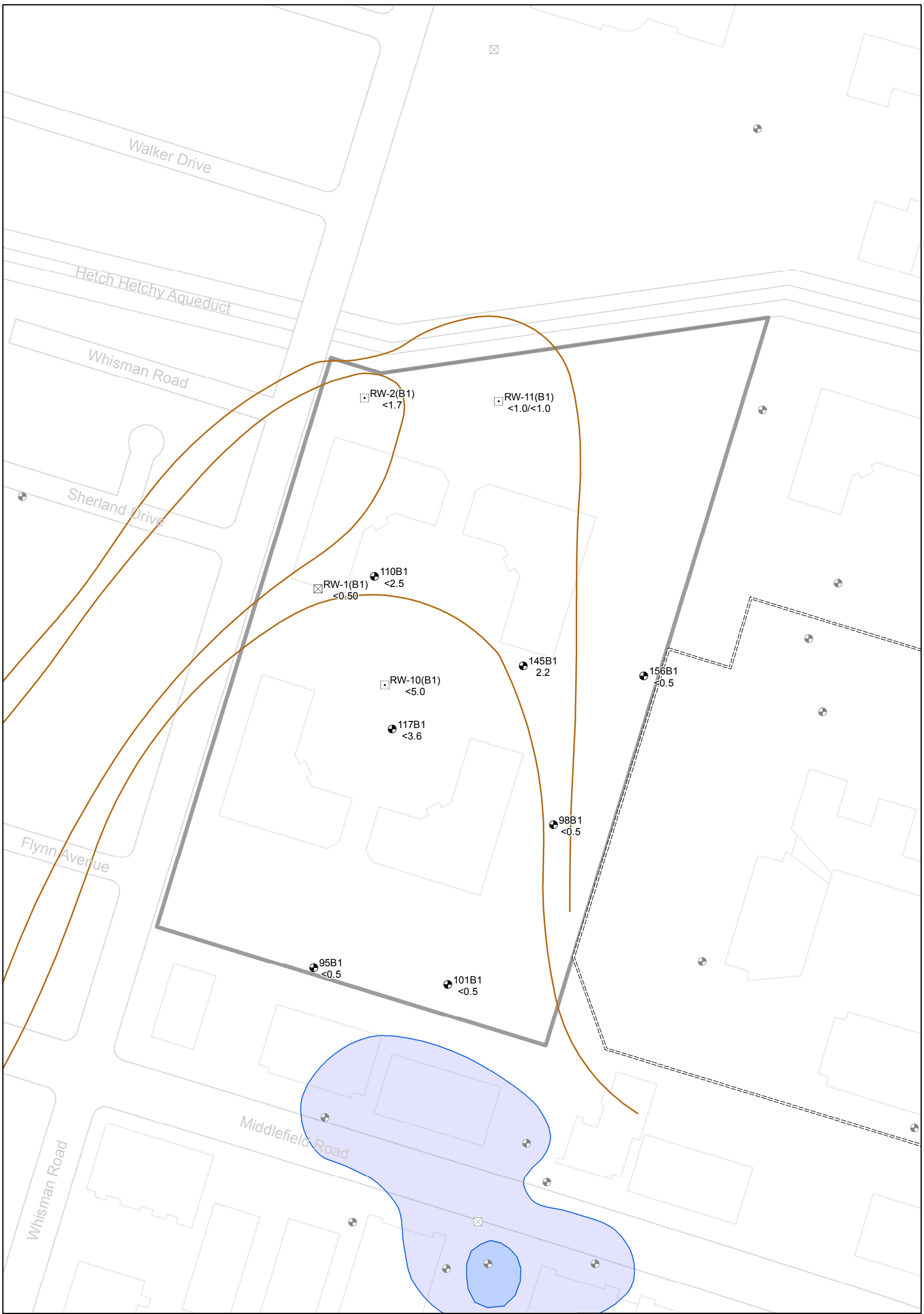
Figure 18

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig18_DCE_B1A2_Sept2011_CZ.mxd | 4/10/2012 4:15:22 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

VC Concentration

- 0.5 - 5 ug/L
- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
VC = Vinyl Chloride
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for VC in 2011.
Wells not associated with the Former Fairchild
Buildings 13, 19, and 23 Site are shown in gray.

B1/A2 Zone VC Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

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Figure 19

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig19_VC_B1A2_Sept2011_CZ.mxd | 4/10/2012 4:15:31 PM

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

PCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
PCE = Tetrachloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for PCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B1/A2 Zone PCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

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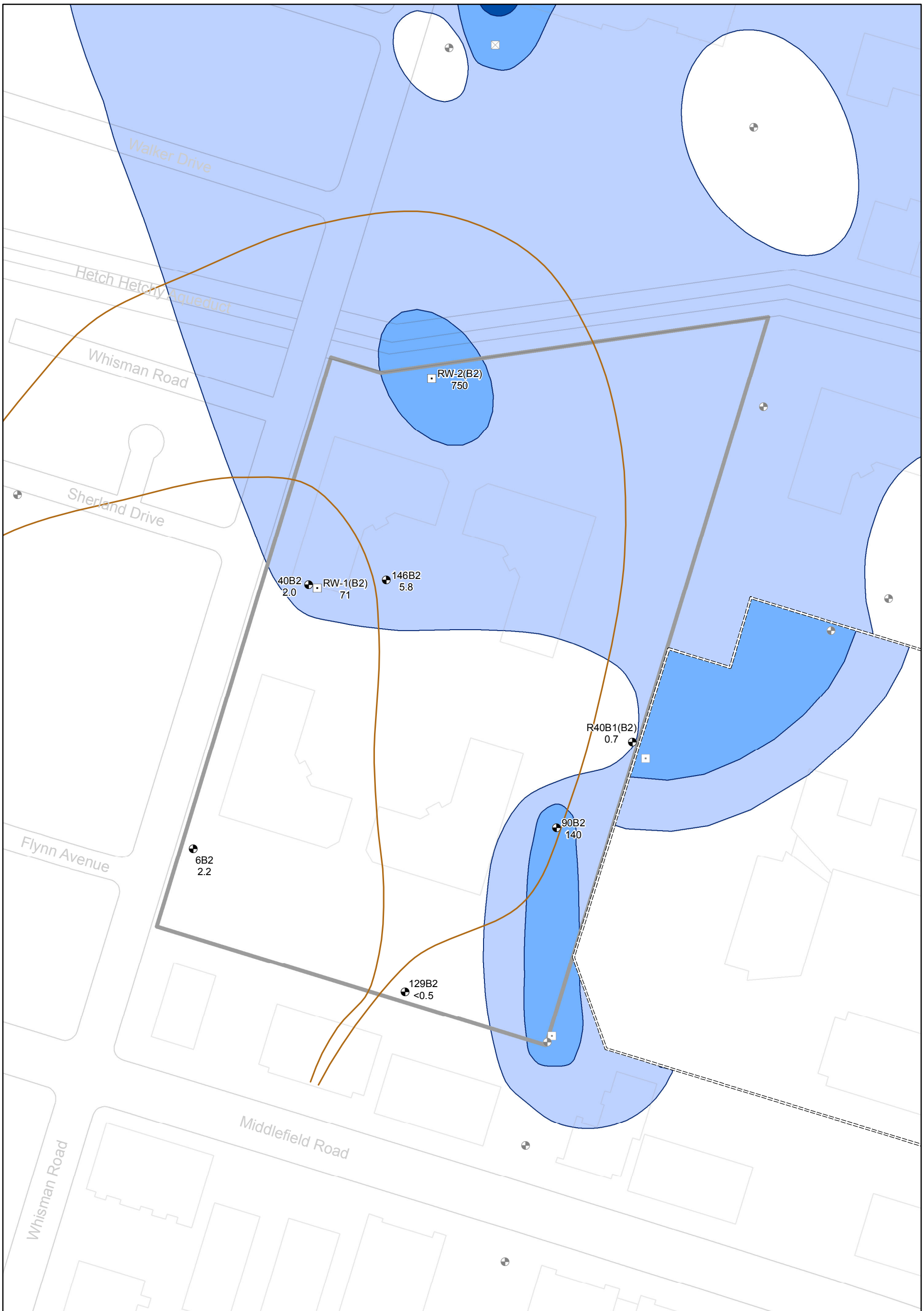
Figure 20

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig20_PCE_B1A2_Sept2011_CZ.mxd | 4/10/2012 4:15:40 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

TCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
TCE = Trichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for TCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone TCE Concentrations and Estimated Capture Zones September/October 2011

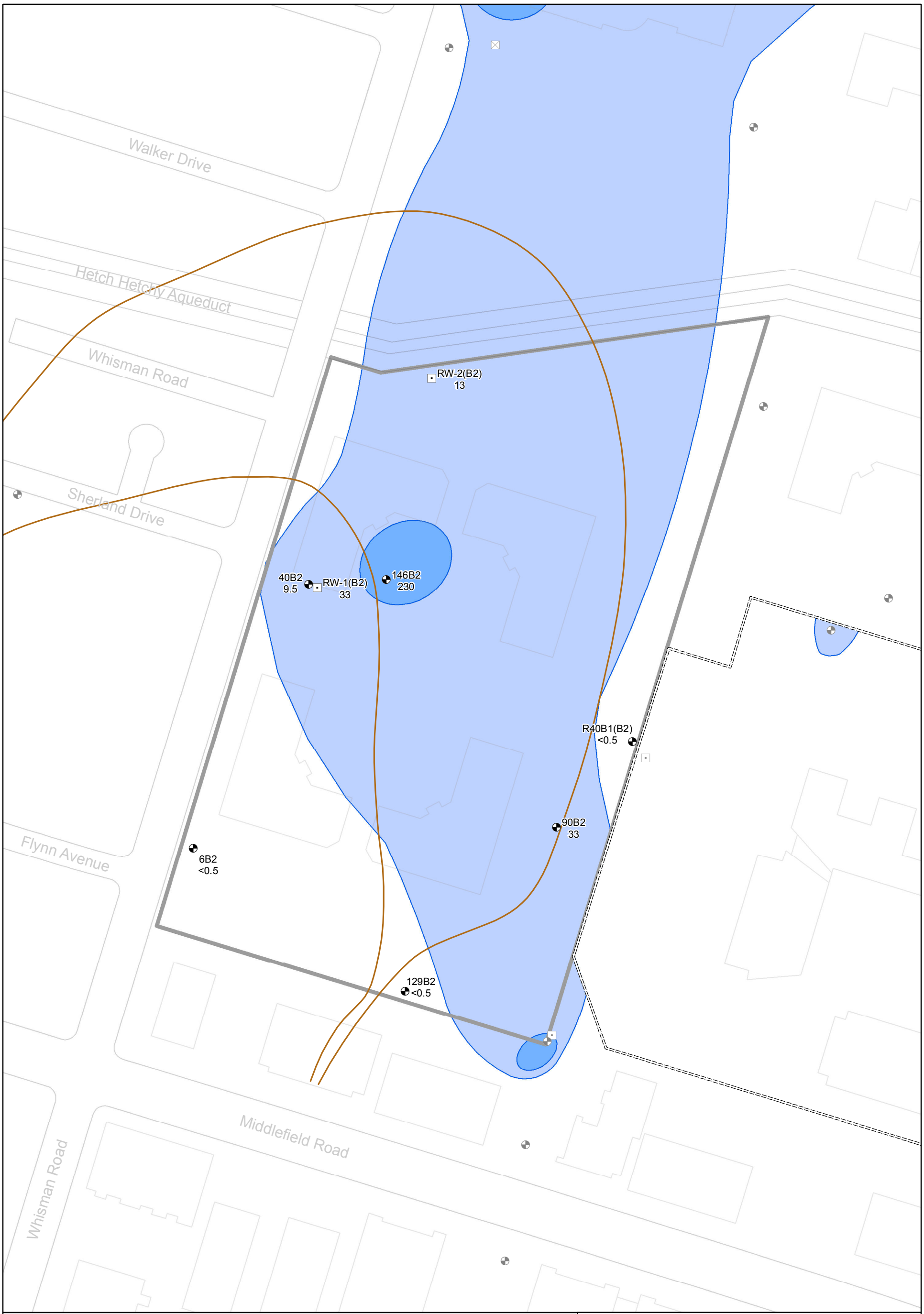
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure 21

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig21_TCE_B2_Sept2011_CZ.mxd | 4/10/2012 4:15:49 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

cDCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
cDCE = cis-1,2-Dichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for cDCE in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone cDCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

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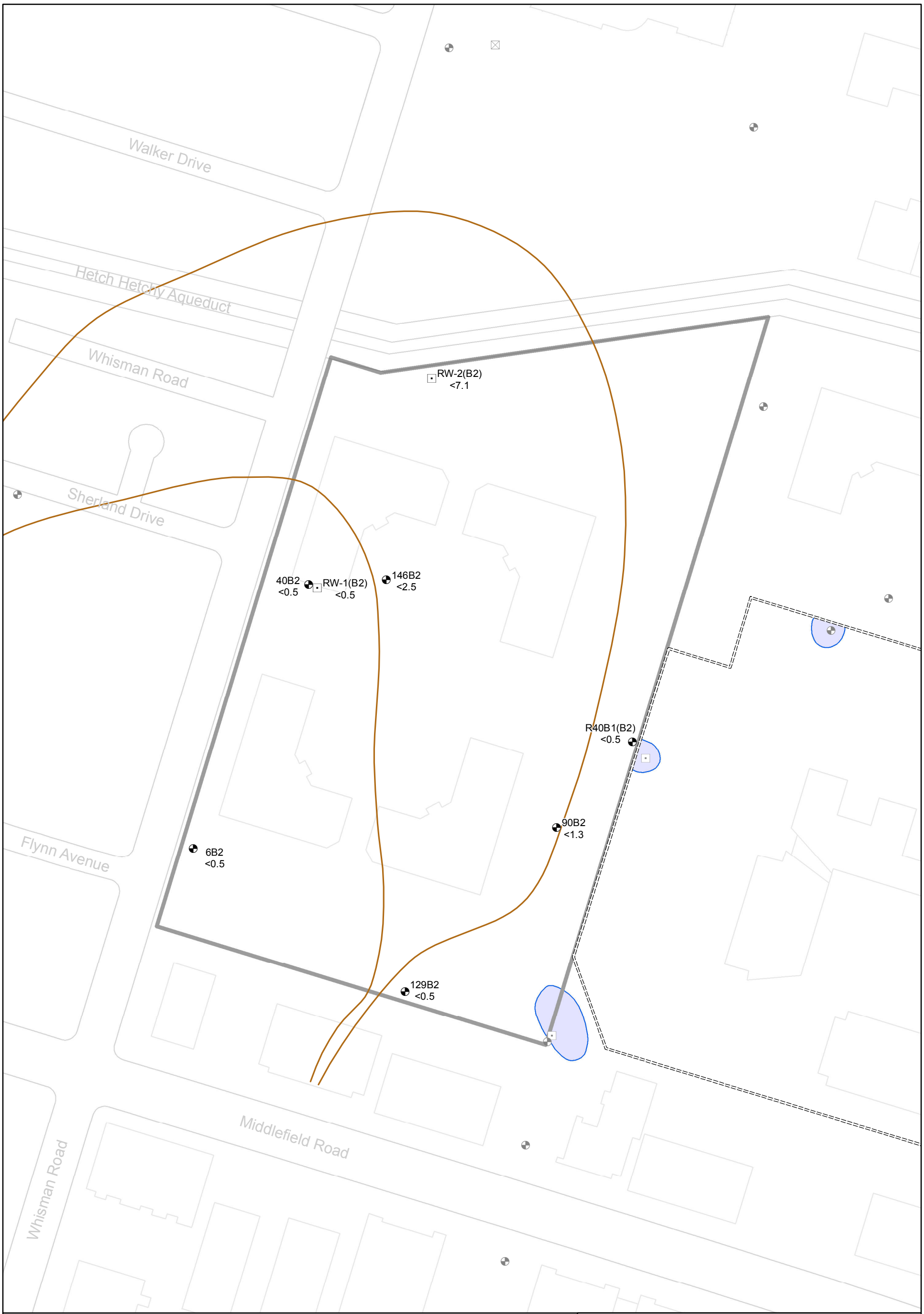
Figure 22

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig22_cDCE_B2_Sept2011_CZ.mxd | 4/10/2012 4:15:57 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

VC Concentration

- 0.5 - 5 ug/L
- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
VC = Vinyl Chloride
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for VC in 2011.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone VC Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure 23

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig23_VC_B2_Sept2011_CZ.mxd | 4/10/2012 4:16:05 PM

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

PCE Concentration

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L

- Estimated Capture Zone
- Slurry Wall
- Building
- Road
- Site Boundary

N

150 75 0 150 Feet

Notes:
PCE = Tetrachloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for PCE in 2011.
Wells not associated with the Former Fairchild
Buildings 13, 19, and 23 Site are shown in gray.

B2 Zone PCE Concentrations and Estimated Capture Zones September/October 2011

MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure 24

\\Oakland-01\Data\GIS\MEW\Project\Fairchild\Building19\2011_AR\Fig24_PCE_B2_Sept2011_CZ.mxd | 4/10/2012 4:16:13 PM

APPENDIX A

2011 Annual Report Remedy Performance Checklist

2011 Annual Report Remedy Performance Checklist

I. GENERAL SITE INFORMATION

Facility Name: Former Fairchild Facilities, Middlefield-Ellis-Whisman Study Area (MEW Site)

Facility Address, City, State: 515/545 North Whisman Road and 313 Fairchild Drive (former Bldgs. 1-4)
369 and 441 North Whisman Road (former Bldgs. 13 and 19 and 23)
401 National Avenue (former Bldg. 9)
644 National Avenue (former Bldg. 18)
464 Ellis Street (former Bldg. 20 and 20A)

Checklist completion date: 23 march 2012

EPA Site ID: System-1: CAR000164285
System-3: CAD095989778
System-19: CAR000164228

Site Lead: ☐ Fund ☑ PRP ☐ State ☐ State Enforcement ☐ Federal Facility ☐ Other: EPA Region IX

Site Remedy Components (Include Other Reference Documents for More Information, as appropriate):

1. Three slurry wall enclosures around former Buildings 1-4, Building 9, and Building 19. The slurry walls extend to a depth of about 40 feet below ground surface and are keyed a minimum of two feet into the A/B1 aquitard.
2. Extraction Systems as described below:

Buildings 1-4 – 20 recovery wells: three Regional Groundwater Remediation Program (RGRP) wells and 17 Source Control Recovery Wells (SCRWs)

Buildings 13, 19, 23 – 15 recovery wells: one RGRP well and 14 SCRWs

Building 9 – Four SCRWs

Building 18 – One SCRW and one basement dewatering sump

3. Treatment Systems as described below:

System 1 (treats water from Buildings 1-4, Building 9, and Building 18)

- Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.

System 3 (treats water from Buildings 1-4)

- Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.

System 19 (treats water from Buildings 13, 19, and 23)

- Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.

II. CONTACTS

List important personnel associated with the Site: Name, title, phone number, e-mail address:

	Name/Title	Phone	E-mail
RP/Facility Representative	Virgilio Cocianni Schlumberger Technology Corporation	281-285-4747	cocianni-v@slb.com
RP Consultant	John Gallinatti Geosyntec Consultants	510-285-2750	jgallinatti@geosyntec.com
RP Consultant	Alok Kolekar Weiss Associates	650-968-7000	adk@weiss.com

2011 Annual Report Remedy Performance Checklist

III. O&M COSTS (OPTIONAL)

What is your annual O&M cost total for the reporting year?_____
Breakout your annual O&M cost total into the following categories (use either dollars or %):

- Analytical (e.g., lab costs): _____
- Labor (e.g., site maintenance, sampling): _____
- Materials (e.g., treatment chemicals): _____
- Oversight (e.g., project management): _____
- Utilities (e.g., electric, gas, phone, water): _____
- Reporting (e.g., NPDES, progress): _____
- Other (e.g., capital improvements): _____

Describe unanticipated/unusually high or low O&M costs (go to section [fill in] to recommend optimization methods):

IV. ON-SITE DOCUMENTS AND RECORDS (Check all that apply)

☑ O&M Manual ☑ O&M Maintenance Logs ☐ O&M As-built drawings ☑ O&M reports
☑ Daily access/Security logs
☑ Site-Specific Health & Safety Plan ☑ Contingency/Emergency Response Plan
☑O&M/OSHA Training Records ☑ Settlement Monument Records
☐ Gas Generation Records ☑ Groundwater monitoring records ☐ Leachate extraction records
☑ Discharge Compliance Records
☐Air discharge permit ☑ Effluent discharge permit ☑ Waste disposal, POTW Permit

Are these documents currently readily available? ☑ Yes ☐ No If no, where are records kept?

Documents and records are available at treatment systems and/or on-site office located at 453 Ravendale Drive, Suite C, Mountain View, CA.

V. INSTITUTIONAL CONTROLS (as applicable)

List institutional controls called for (and from what enforcement document): Signs and other security measures are in place at extraction and treatment points.

Status of their implementation: Posted signage (Health & Safety and emergency contact information).

- Signs and other security measures are in place at extraction and treatment points.
- Groundwater production wells within plume area are prohibited. Administered by Santa Clara Valley Water District.
- Properties formerly owned by Fairchild have deed restrictions that require notification prior to subsurface construction and provide for access for remedial actions.
- Public notifications regarding remediation activities.

Where are the ICs documented and/or reported?

ICs are being properly implemented and enforced? ☑ Yes ☐ No, elaborate below
ICs are adequate for site protection? ☑ Yes ☐ No, elaborate below

Additional remarks regarding ICs:

2011 Annual Report Remedy Performance Checklist

VI. SIGNIFICANT SITE EVENTS **Check all Significant Site events Since the Last Checklist that Affects or May Affect Remedy Performance**
☐ Community Issues ☐ Vandalism ☐ Maintenance Issues ☐Other:
Please elaborate on Significant Site Events:
VII. REDEVELOPMENT
Is redevelopment on property planned? ☑ Yes ☐ No If yes, what is planned? Please describe below. Is redevelopment plan complete Yes, date:_____; ☑ No ? ☐ Not Applicable Redevelopment proposal in progress? ☑ Yes, elaborate below ☐ No; If no, is a proposal anticipated? ☐ Yes ☐ No
☑ Is the redevelopment proposal compatible with remedy performance? ☑ Yes ☐ No Elaborate on redevelopment proposal and how it affects remedy performance: 644 National Avenue property (former Building 18) has been bought by Carr America National Avenue LLC. The building will be removed and replaced by a multi-parcel development. Construction is anticipated to begin May/June 2012. 369 and 441 North Whisman Road (former Bldgs. 13 and 19 and 23), owned by Keenan, Lovewell Ventures, is developing plans for additional buildings on the site. The existing treatment systems and their components (conveyance piping, extraction wells, and monitoring wells) will be maintained or modified as appropriate to accommodate redevelopment.

2011 Annual Report Remedy Performance Checklist

VIII. GROUNDWATER REMEDY (reference isoconcentration, capture zone maps, trend analysis, and other documentation to support analysis)

Groundwater Quality Data

List the types of data that are available:	What is the source report?
Potentiometric surface maps, hydrographs Capture zone maps, isoconcentration maps VOC time series plots and trend analysis Laboratory Analytical Results and Reports	2011 Annual Fairchild Building Reports (Geosyntec, 2012) and the 2011 Annual Regional Report (Geosyntec, 2012)

☑ Contaminant trend(s) tracked during O&M (i.e., temporal analysis of groundwater contaminant trends).
☑ Groundwater data tracked with software for temporal analyses.
☐ Reviewed MNA parameters to ensure health of substrate (e.g., DO, pH, temperature), if appropriate?

Groundwater Pump & Treat Extraction Well and Treatment System Data

List the types of data that are available:	What is the source report?
O&M logs System Influent & Effluent water samples VOC mass and groundwater removal graphs	NPDES Self-Monitoring Reports 2011 Annual Fairchild Building Reports

☑ The system is functioning adequately.
☐ The system has been shut down for significant periods of time in the past year. Please elaborate below.

Discharge Data

List the types of data that are available:	What is the source report?
System performance data such as average flow rates, totalized flow, influent/effluent chemical data, GAC removal efficiencies	NPDES Self-Monitoring Reports

☑ The system is in compliance with discharge permits.

Slurry Wall Data

List the types of data that are available:	What is the source report?
Water level elevations in select well pairs Analysis of inward and upward hydraulic gradients	2011 Annual Fairchild Reports (Geosyntec, 2012)

Is slurry wall operating as designed? ☑ Yes ☐ No

If not, what is being done to correct the situation?

The slurry walls are operating as designed and are effective at impeding flow and preventing VOCs inside the wall from migrating downgradient. However, the ROD specifies that the slurry walls, "maintain inward and upward gradients." Historically, this has not been observed in all well pairs, even under maximum historical pumping scenarios.

The chemical concentration data and potentiometric surface contours from 2011 continue to demonstrate that the slurry walls are an effective means of impeding VOC migration outside of the slurry walls.

Elaborate on technical data and/or other comments

2011 Annual Report Remedy Performance Checklist

IX. AIR MONITORING/VAPOR INTRUSION PATHWAY EVALUATION (Include in Annual Progress Report and reference document)
Walk-throughs/Surveys: The EPA issued a ROD amendment on 16 August 2010 to address vapor intrusion. The MEW parties continued to work with EPA and local entities to implement the ROD amendment during 2011. In accordance with the Statement of Work for the Vapor Intrusion ROD Amendment, an annual report summarizing the status of the vapor intrusion remedy will be submitted under separate cover (Haley and Aldrich, 2012).
Summary of Results: See the Annual Vapor Intrusion Progress Report (Haley and Aldrich, 2012). **Problems Encountered:** See the Annual Vapor Intrusion Progress Report (Haley and Aldrich, 2012). **Recommendations/Next Steps:** See the Annual Vapor Intrusion Progress Report (Haley and Aldrich, 2012).
Schedule: See the Annual Vapor Intrusion Progress Report (Haley and Aldrich, 2012).
X. REMEDY PERFORMANCE ASSESSMENT
A. Groundwater Remedies
What are the remedial goals for groundwater? ☑ Plume containment (prevent plume migration); ☑ Plume restoration (attain ROD-specific cleanup levels in aquifer); ☐ Other goals, please explain: The groundwater remedy is hydraulic remediation by extraction and treatment. The Treatment System is reliable and consistent in its operation and mass removal ability, with greater than 95% up-time. The capture zones from the extraction wells provide sufficient overlap to achieve hydraulic control over the plume based on flow net evaluation and converging lines of evidence, including stable lateral extent of TCE exceeding 5 µg/L. Remediation is also demonstrated because concentrations within the TCE plume have continued to decrease in all zones. Groundwater with TCE concentrations exceeding 5 µg/L does not discharge to surface water. Have you done a trend analysis? ☑ Yes ☐ No; If Yes, what does it show? (Is it inconclusive due to inadequate data? Are the concentrations increasing or decreasing?) Explain and provide source document reference Concentrations within TCE plume have been evaluated using Mann-Kendall analysis and reviewing VOC concentrations over time. The analyses show that TCE concentrations continued to decrease, remain stable, or show no trend in all zones, while the lateral extent of TCE exceeding 5 µg/L has been stable. See Annual Reports for trends in monitoring wells (Geosyntec 2012).
If plume containment is a remedial goal, check all that apply: ☑ Plume migration is under control (explain basis below) ☐ Plume migration is not under control (explain basis below) ☐ Insufficient data to determine plume stability (explain below) (Include attachments that substantiate your answers, e.g., reference plume, trend analysis, and capture zone maps in source document)
Elaborate on basis for determining that plume containment goal is being met or not being met**:** Plume containment goal is met, slurry walls provide physical containment of sources on 369 N. Whisman Road, 401 National Avenue, 515/545 N. Whisman Road and 313 Fairchild Drive. Groundwater elevation and chemical monitoring results from 2011 demonstrate that the Fairchild extraction wells continue to achieve adequate horizontal and vertical capture based on converging lines of evidence, including graphical flow net analysis and chemical concentration trends.
If plume restoration is a cleanup objective, check all that apply: ☑ Progress is being made toward reaching cleanup levels (explain basis below) ☐ Progress is not being made toward reaching cleanup levels (explain basis below) ☐ Insufficient data to determine progress toward restoration goal (explain below)

Elaborate on basis for determining progress or lack of progress toward restoration goal:

The objective is to remediate and control the plume. VOC concentrations in groundwater continue to remain well below historical maximums, and generally show long-term decreasing trends. The groundwater extraction, treatment, and containment systems are functioning as intended and meet the Remedial Action Objectives for the Site.

B. Vertical Migration

Have you done an assessment of vertical gradients? ☑ Yes ☐ No; If Yes, what does it show? (Is it inconclusive due to inadequate data?

Are the concentrations increasing or decreasing? Explain and provide source document reference

In general, vertical gradients across the B and deeper water-bearing zones are upward. Upward vertical gradients are typical from the B- to A-zone, but downward vertical gradients are observed at a few locations.

Source document reference: 2011 Annual Fairchild Building Reports (Geosyntec, 2012)
2011 Annual Regional Report (Geosyntec, 2012)
2008 Optimization Evaluation (Geosyntec, 2008)

C. Source Control Remedies

What are the remedial goals for source control?

Capture of former source areas is the goal for source control. Cleanup standards are Maximum Contaminant Level (MCLs) in upper groundwater zones; the TCE MCL is 5 µg/L.

Elaborate on basis for determining progress or lack of progress toward these goals:

Capture zone analysis in the 2011 Fairchild Building and RGRP Annual Progress Reports indicate containment of target capture areas.

XI. PROJECTIONS

Administrative Issues
Dates of next monitoring and sampling events for next annual reporting period: September/October 2012

A. Groundwater Remedies - Projections for the upcoming year and long-term (Check all that apply)

Remedy Projections for the upcoming year (2012/2013)
☑ No significant changes projected.
☐ Groundwater remedy will be converted to monitored natural attenuation. Target date:
☐ Groundwater Pump & Treat will be shut down. Target date:
☐ Groundwater cleanup standards to be modified. Target date:
☐PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in the number and/or types of analytes being analyzed. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in groundwater extraction system. Expansion or minimization (i.e., number of extraction wells and/or pumping rate)? Target date:
☐ Modification on groundwater treatment? Elaborate below. Target date:
☐ Change in discharge location. Target date:
☐ Other modification(s) anticipated: Groundwater Feasibility Study Elaborate below. Target date: 2012

Elaborate on Remedy Projections: The EPA is developing a Groundwater Feasibility Study for MEW.

2011 Annual Report Remedy Performance Checklist

Remedy Projections for **the long-term** (Check all that apply)
☐ No significant changes projected.
☐ Groundwater remedy will be converted to monitored natural attenuation. Target date:
☐ Groundwater Pump & Treat will be shut down. Target date:
☐ Groundwater cleanup standards to be modified. Target date:
☐ PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☐Change in the number and/or types of analytes being analyzed. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in groundwater extraction system. ☐ Expansion or ☐ minimization (i.e., number of extraction wells and/or pumping rate)? Target date:
☐ Modification on groundwater treatment? Elaborate below. Target date:
☐ Change in discharge location. Target date:
☑ Other modification(s) anticipated: Groundwater Feasibility Study Elaborate below. Target date: 2012

Elaborate on Remedy Projections: The EPA is developing a Groundwater Feasibility Study for MEW.

B. Projections – Slurry Walls (Check all that apply)

Remedy Projections for **the upcoming year**
☐ No significant changes projected.
☐ PRP will request remedy modification. Target date of request:
☐Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☑ Other modification(s) anticipated: Groundwater Feasibility Study Elaborate below. Target date: 2012

Elaborate on Remedy Projections:

Remedy Projections for **the long-term**
☐ No significant changes projected.
☐ PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☑ Other modification(s) anticipated: Groundwater Feasibility Study Elaborate below. Target date: 2012

Elaborate on Remedy Projections: The EPA is developing a Groundwater Feasibility Study for MEW.

C. Projections – Other Remedial Options Being Reviewed to Enhance Cleanup

Progress implementing recommendations from last report or Five-Year Review
Has optimization study been implemented or scheduled? ☑ Yes; No; If Yes, please elaborate.

Extraction rates were modified in 2010 based on an Optimization Evaluation conducted in 2008 (Geosyntec, 2008).

XII. ADMINISTRATIVE ISSUES
Check all that apply:

☐ Explanation of Significant Differences in progress ☐ ROD Amendment in progress
☐ Site in operational and functional ("shake down") period;
☐ Notice of Intent to Delete in progress ☐ Partial site deletion in progress ☐ TI Waivers
☑ Other administrative issues:

Site-Wide Focused Groundwater Feasibility Study for Groundwater being conducted by EPA.

Date of Next EPA Five-Year Review: September 30, 2014

XIII. RECOMMENDATIONS

APPENDIX B

Laboratory Analytic Reports and Chain-of-Custody Documents, January through December 2011

(This appendix is being submitted on CD to the EPA only and is available upon request.)

APPENDIX C

QA/QC Report, Summary Tables, and Criteria

Weiss Associates

M E M O R A N D U M

TO: Carolyn Kneiblher, C.HG.
Geosyntec Consultants

FROM: Alok D. Kolekar, P.E.
Weiss Associates

RE: **2011 DATA QUALITY SUMMARY**
FORMER FAIRCHILD BUILDING 19
MIDDLEFIELD-ELLIS-WHISMAN AREA SUPERFUND SITE
MOUNTAIN VIEW, CALIFORNIA

DATE: April 6, 2012

This memorandum summarizes data quality for groundwater and treatment system water samples collected in 2011 from monitoring wells associated with former Fairchild Building 19 and groundwater extraction and treatment systems (GWETS) No. 19 at the Middlefield-Ellis-Whisman (MEW) Area Superfund Site in Mountain View, California. The groundwater samples were collected during the 2011 annual groundwater sampling event in September and October, and the treatment system samples were collected bi-weekly from the influent, midpoint and effluent sample ports at each GWETS. Detailed results for quality assurance/quality control (QA/QC) samples collected during the MEW annual groundwater sampling are presented in Weiss Associates' (Weiss) memorandum titled, "Data Quality Assurance/Quality Control Report, 2011 Groundwater Sampling, Middlefield-Ellis-Whisman Area Superfund Site" and dated March 9, 2012.

The analytical laboratory data and accompanying quality assurance/quality control (QA/QC) information were reviewed for precision, accuracy, reproducibility, and completeness in accordance with the approved MEW 1991 *Quality Assurance Project Plan* (QAPP).[1] In addition, the data quality review was based on Weiss Associates' Standard Operating Procedures (SOPs) for data verification, data validation, and validation procedures for metals, volatile organic chemicals (VOCs), and semivolatile organic chemicals. The SOPs functionally adhere to the most recent USEPA *Contract Laboratory Program National Functional Guidelines for Organic (October 1999) and Inorganic (February 1994) Data Review*. As specified by the QAPP and the SOPs, Weiss Associates collected field QA/QC samples and performed a laboratory data quality review.

FIELD QA/QC SAMPLE COLLECTION

To assess the reliability of field sampling procedures and materials, the following field QA/QC samples were collected or prepared for the annual groundwater sampling and GWETS sampling:

- Field duplicate – Field duplicate samples are blind duplicates that provide data to assess precision of the contract laboratory. Field duplicates are specified to be collected at a frequency of 1 for every 20 field samples collected.
- Matrix spike/Matrix spike duplicate – Matrix spike/matrix spike duplicate (MS/MSD) samples measure the accuracy and precision of the analytical

[1] 1991, *Quality Assurance Project Plan Middlefield-Ellis-Whisman Site, Mountain View, California,* prepared by Canonie Environmental, Rev. 1.0,; August 16, 1991. This document is sometimes referred to as the Unified QAPP because it is used by MEW, NASA and Navy.

methods MS/MSD samples are specified at a frequency of 1 for every 20 field samples collected.

- Rinseate blank – These samples consist of reagent water collected from a final rinse of sampling equipment after the decontamination procedure has been performed. The purpose of rinseate samples is to evaluate whether the sampling equipment may be causing cross-contamination of the samples. Rinseate blank sampling is not necessary for locations that have dedicated sample collection, such as at GWETS sample ports. Following equipment decontamination, deionized/organic-free water used for the final rinse is collected in appropriate bottles. Rinseate samples were specified at a frequency of 1 for every 20 field samples that are collected using reusable sample collection equipment.
- Field blank – These samples consist of source water used for decontamination of equipment. The purpose of field blanks is to evaluate whether source water is contributing to contamination of samples. Field blanks were collected at a frequency of 5% of the field samples collected.
- Trip blank – These samples consist of "clean," volatile organic analysis vials (VOAs) filled with deionized/organic-free water and preserved. These pre-filled VOAs are supplied by the laboratory and accompany other samples in the field and on their trip to the laboratory. The purpose of the trip blank is to evaluate whether exposure to sampling site conditions, storage, and shipment of samples may be causing contamination after the samples are collected. Trip blanks are collected only when samples are collected for VOC analysis. One trip blank accompanies each VOC sample shipment.

LABORATORY DATA QUALITY REVIEW PARAMETERS

For the 2011 annual groundwater sampling event, the sample results were verified for completeness using a Level 2 data review summary per the QAPP and SOPs. The following parameters were reviewed in this review:

- Holding time;
- Detection and reporting limits;
- Surrogate recovery (VOC methods only);
- Laboratory control sample recovery;
- Matrix spike and spike duplicate recovery;
- Method blank results;
- Travel blank results (VOC methods only);
- Field/rinseate blank results; and
- Field sample duplicates results.

Ten percent of the sample delivery groups underwent a Level 4 data validation as required by the QAPP. The samples intended for the Level 4 data validation were documented on separate chain-of-custody forms than the other samples. Level 4 validation procedures vary by method. In addition

to the Level 2 verification parameters listed above, the Level 4 validation parameters for organic (e.g., VOC) analyses include:

- Ion abundance;
- Minimum number of initial calibration standards analyzed;
- Relative response factors in initial and continuing calibrations;
- Percent of relative standard deviations in initial calibrations;
- Percent of differences in continuing calibrations;
- Internal standard retention times;
- Internal standard area counts;
- Analytical sequence carryover;
- Dilutions performed appropriately;
- Calibration blank contamination; and
- Data package completeness for all raw data, including chromatograms and bench sheets, for calibration standards, quality control data, and samples.

The Level 4 review of inorganic (e.g., metal) data include:

- Minimum number of initial calibration standards analyzed;
- All initial calibration verification recoveries within established limits;
- Initial calibration correlation coefficients within established limits;
- Continuing calibration verification recoveries within established limits;
- Analytical sequence carryover;
- Dilutions performed appropriately;
- Laboratory duplicate results within established limits;
- Initial and continuing calibration blank contamination; and
- Data package completeness for all raw data, including bench sheets, for calibration standards, quality control data, and sample.

Weiss Associates' Project Chemist assigned qualifiers to data that were found outside the control limits specified by the QAPP and data evaluation SOPs. Data qualifiers defined in the USEPA *Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review* were used.

A total of 47 groundwater samples were collected from monitoring wells associated with former Fairchild Building 19 and from extraction wells connected to GWETS No. 19 during the annual sampling. These samples were analyzed by Curtis and Tompkins, Ltd in Berkeley, California for:

- Halogenated VOCs by U.S. EPA Method 8260B (44 samples)
- Metals by U.S. EPA Method 6010B (3 samples)

A total of 39 treatment system samples were collected from GWETS No. 19 throughout the year. The following laboratory analyses were conducted:

- Halogenated VOCs by U.S. EPA Method 8260B (35 samples)
- 1,4-Dioxane by U.S. EPA Method 8270C, selected ion monitoring (SIM) (2 samples)
- Acute toxicity of effluents to freshwater and marine organisms by Method EPA-821-R-02-012 (1 sample)
- Turbidity by U.S. EPA Method 180.1 (1 sample)

The samples were collected, stored, transported, and managed according to USEPA protocols based on Weiss' review of field and laboratory documentation. The laboratories reported that sample temperature and holding times were within acceptable ranges. Custody seals were used for each set of samples as specified by the QAPP.

No data non-conformances were identified during the data verification and validation process. Thus, no data qualifiers were necessary, and the data are usable for their intended purposes. Tables 1 and 2 summarize the conformance with sampling and analytical QA/QC methods, respectively.

Table 1. Summary of Conformance with Sampling QA/QC Methods for Water Samples Collected in 2011, Former Fairchild Building 19, 369/441 Whisman Road, Mountain View, California.

Who performed sampling (Firm name/address/contact/phone):	Weiss Associates 453 Ravedale Drive, Suite C, Mountain View, CA 94043 Alok D. Kolekar (650) 968-7000
Chain-of-custody forms completed for all samples?	YES
Field parameters stabilized prior to taking sample?	YES
Headspace in sample containers < 6mm (applicable to VOCs only)?	YES
Samples preserved according to analytical method?	YES
Required field QA/QC samples taken?	YES

Explain any "NO" answers.

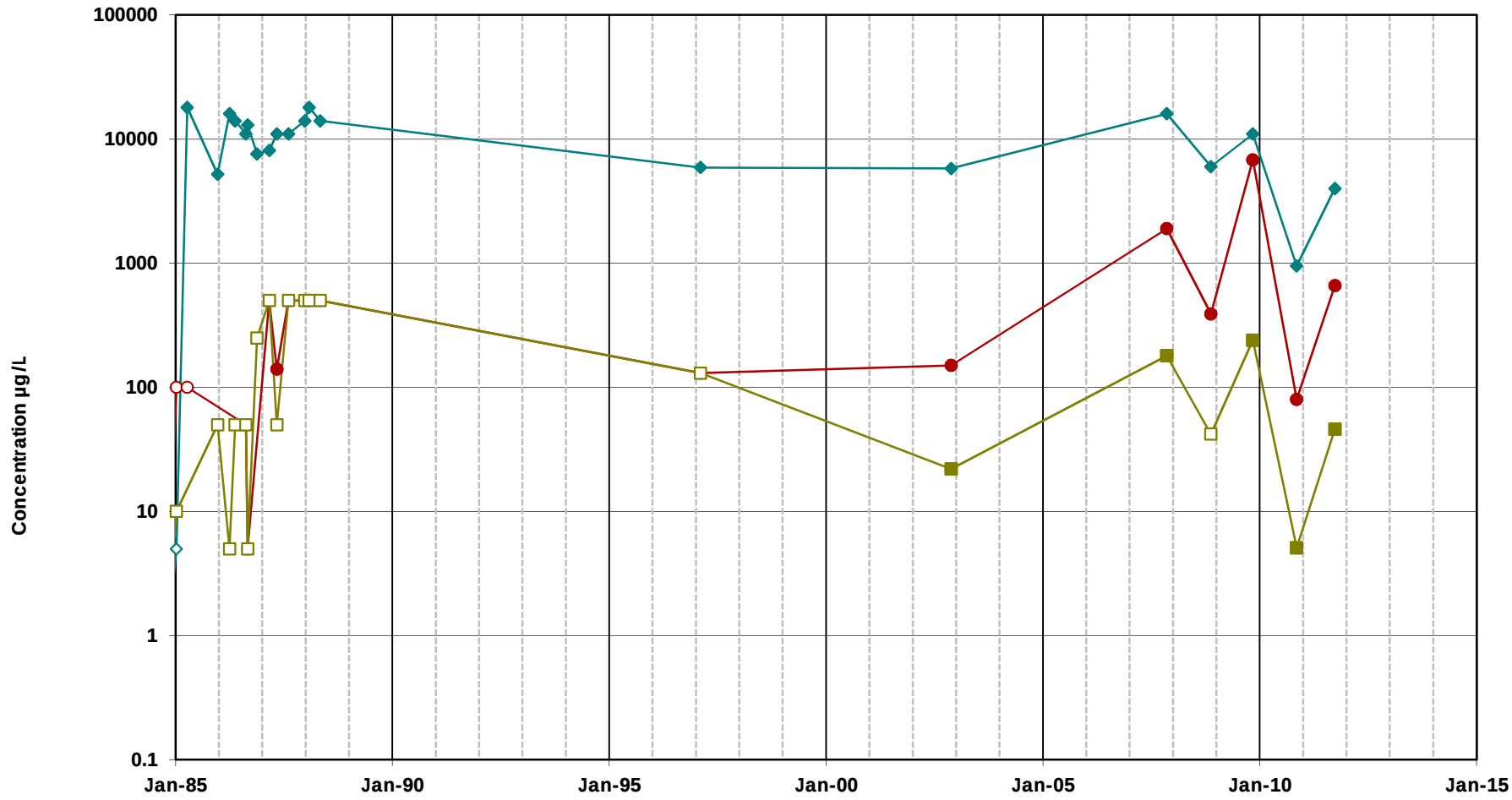
Table 2. Summary of Conformance with Analytical QA/QC Methods for Water Samples Collected in2011, Former Fairchild Building 19, 369/441 Whisman Road, Mountain View, California.

Who performed analysis (Lab name/address/contact/phone):	Curtis and Tompkins 2323 Fifth Street Berkeley, CA 94710 Micah Smith (510) 204-2223 Block Environmental Services, Inc. 2451 Estand Way Pleasant Hill, CA 94523 Phone. (925) 682-7200
Are the labs state-certified for the above-noted analytical methods?	YES
Analyses performed according to standard methods?	YES
Sample holding times met?	YES
Analytical results reported for all values above MDL?	YES
QA/QC analyses run consistent with analytical methods?	YES
QA/QC results meet all acceptance criteria?	YES
QA/QC results and acceptance criteria on file?	YES

Explain any "NO" answers.

APPENDIX D

Selected VOC versus Time Graphs



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

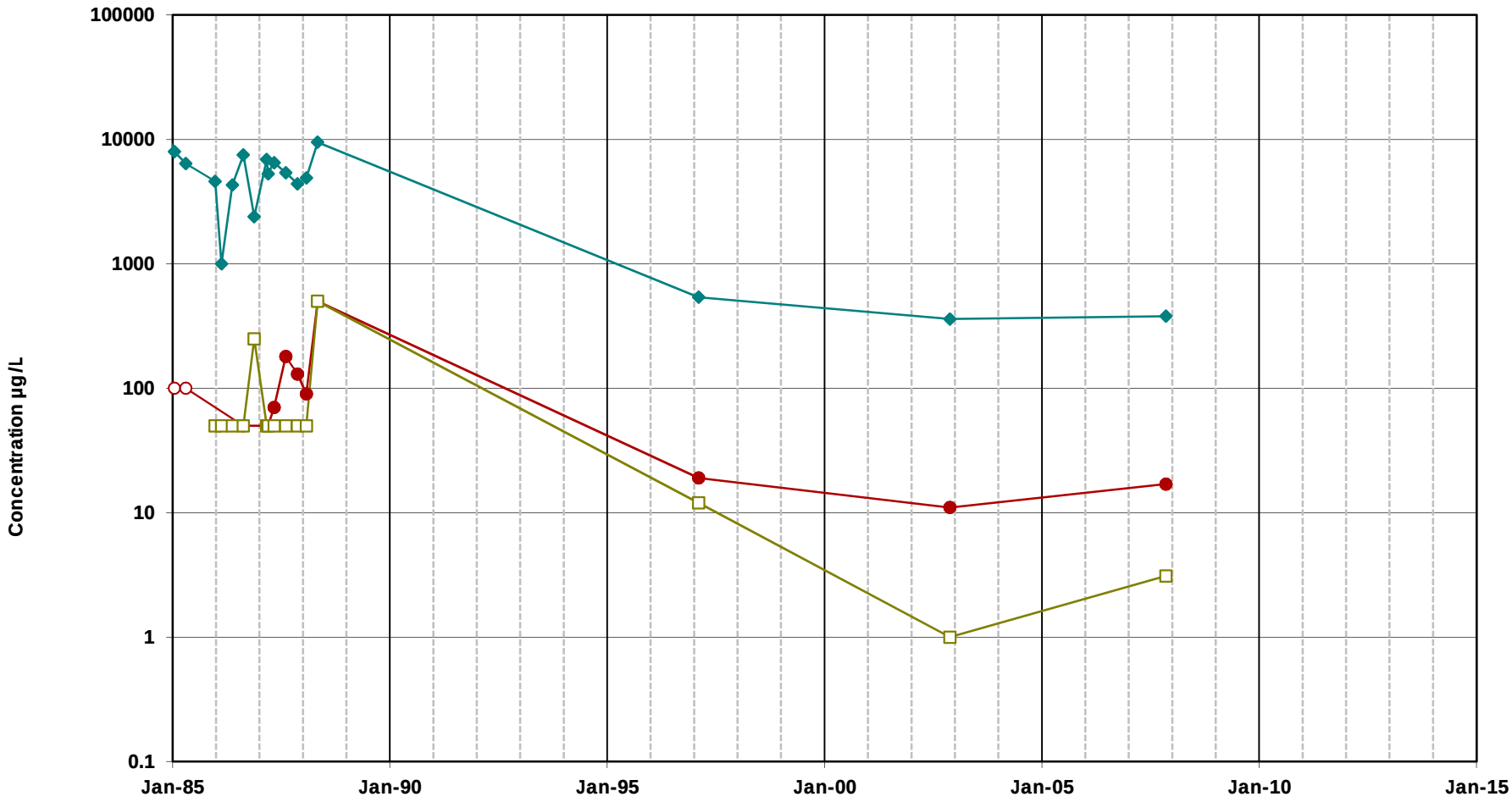
Chlorinated Ethenes in Groundwater
Well 4A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-01

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[4A_VOC.xls]Plot_4A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

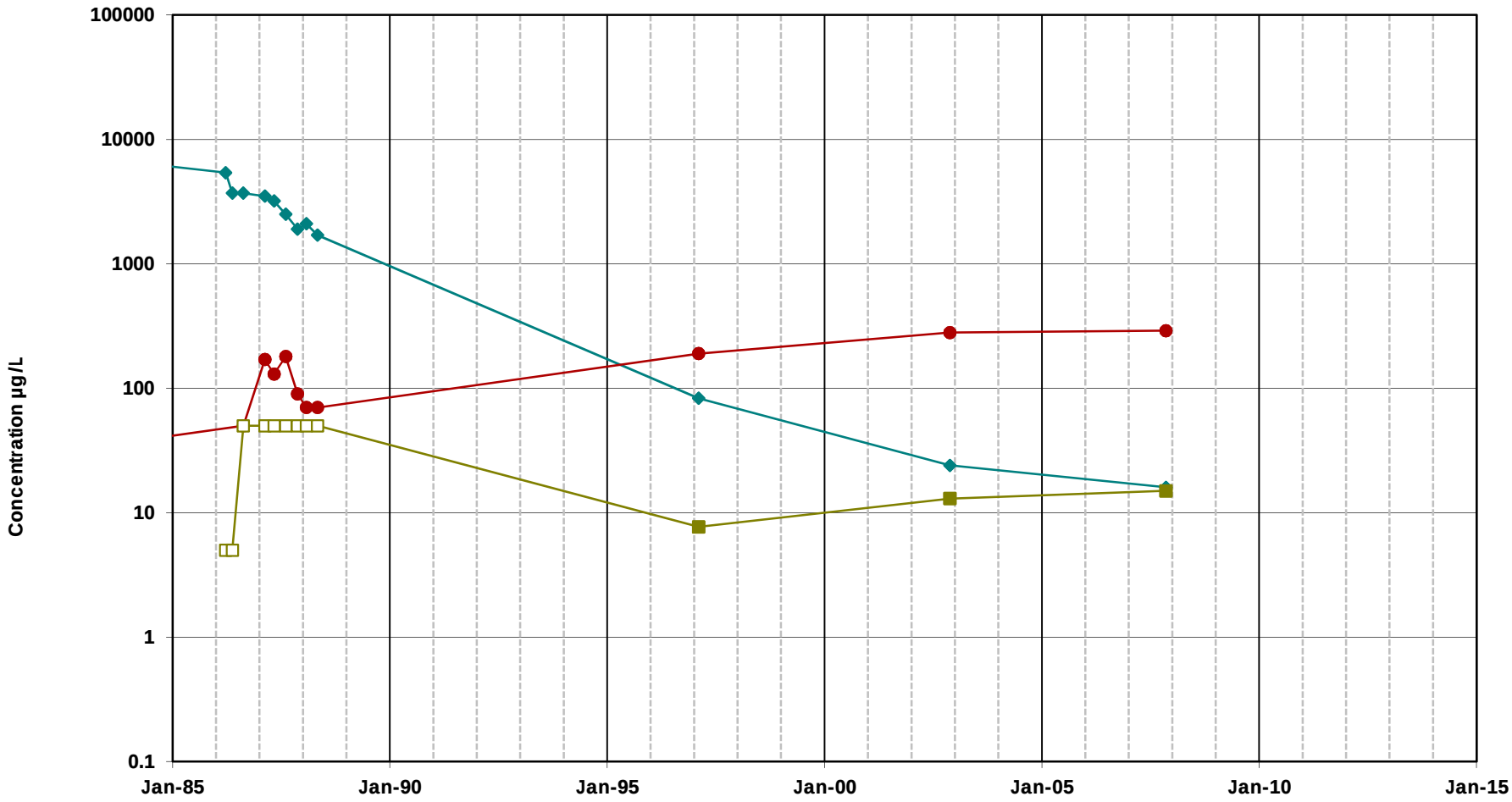
Chlorinated Ethenes in Groundwater
Well 6A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-02

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[6A_VOC.xls]Plot_6A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

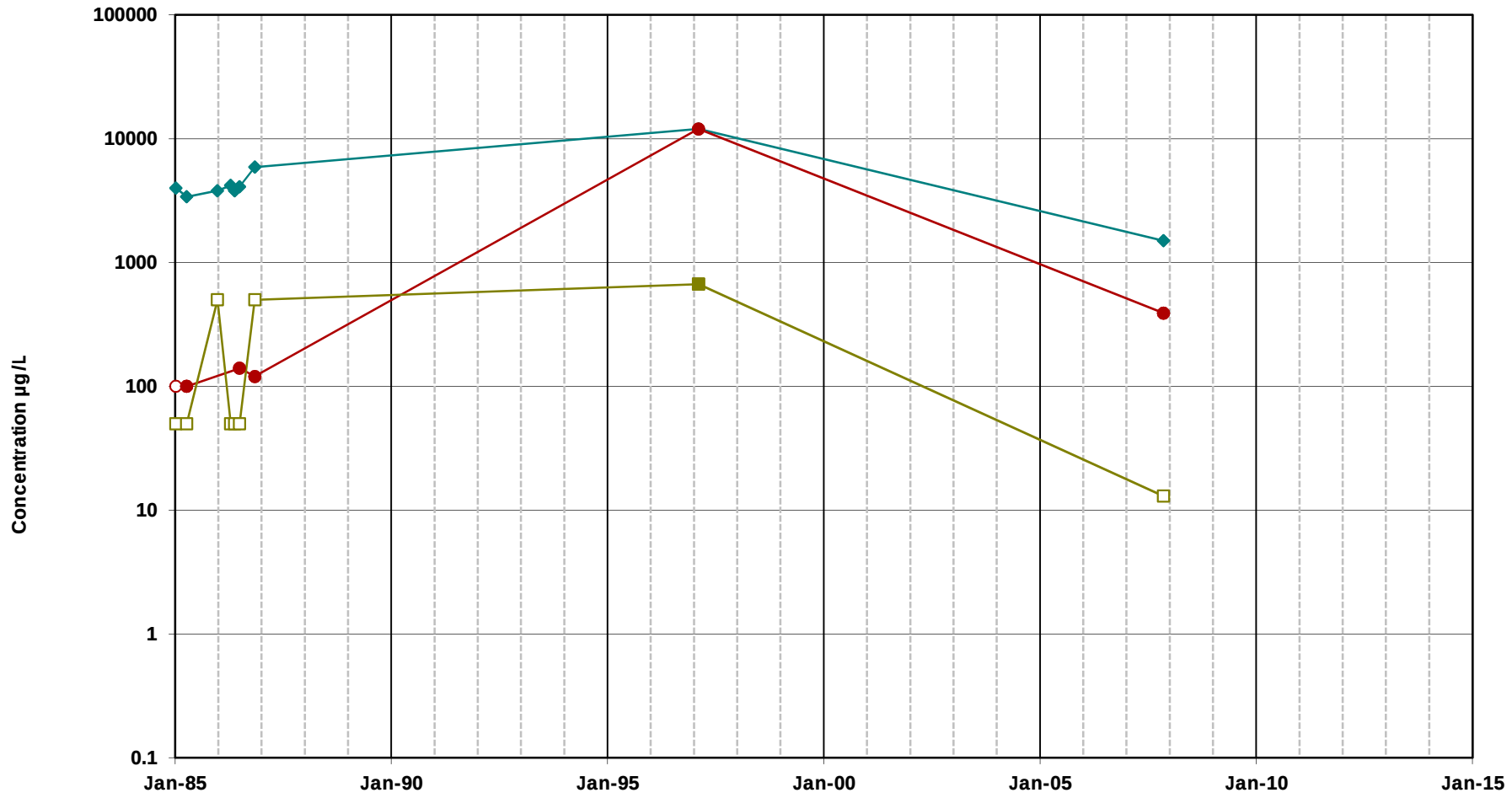
Chlorinated Ethenes in Groundwater
Well 9A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-03

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[9A_VOC.xls]Plot_9A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

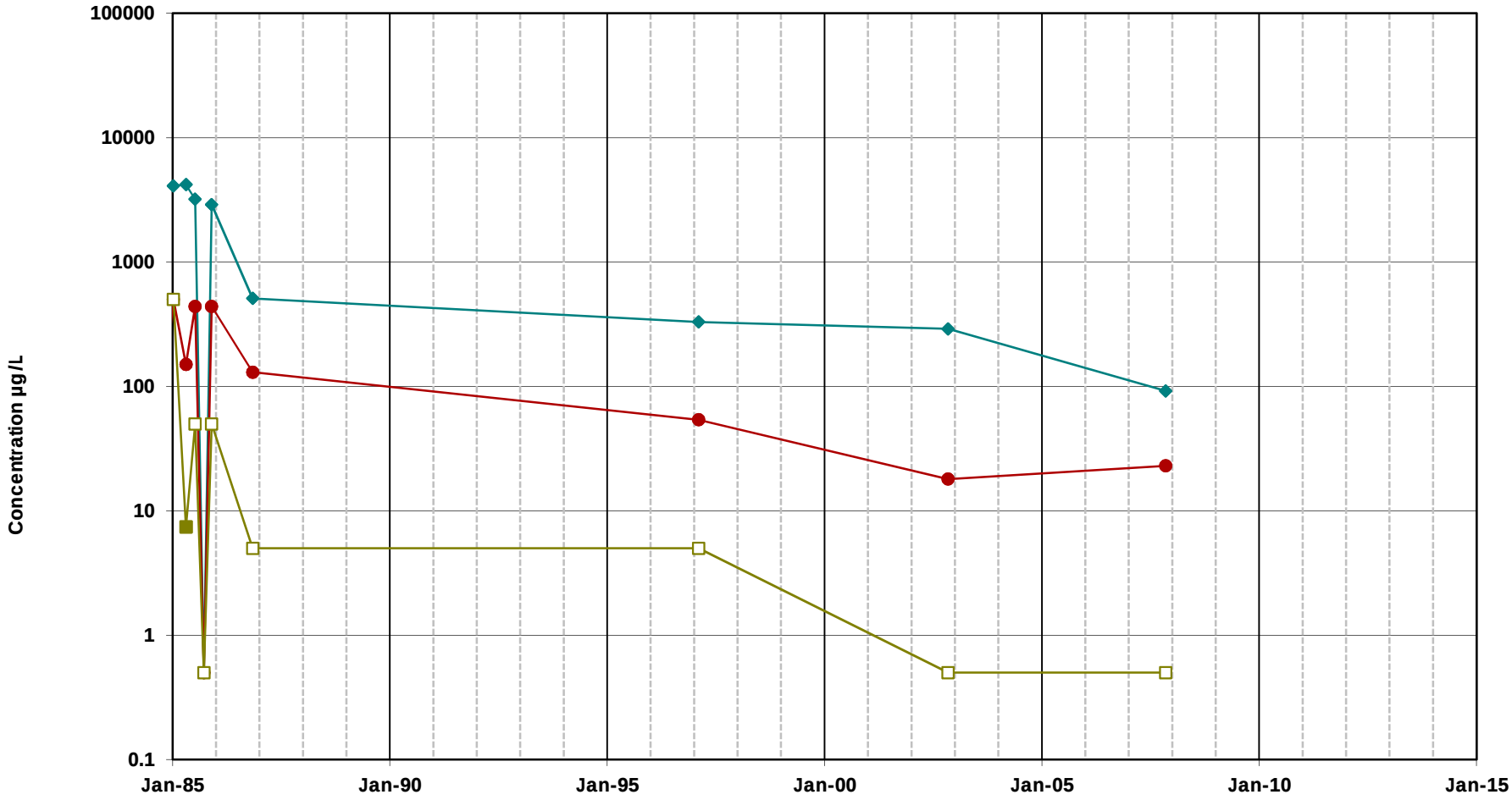
Chlorinated Ethenes in Groundwater
Well 12A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-04

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[12A_VOC.xls]Plot_12A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

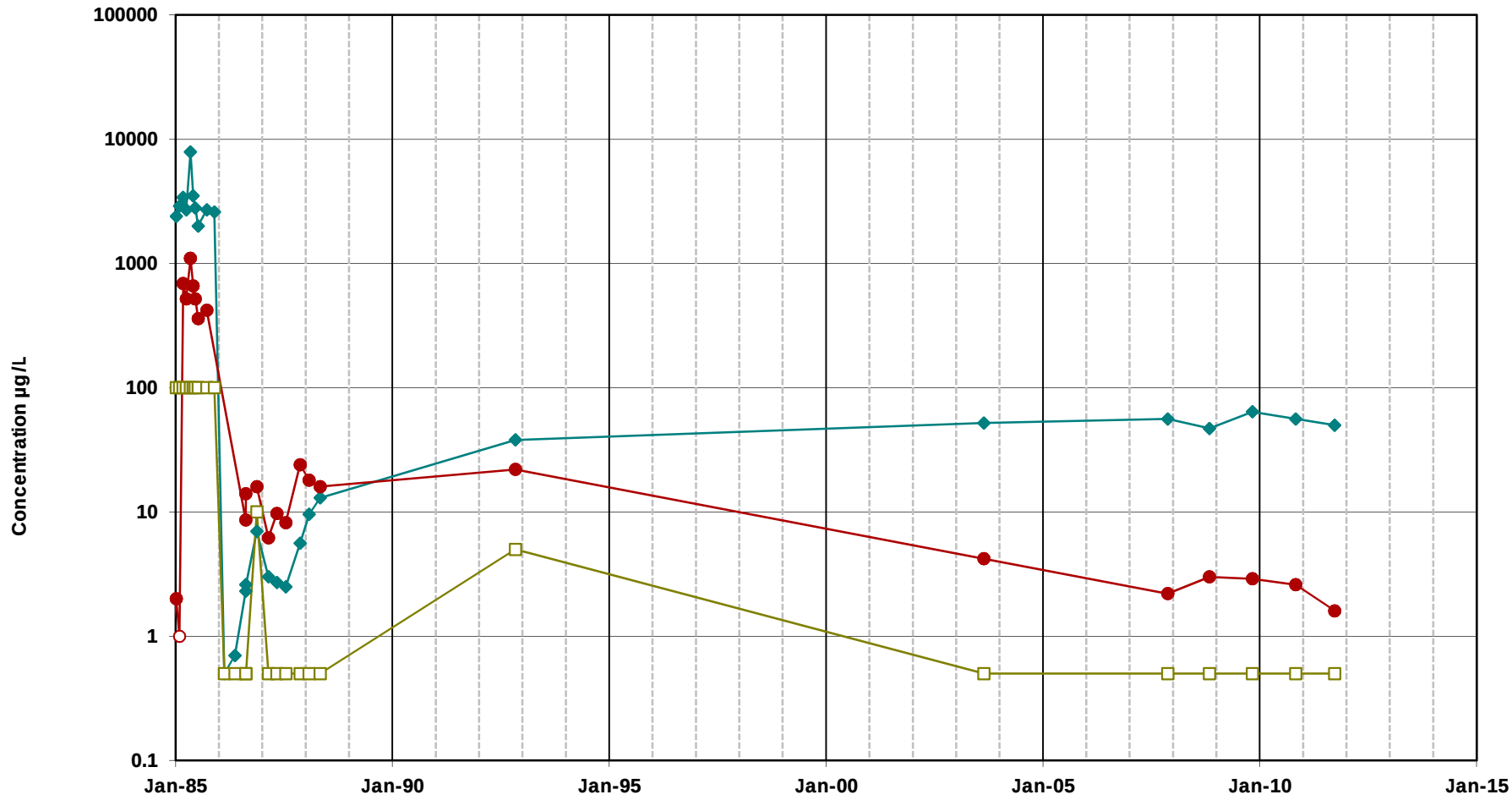
Chlorinated Ethenes in Groundwater
Well 15A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-05

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[15A_VOC.xls]Plot_15A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 16A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-06

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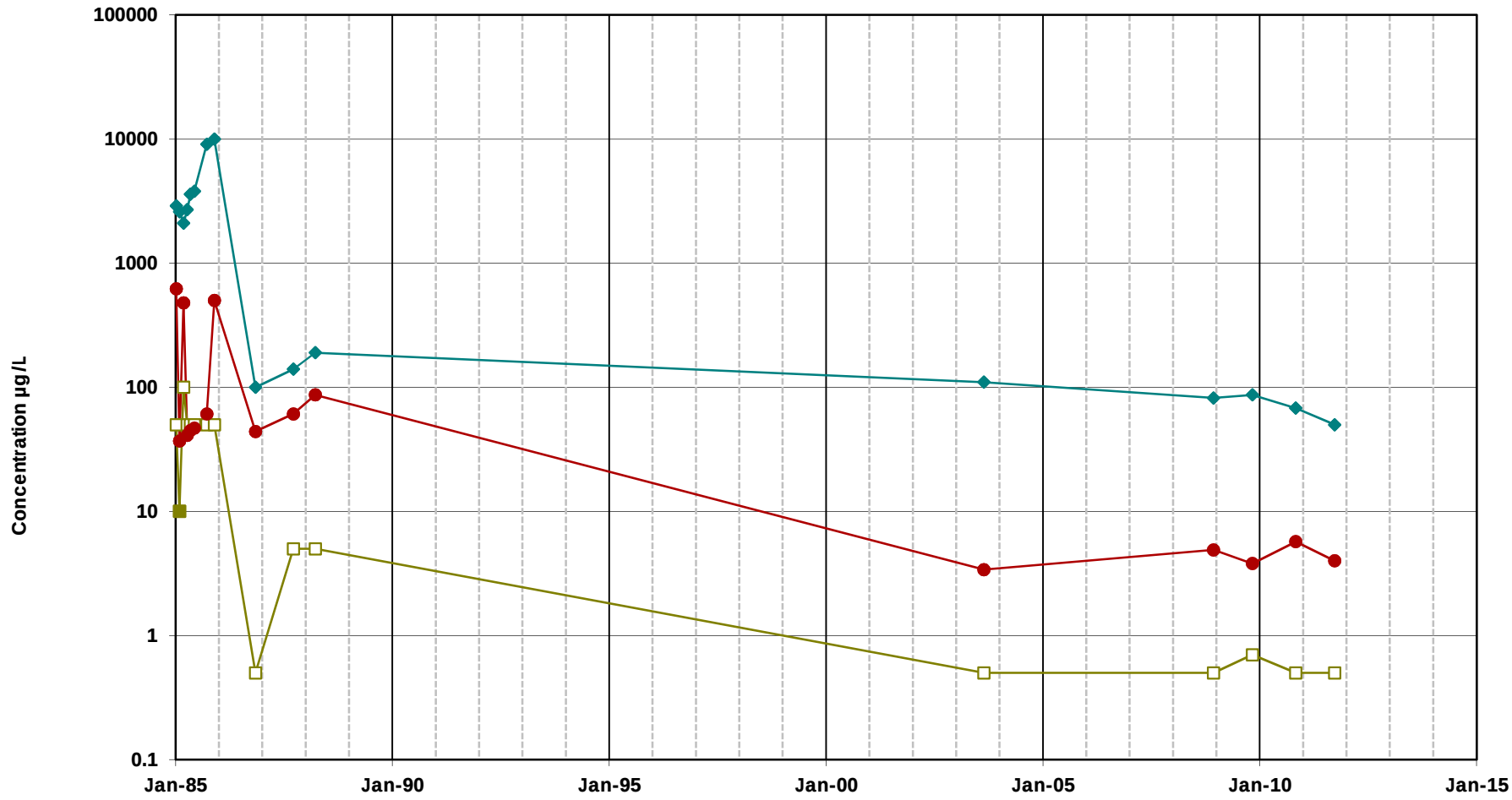


Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

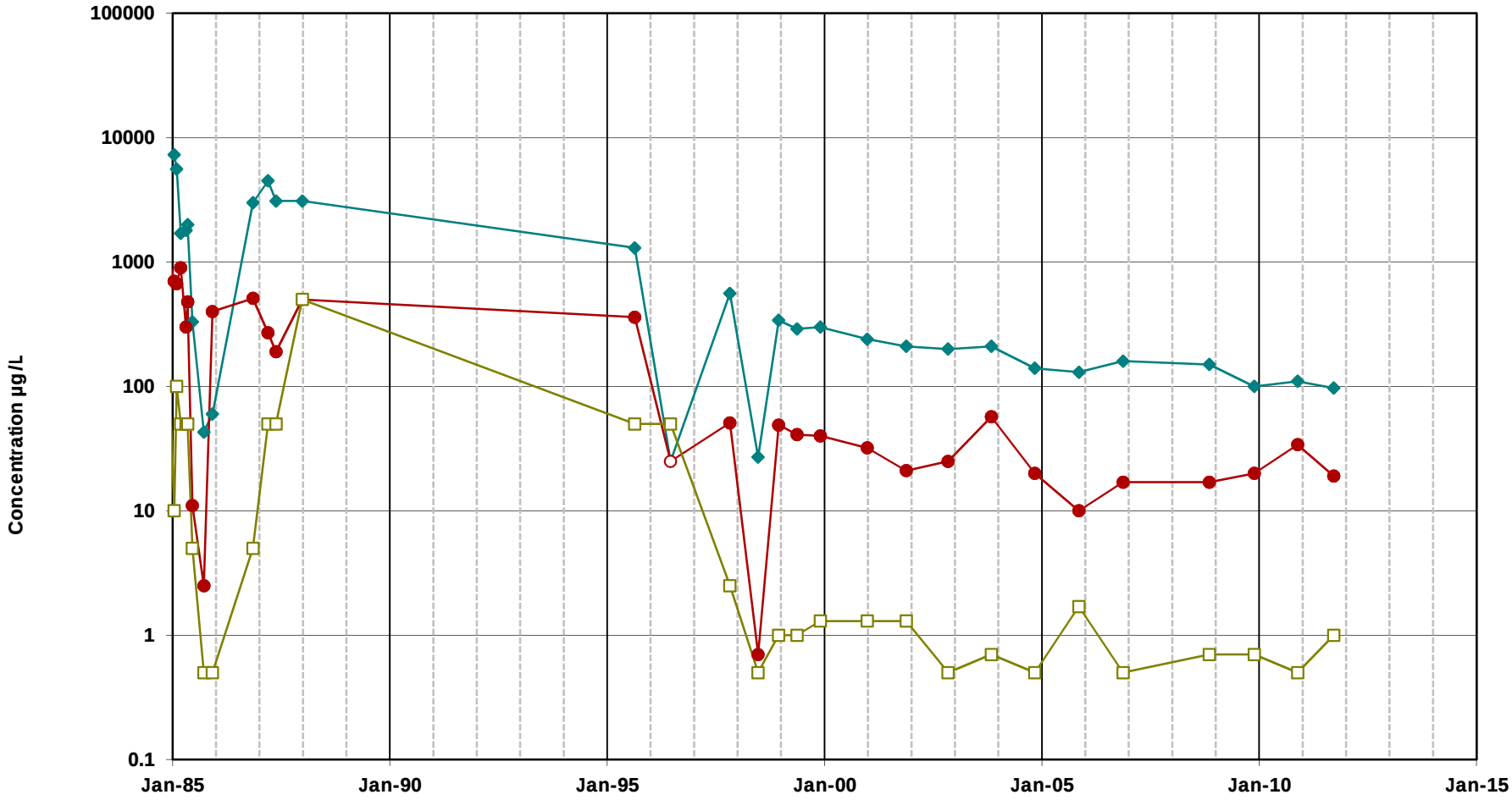
Chlorinated Ethenes in Groundwater
Well 17A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-07

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[17A_VOC.xls]Plot_17A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

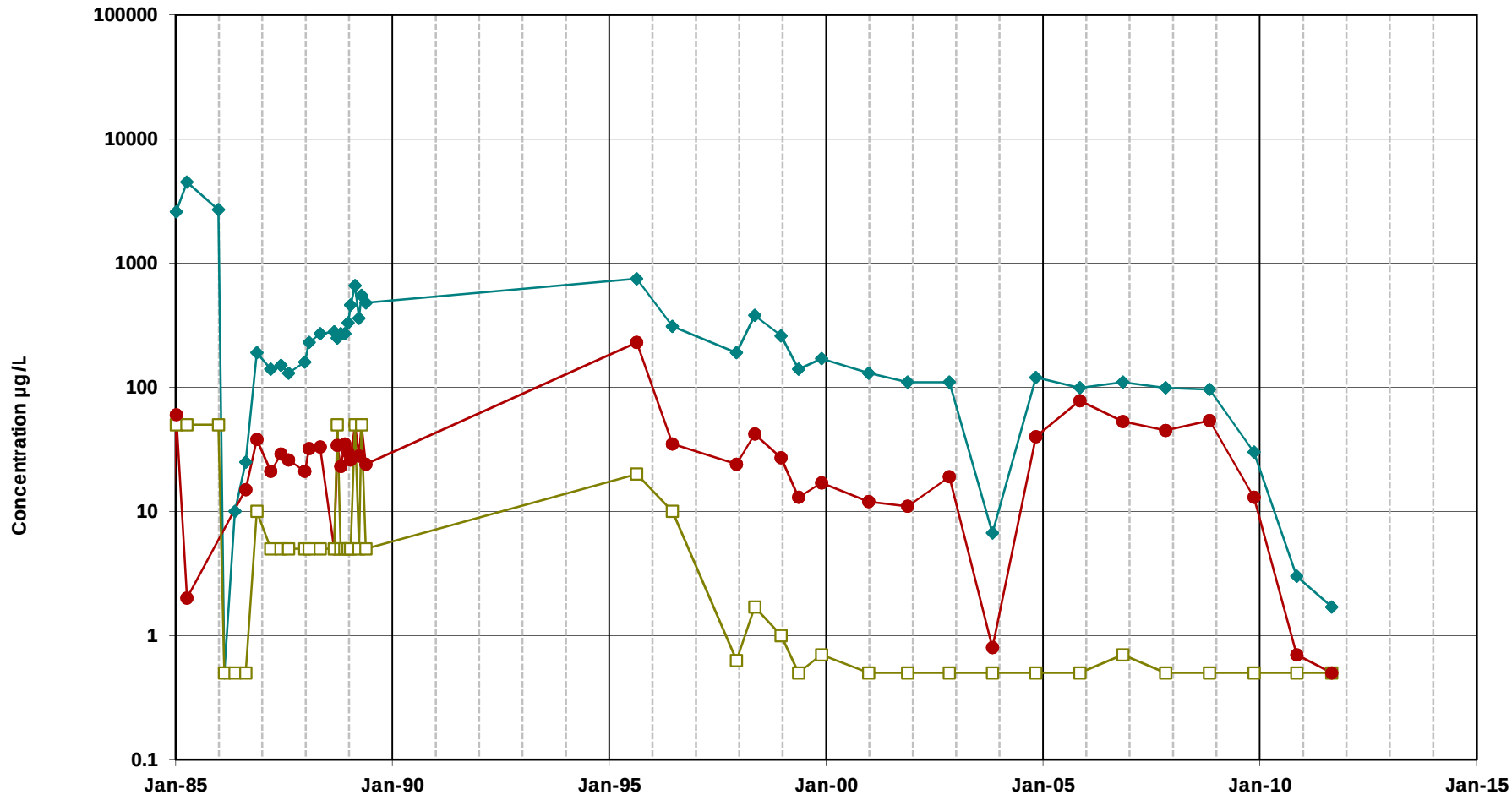
Chlorinated Ethenes in Groundwater
Well 22A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-08

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[22A_VOC.xls]Plot_22A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

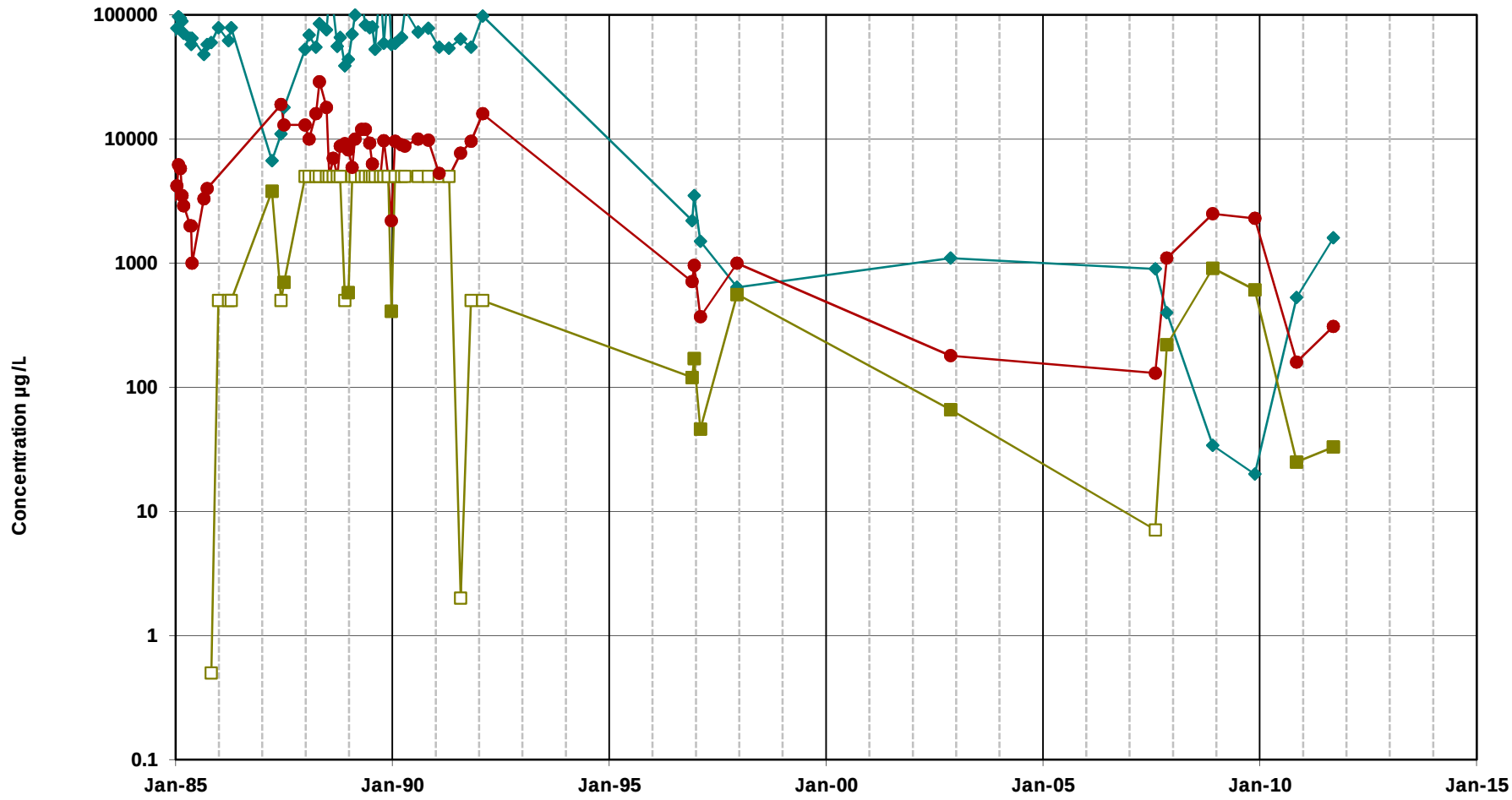
Chlorinated Ethenes in Groundwater
Well 23A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-09

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[23A_VOC.xls]Plot_23A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

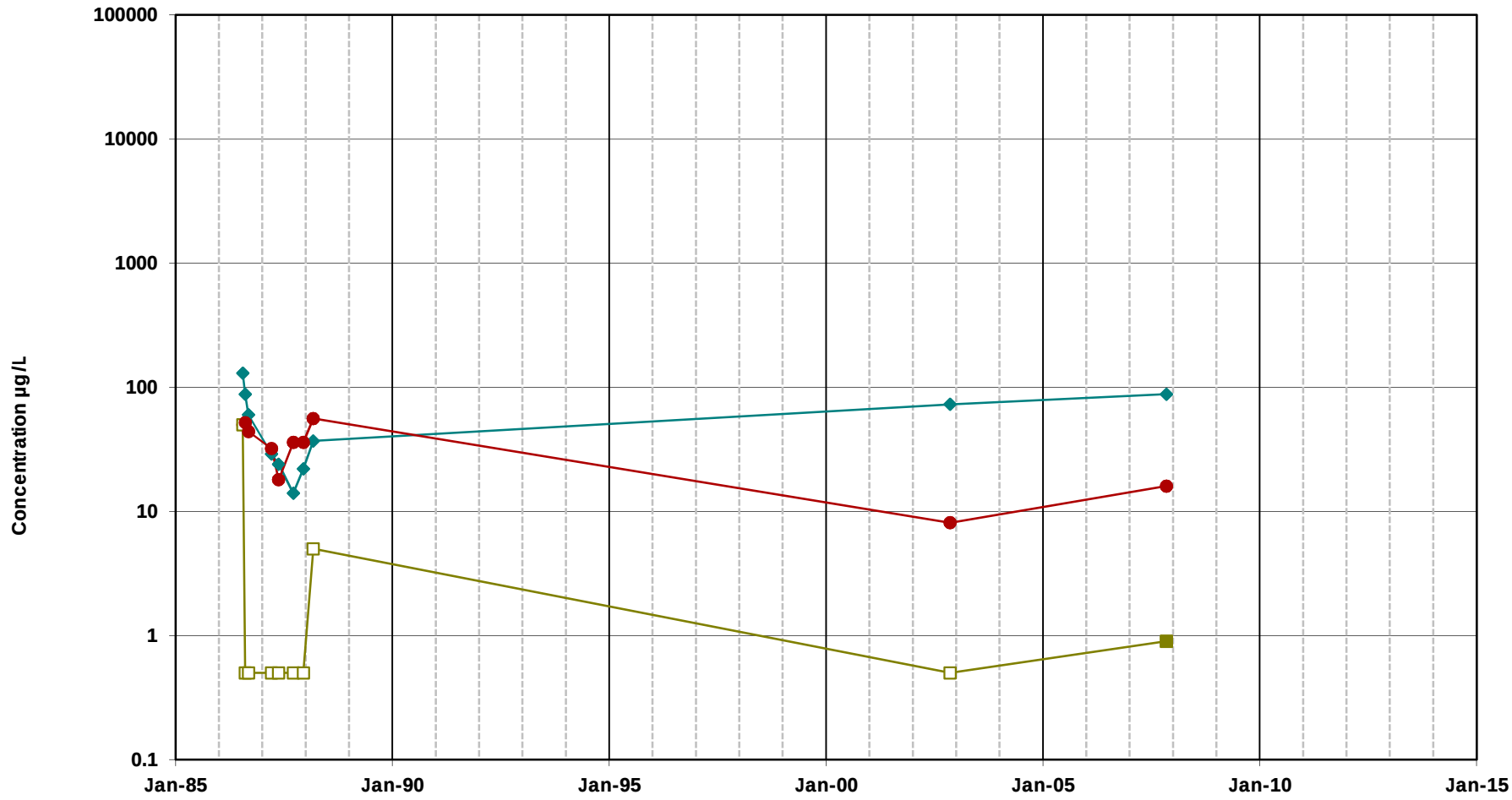
Chlorinated Ethenes in Groundwater
Well 71A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-10

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[71A_VOC.xls]Plot_71A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 101A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-11

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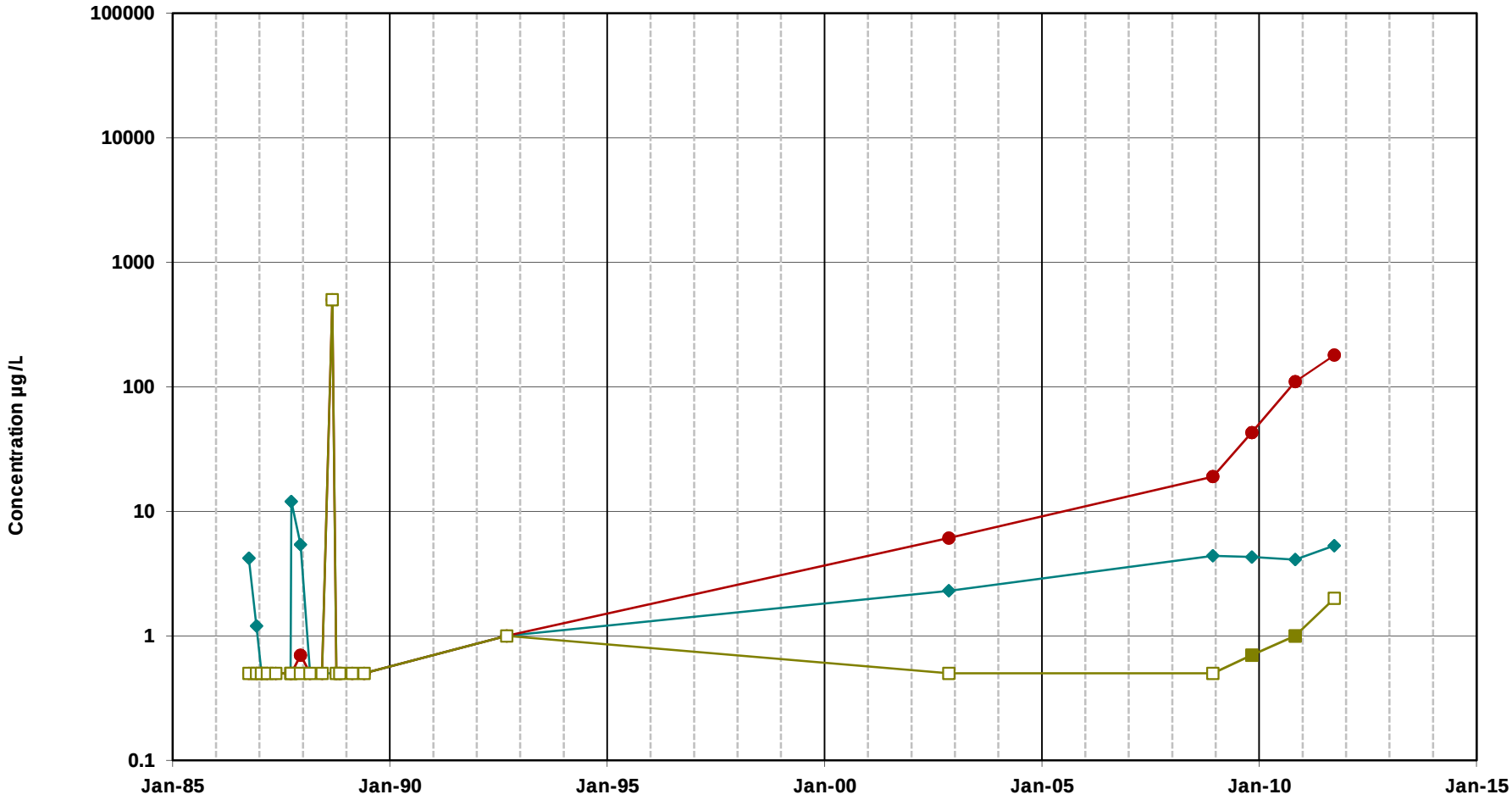


Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

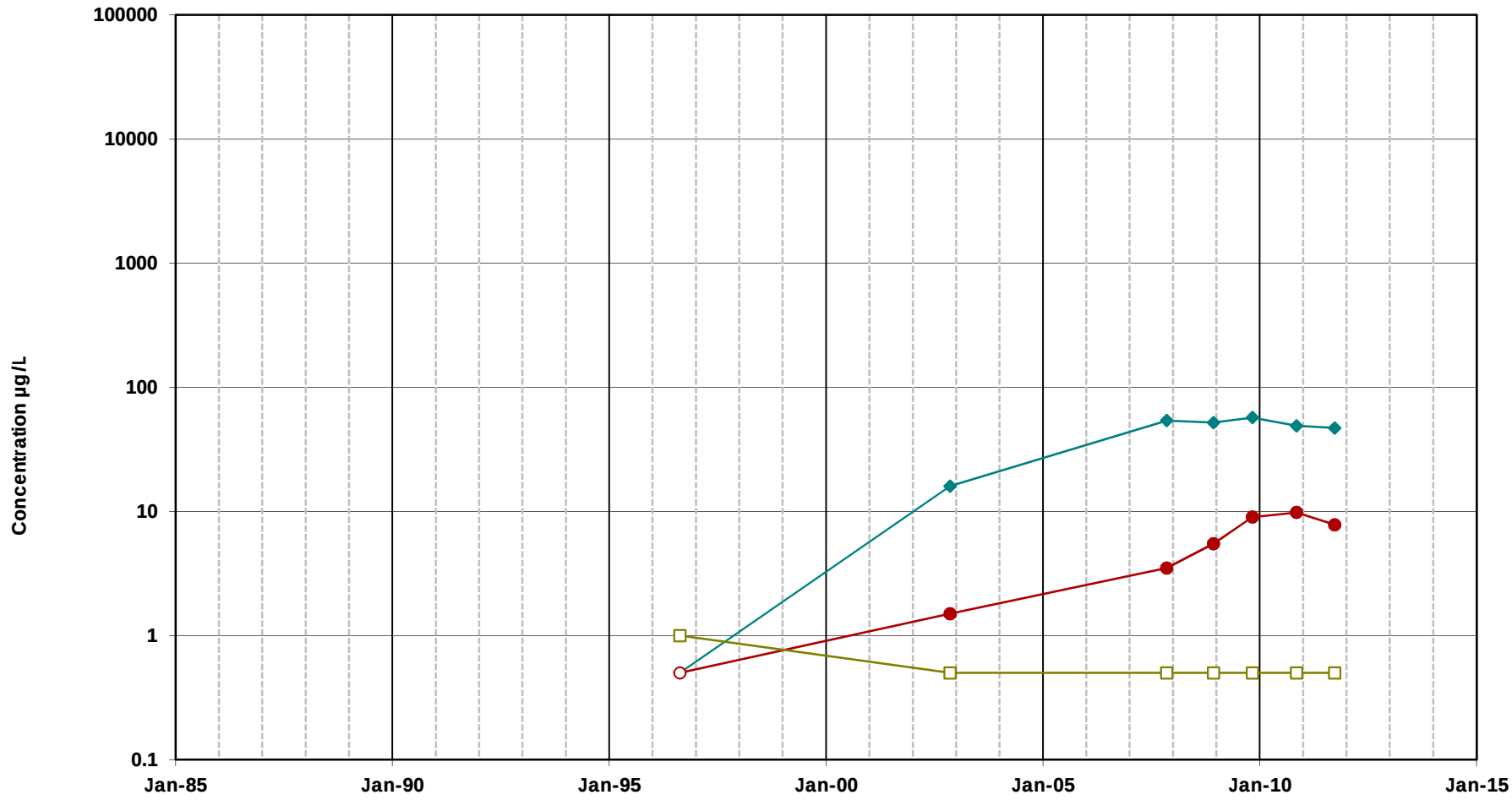
Chlorinated Ethenes in Groundwater
Well 115A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-12

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\115A_VOC.xls]Plot_115A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

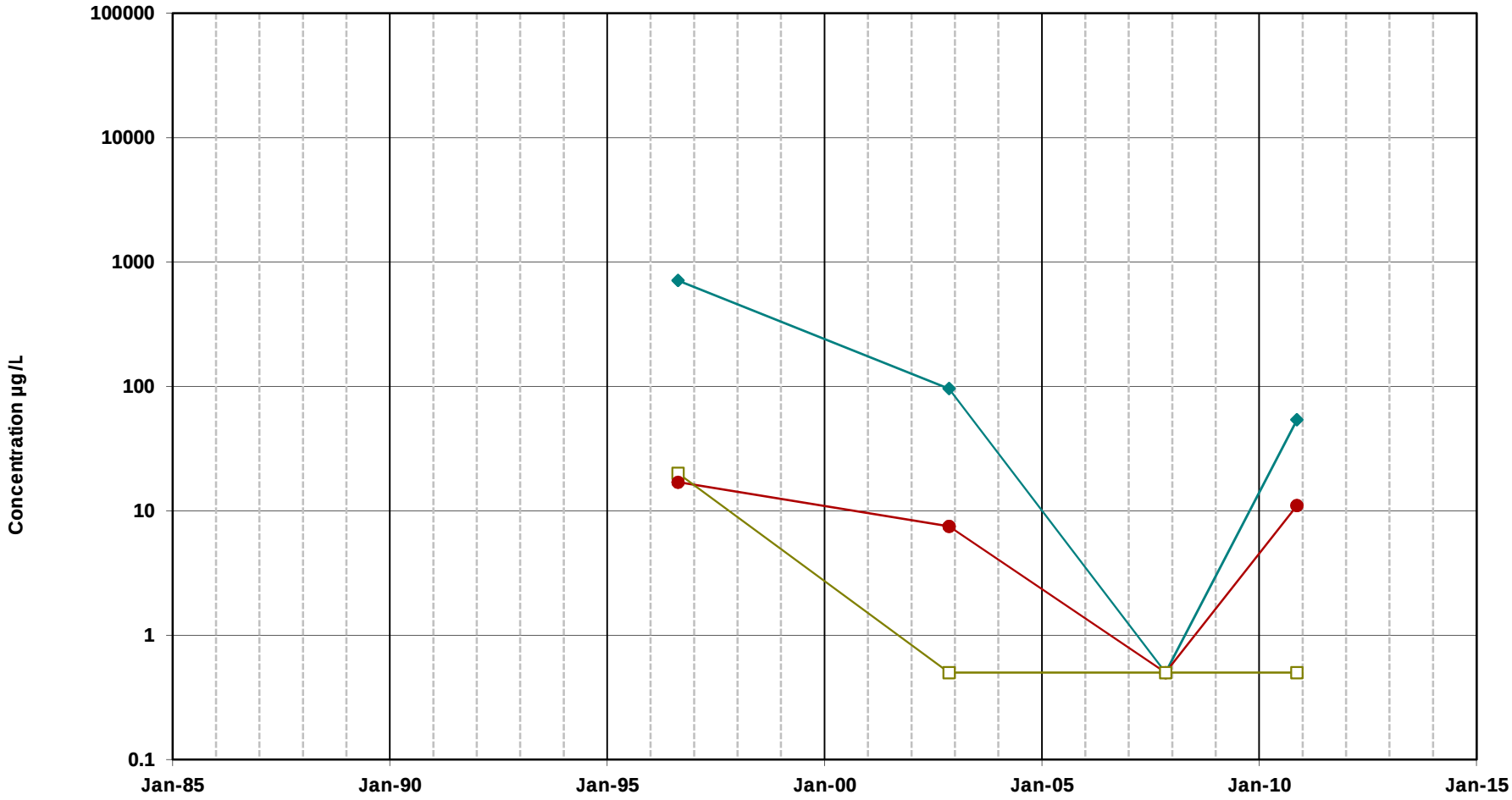
Chlorinated Ethenes in Groundwater
Well 134A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-13

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[134A_VOC.xls]Plot_134A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

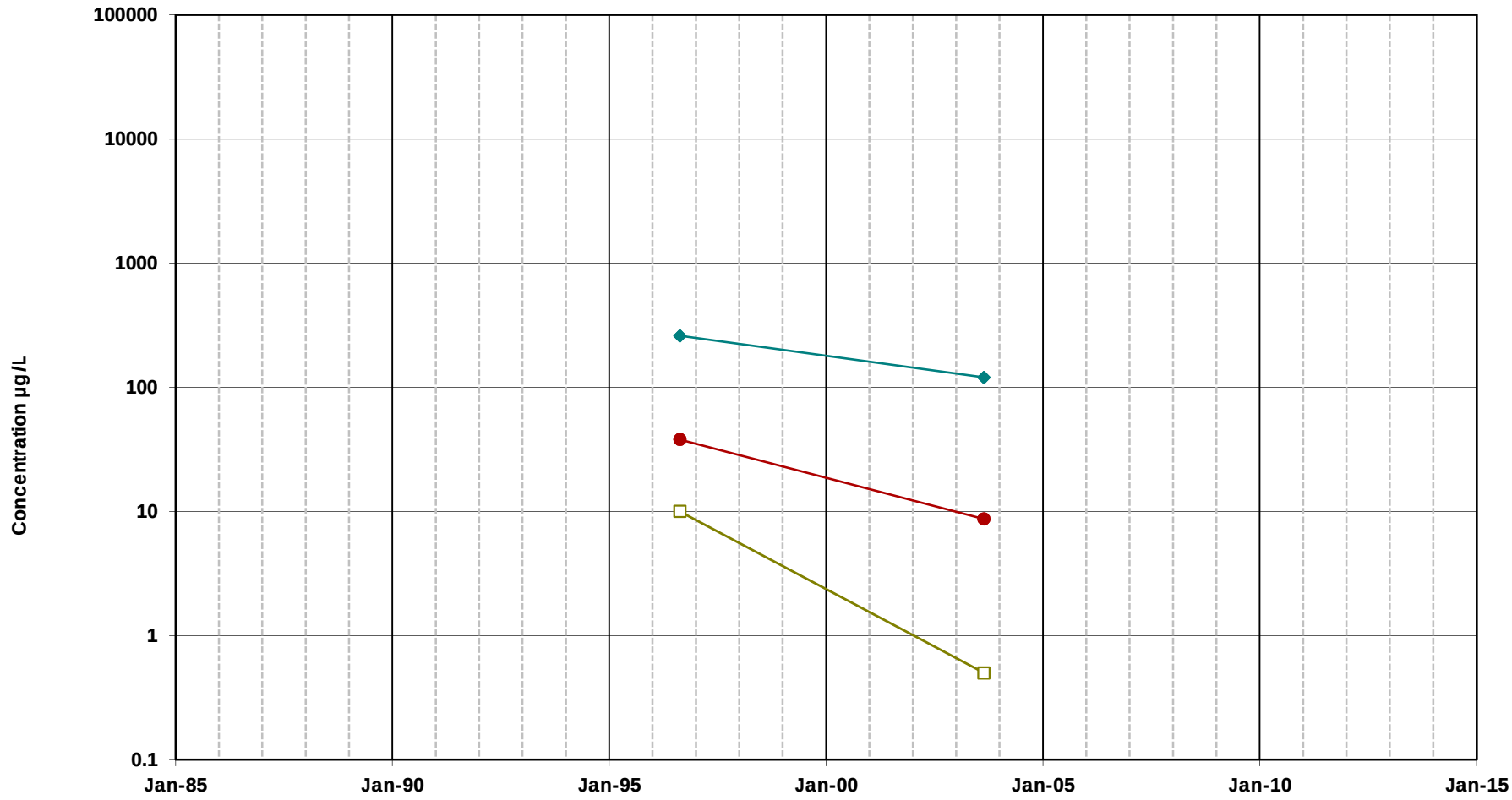
Chlorinated Ethenes in Groundwater
Well 139A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-14

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[139A_VOC.xls]Plot_139A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 140A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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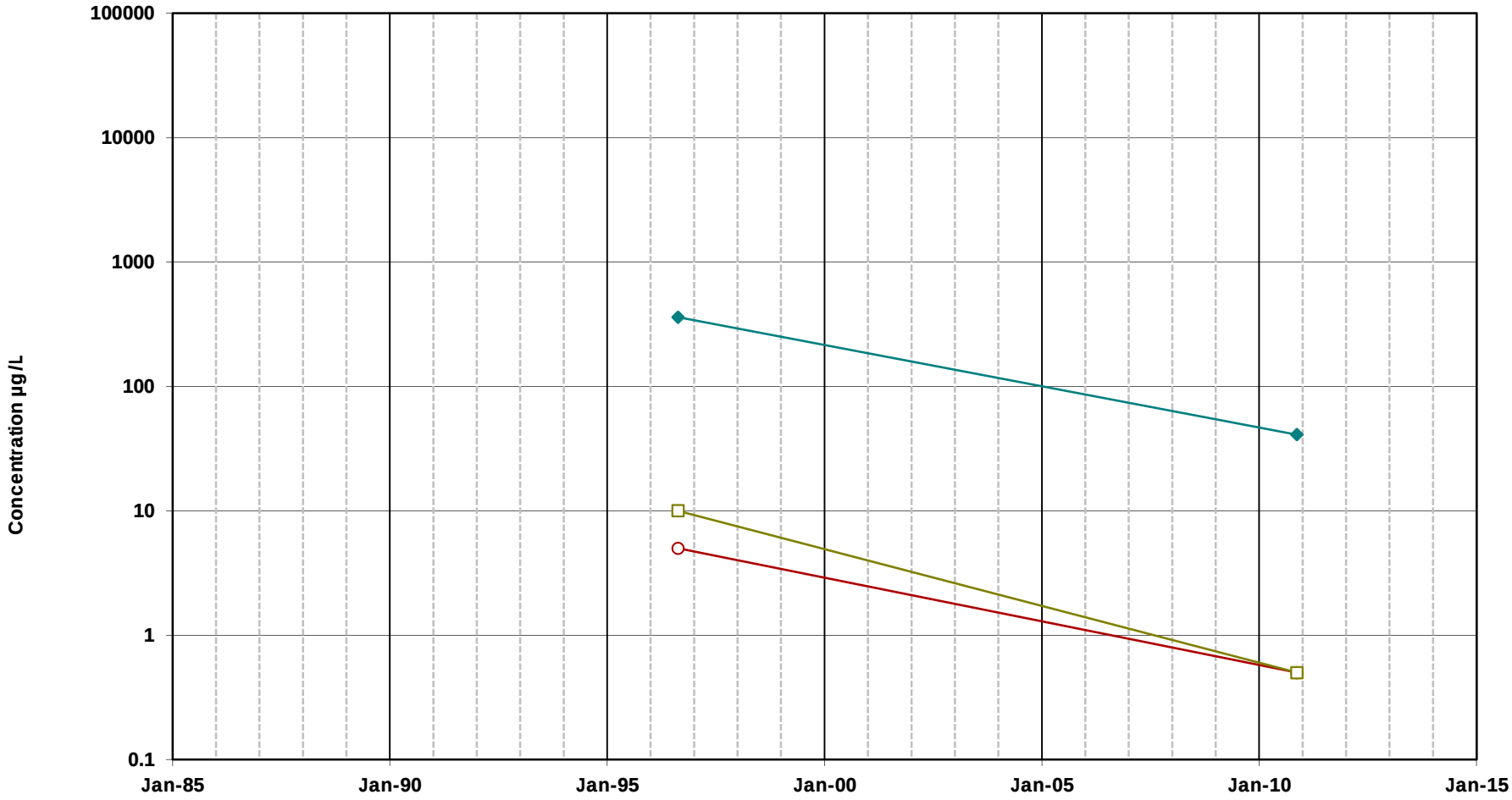
Figure
D-15

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[140A_VOC.xls]Plot_140A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 141A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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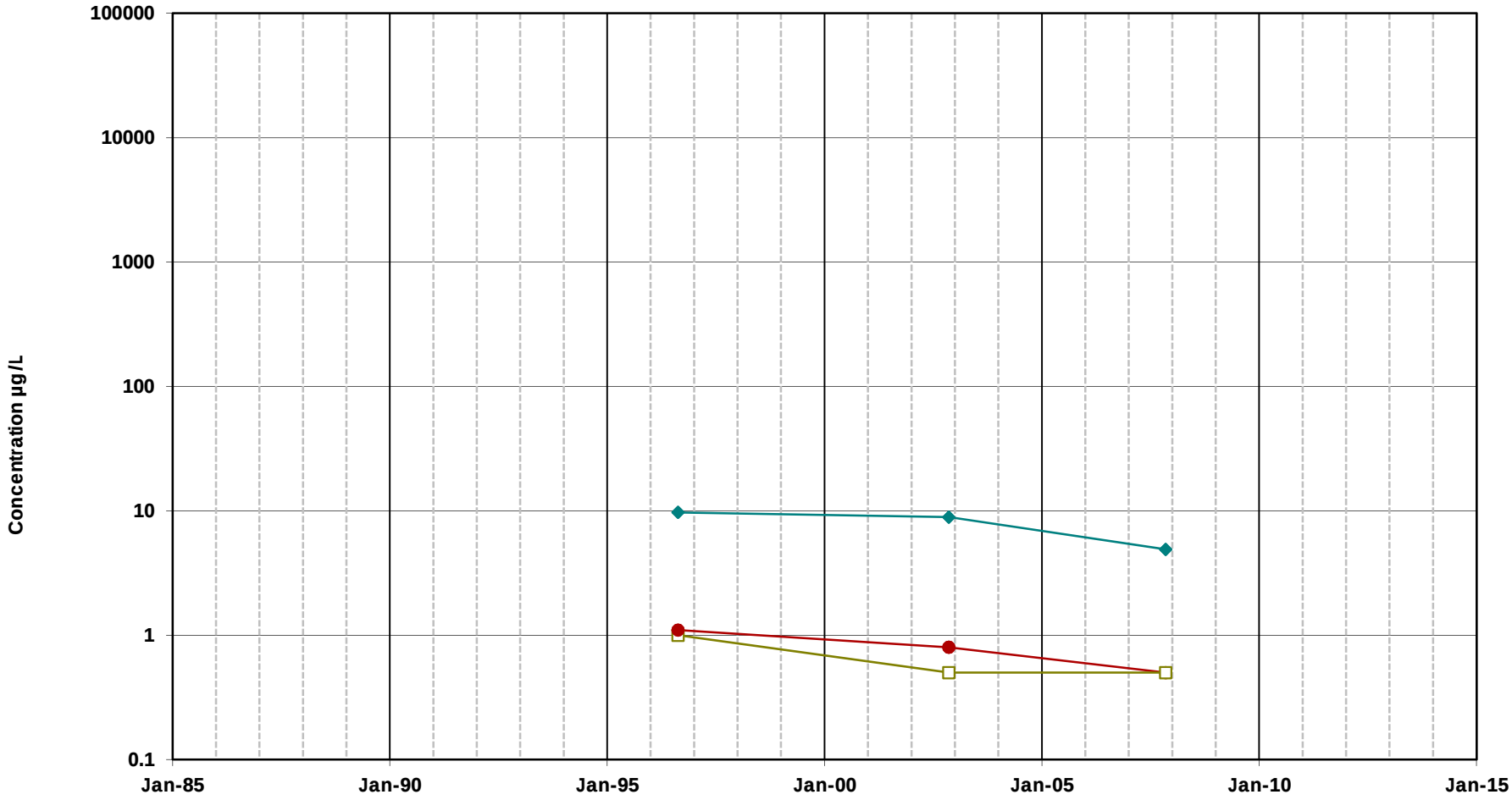
Figure
D-16

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[141A_VOC.xls]Plot_141A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 143A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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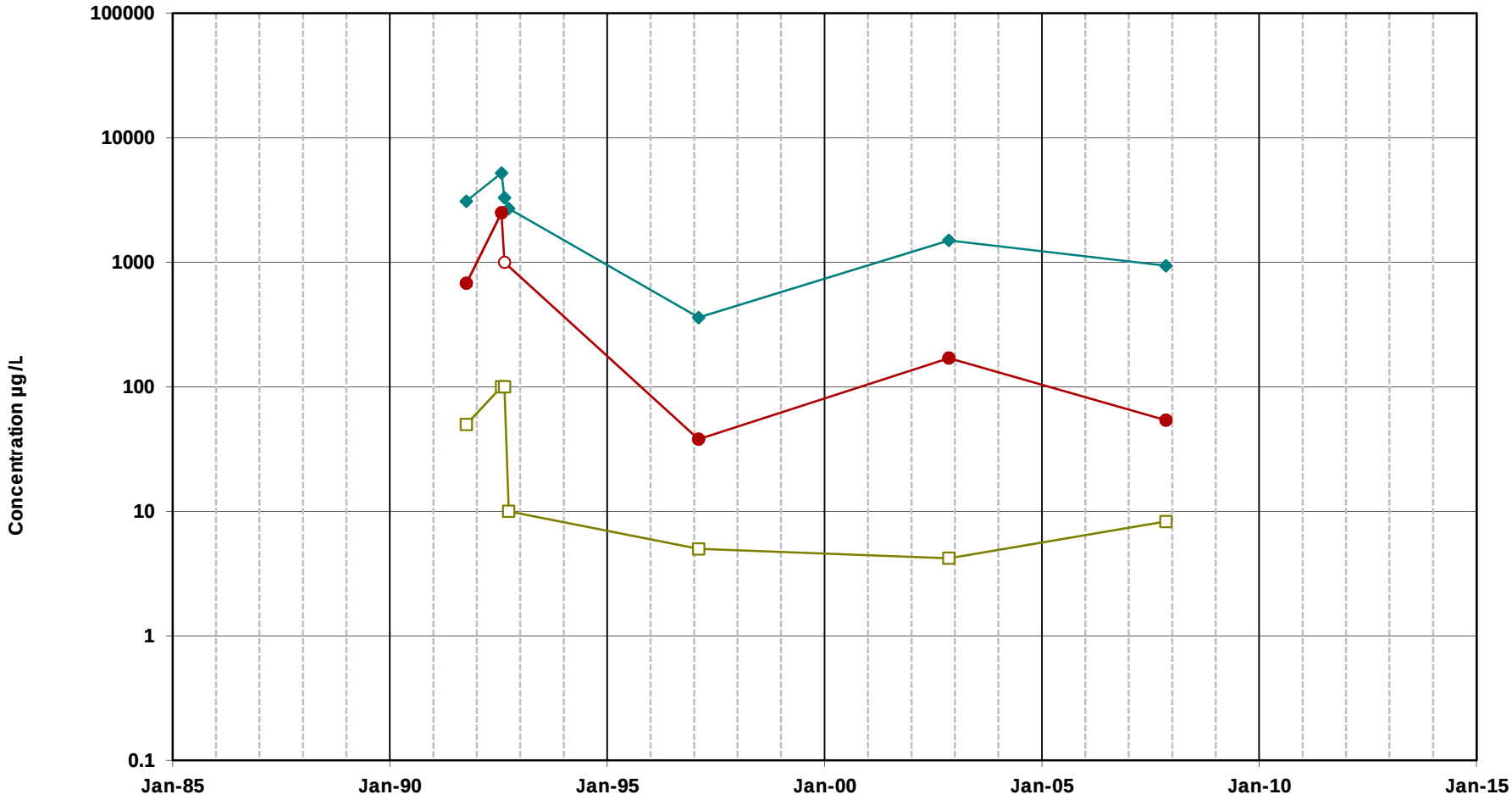
Figure
D-17

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[143A_VOC.xls]Plot_143A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 148A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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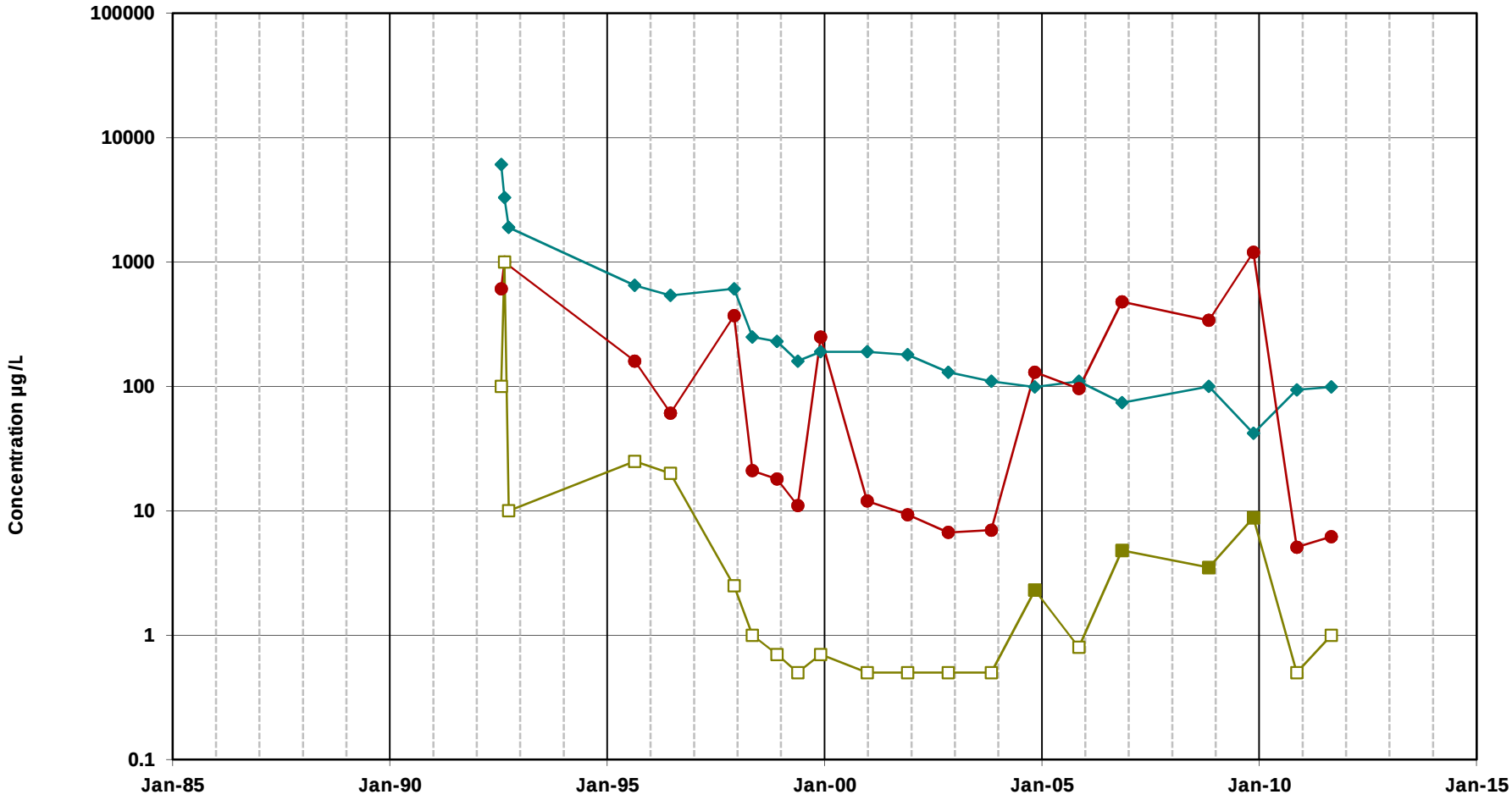
Figure
D-18

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[148A_VOC.xls]Plot_148A_VOC



Trichloroethene

cis-1,2-Dichloroethene

Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 149A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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Figure

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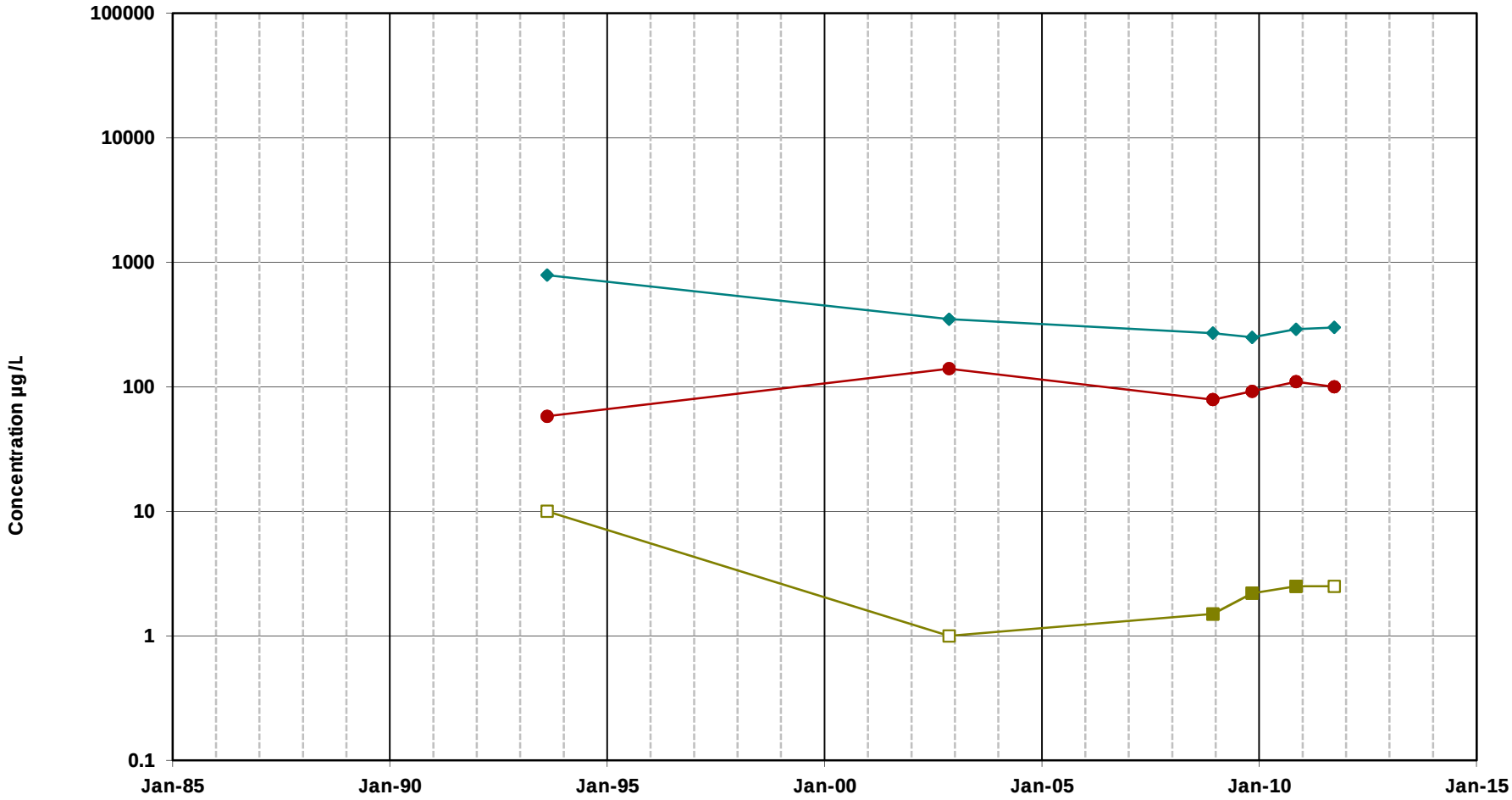
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[149A_VOC.xls]Plot_149A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 154A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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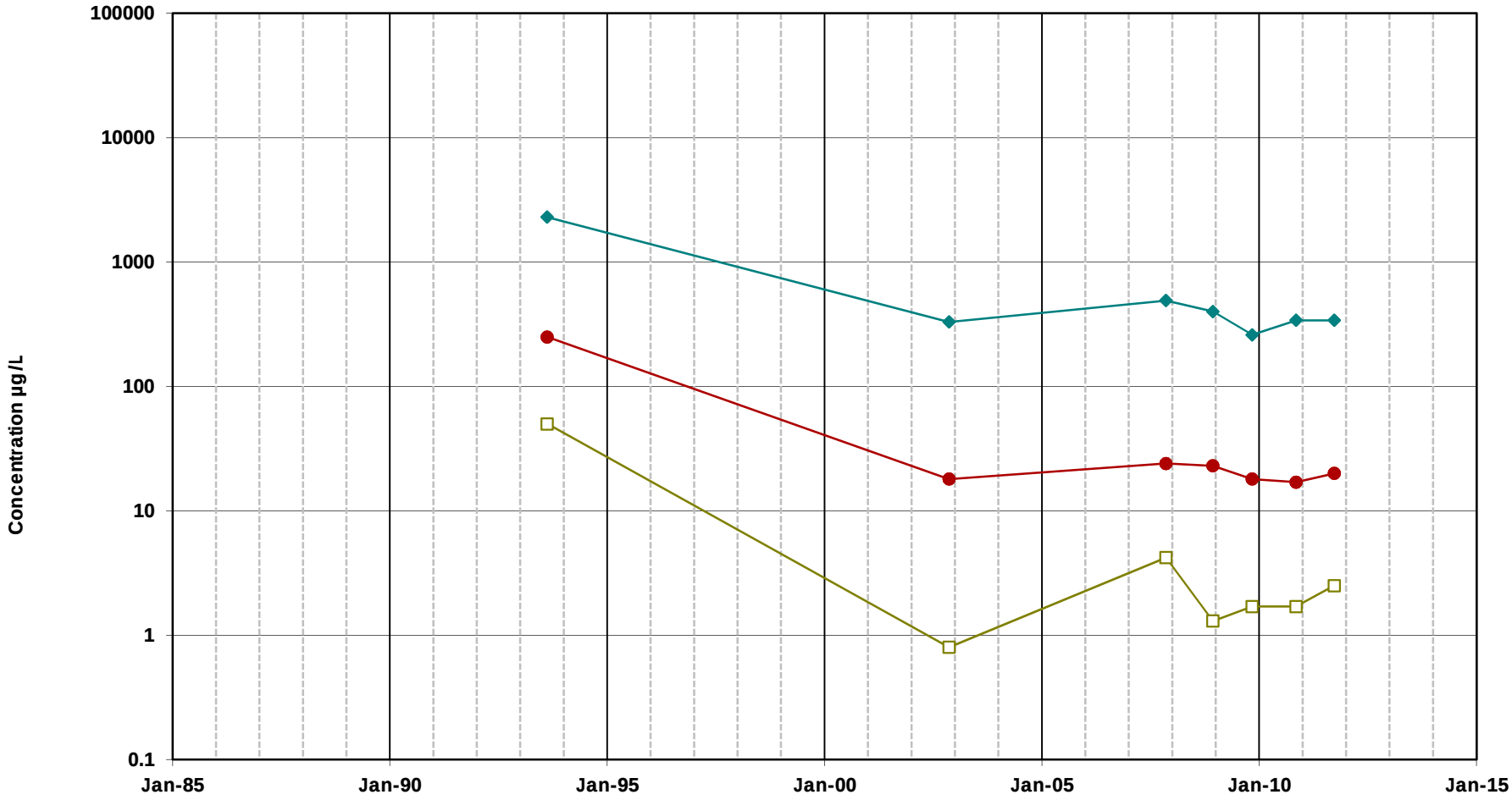
Figure
D-20

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[154A_VOC.xls]Plot_154A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 155A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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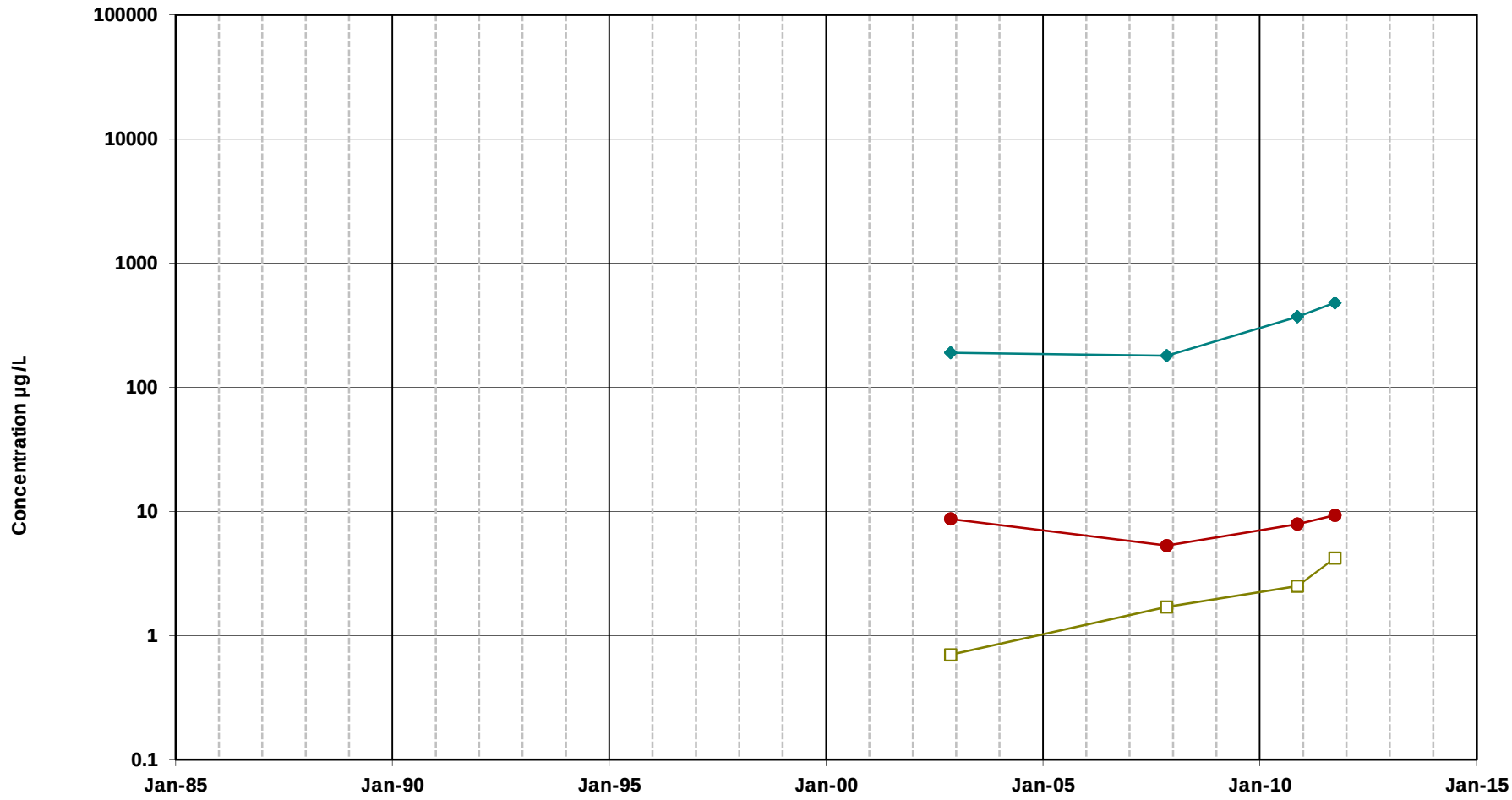
Figure
D-21

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[155A_VOC.xls]Plot_155A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 159A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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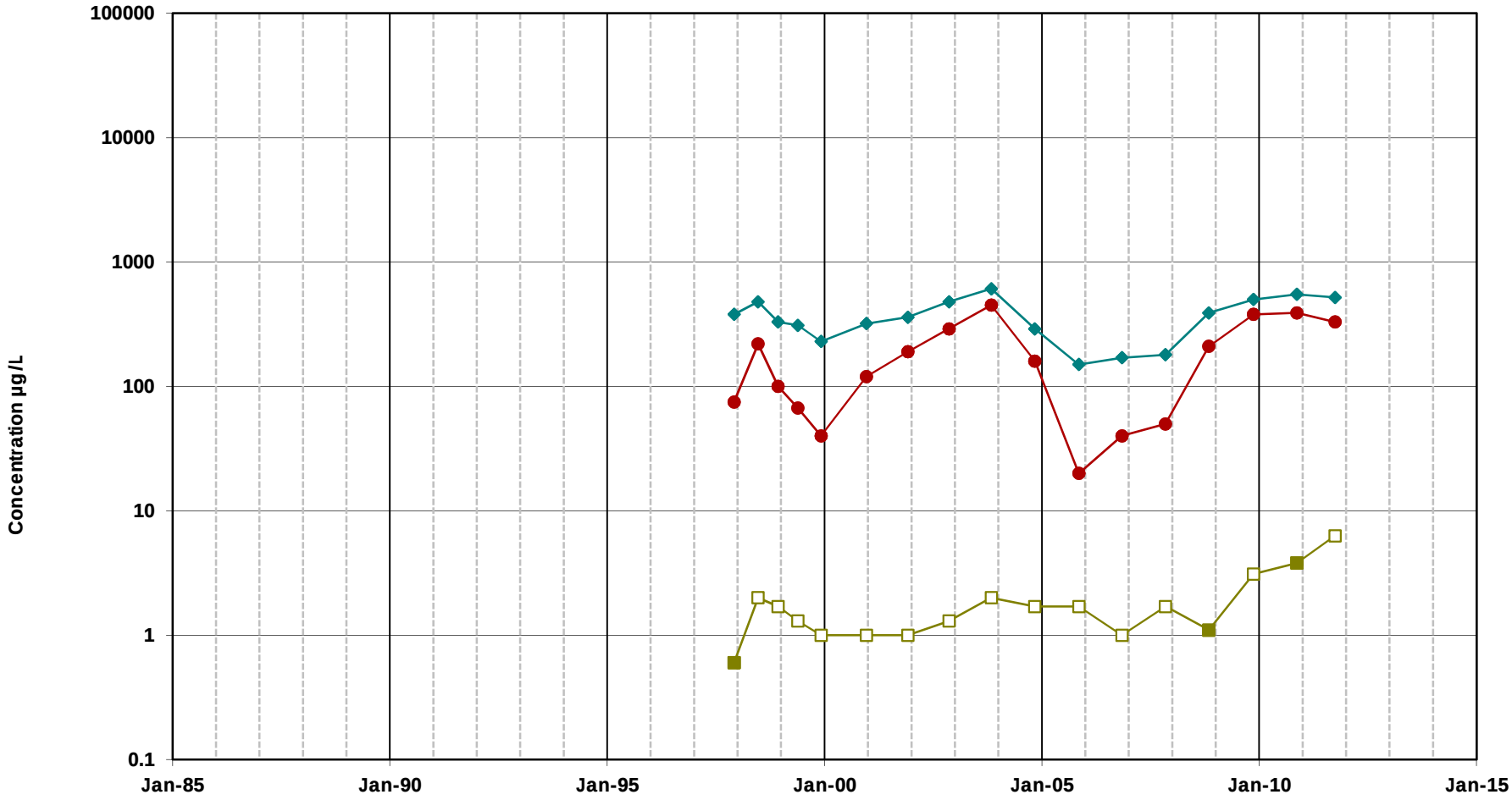
Figure
D-22

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[159A_VOC.xls]Plot_159A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 160A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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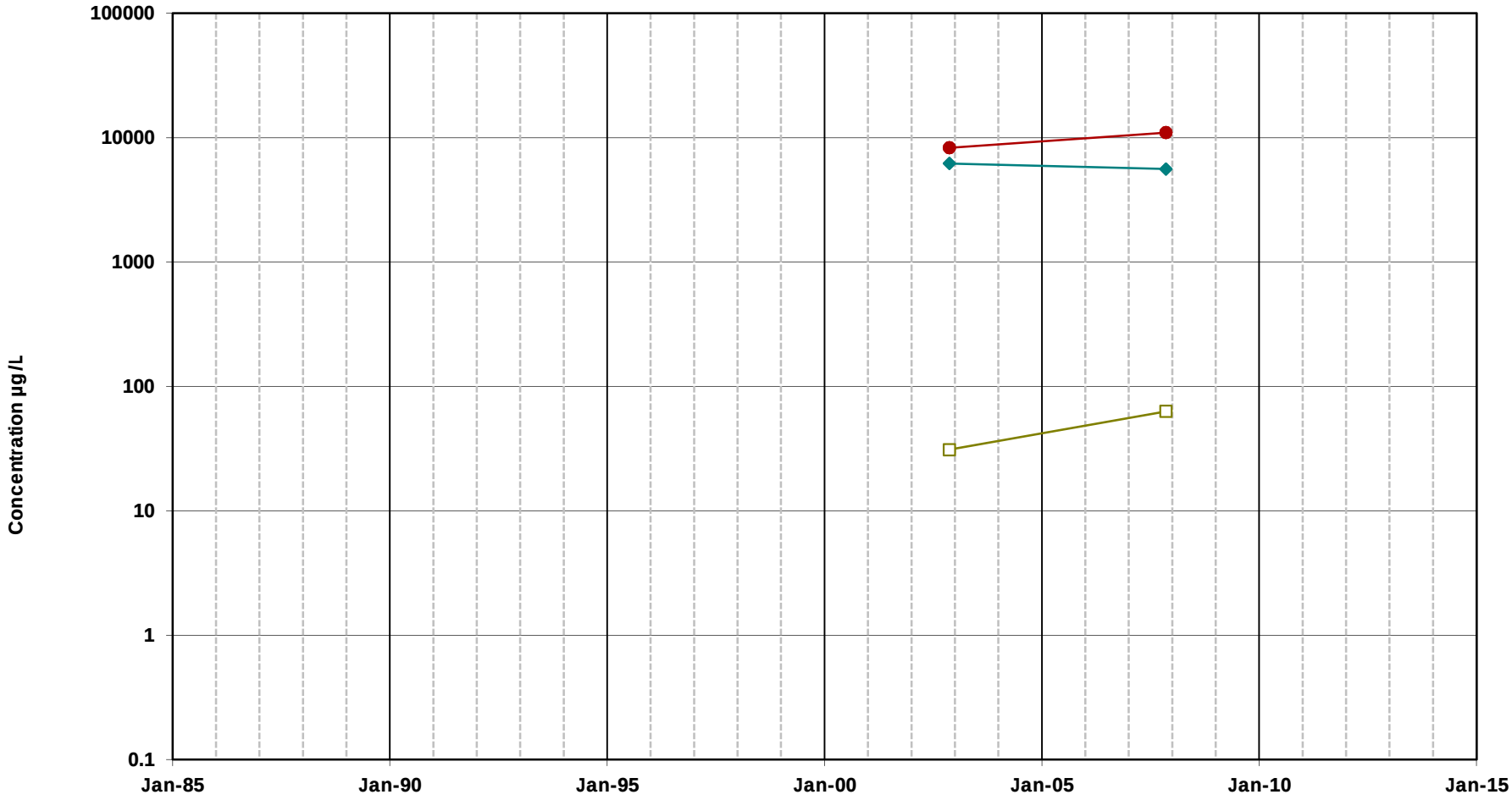
Figure
D-23

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[160A_VOC.xls]Plot_160A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 161A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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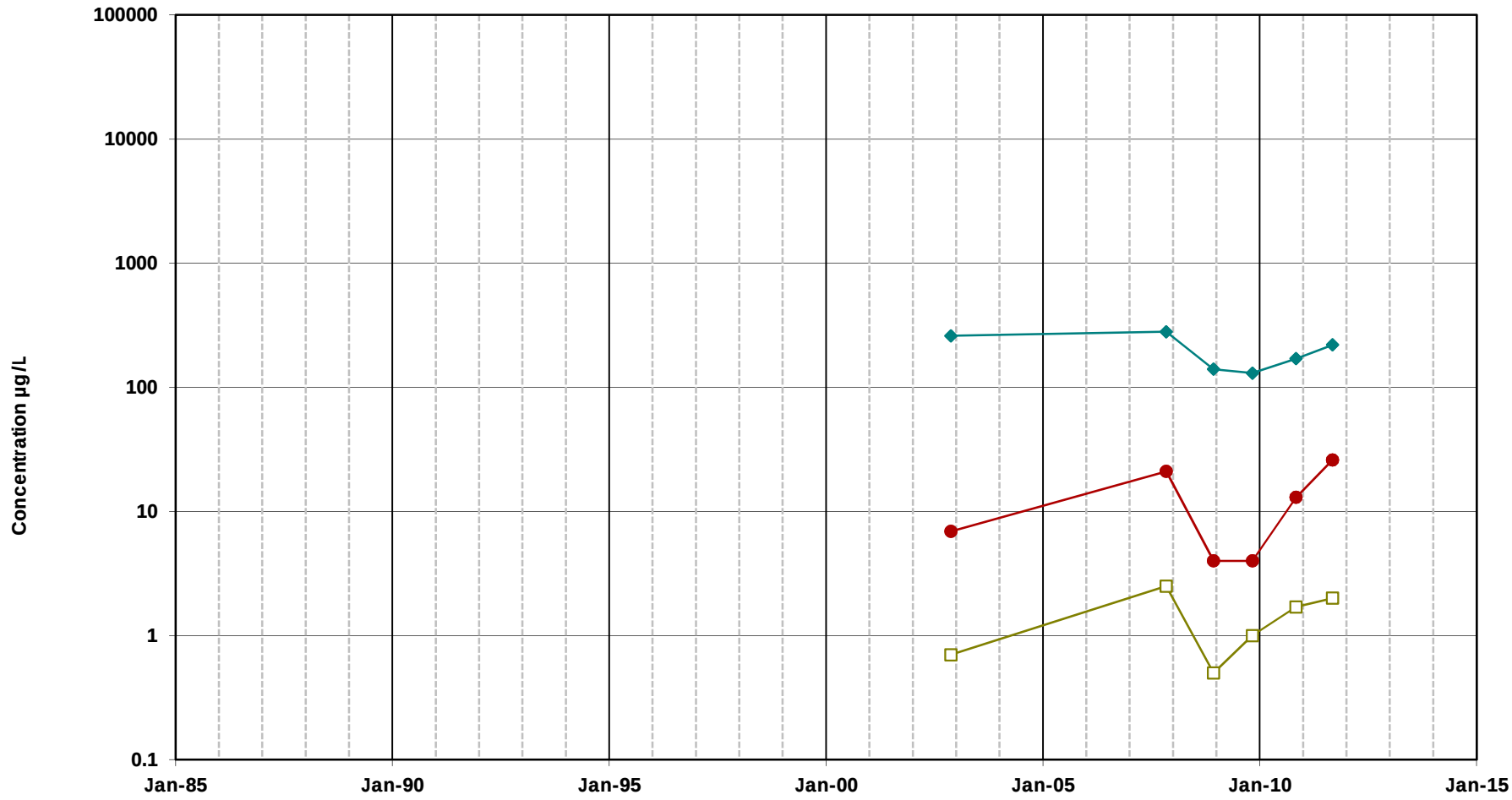
Figure
D-24

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[161A_VOC.xls]Plot_161A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 174A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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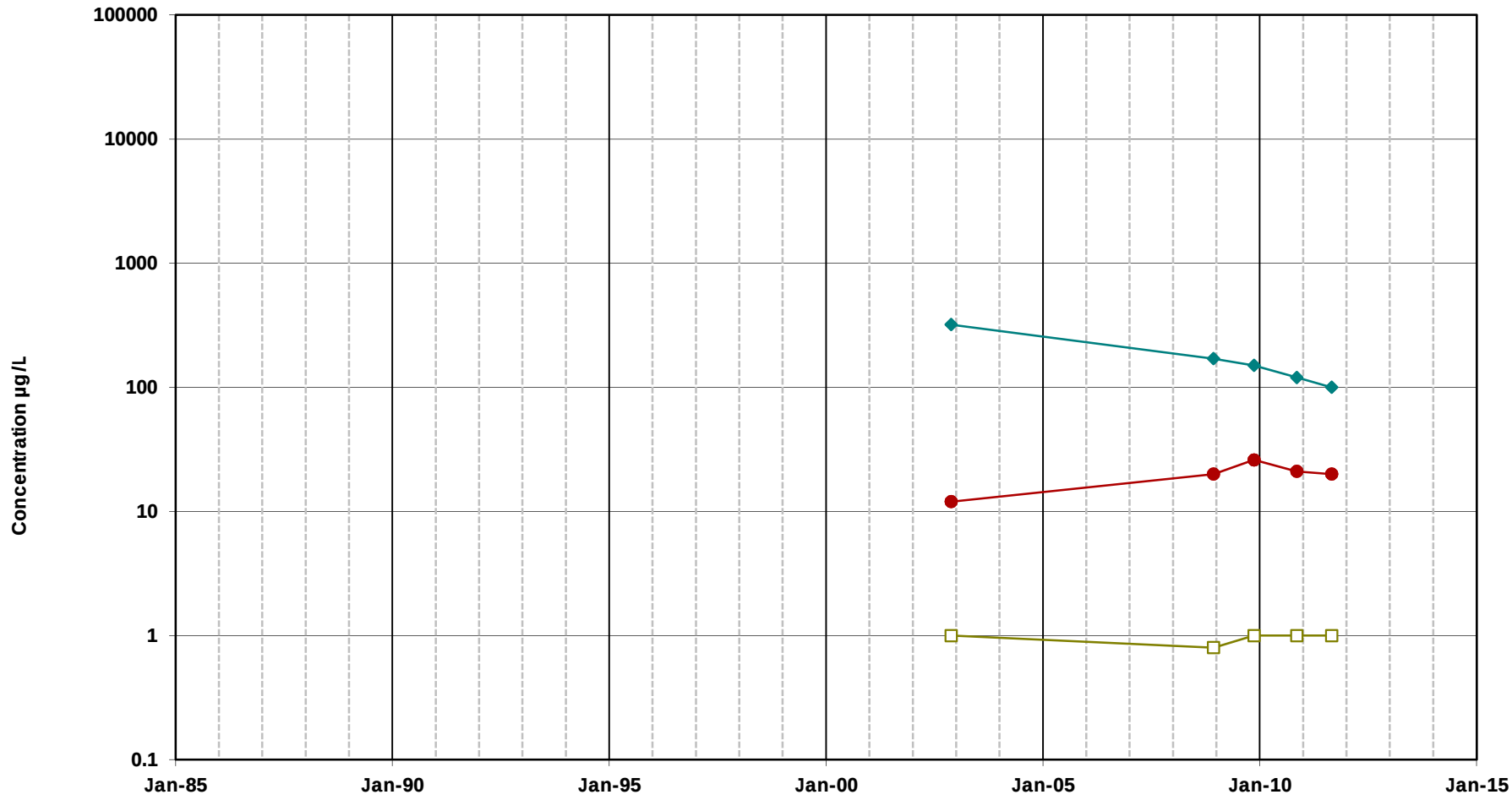
Figure
D-25

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[174A_VOC.xls]Plot_174A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 175A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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Figure
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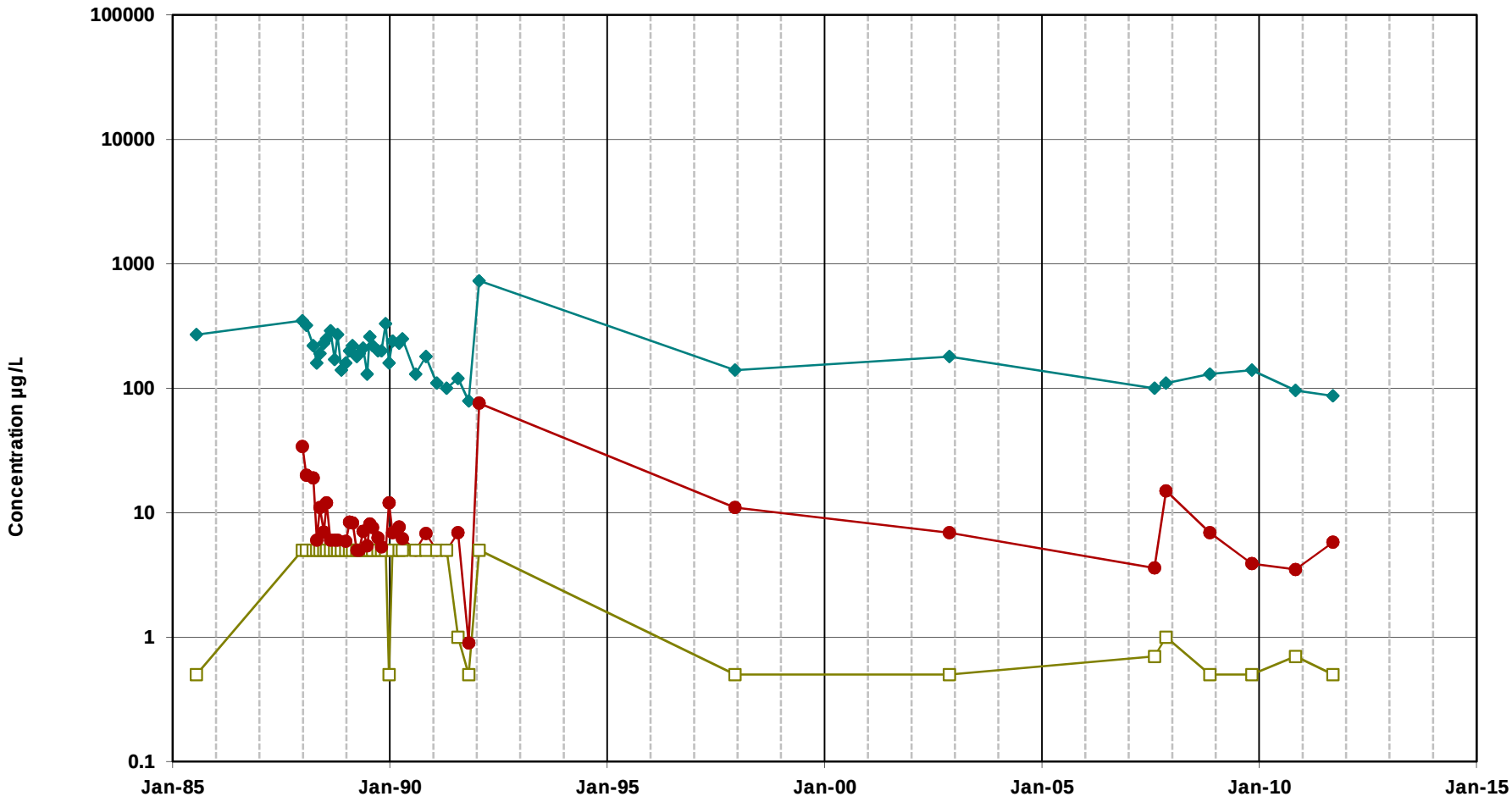
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[175A_VOC.xls]Plot_175A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-1A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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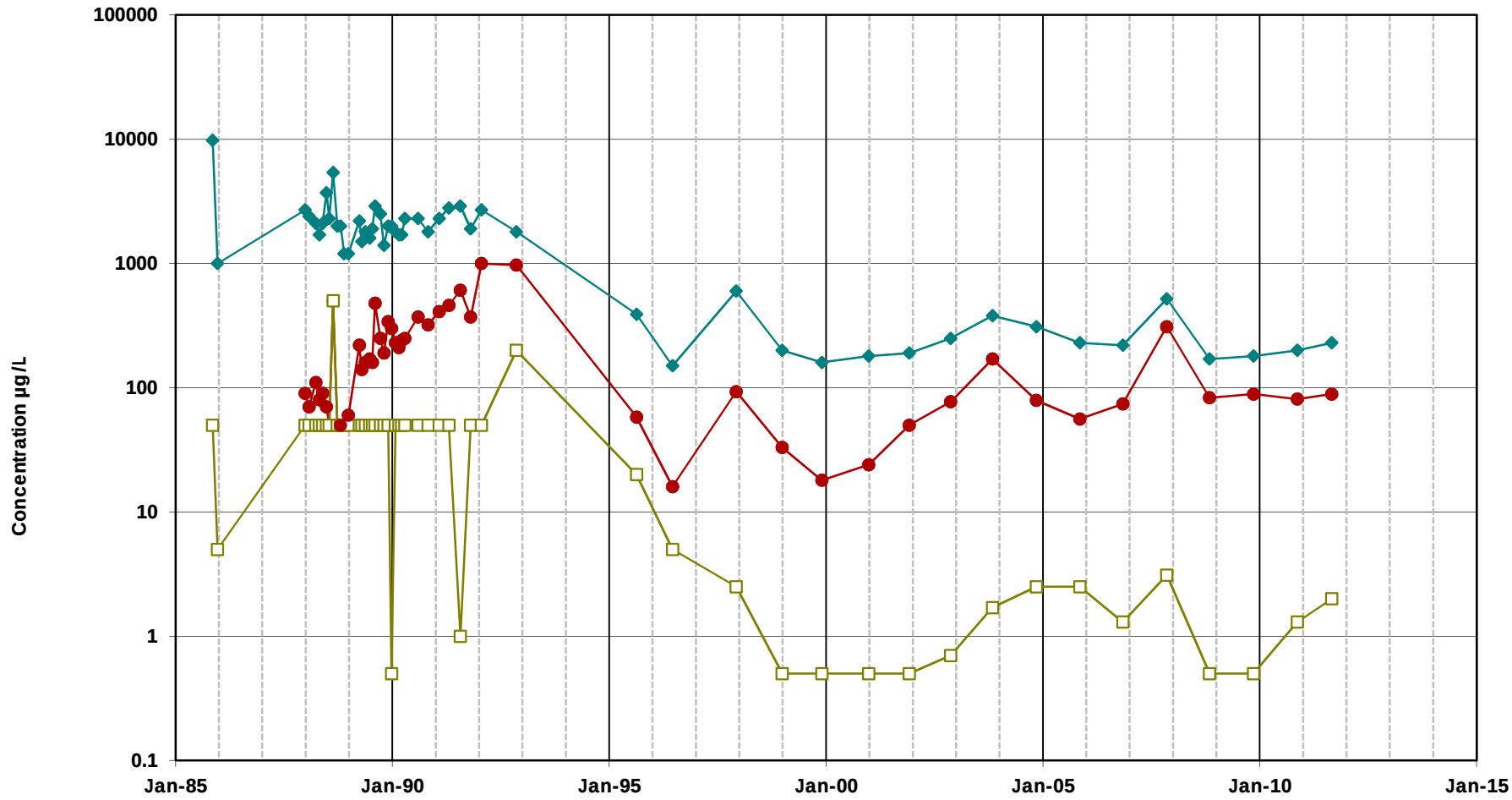
Figure
D-27

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-1A_VOC.xls]Plot_RW-1A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-2A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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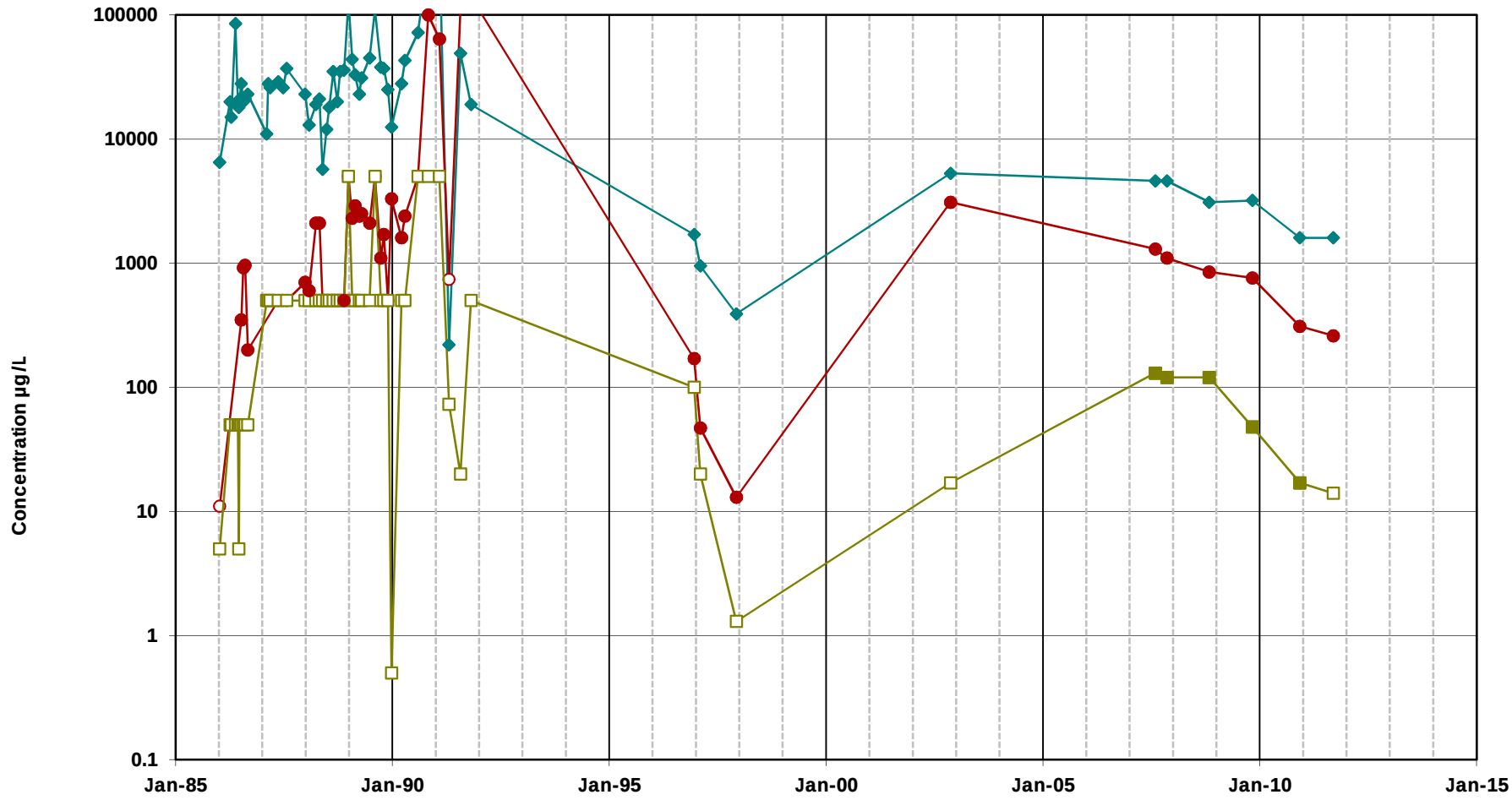
Figure
D-28

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-2A_VOC.xls]Plot_RW-2A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-11A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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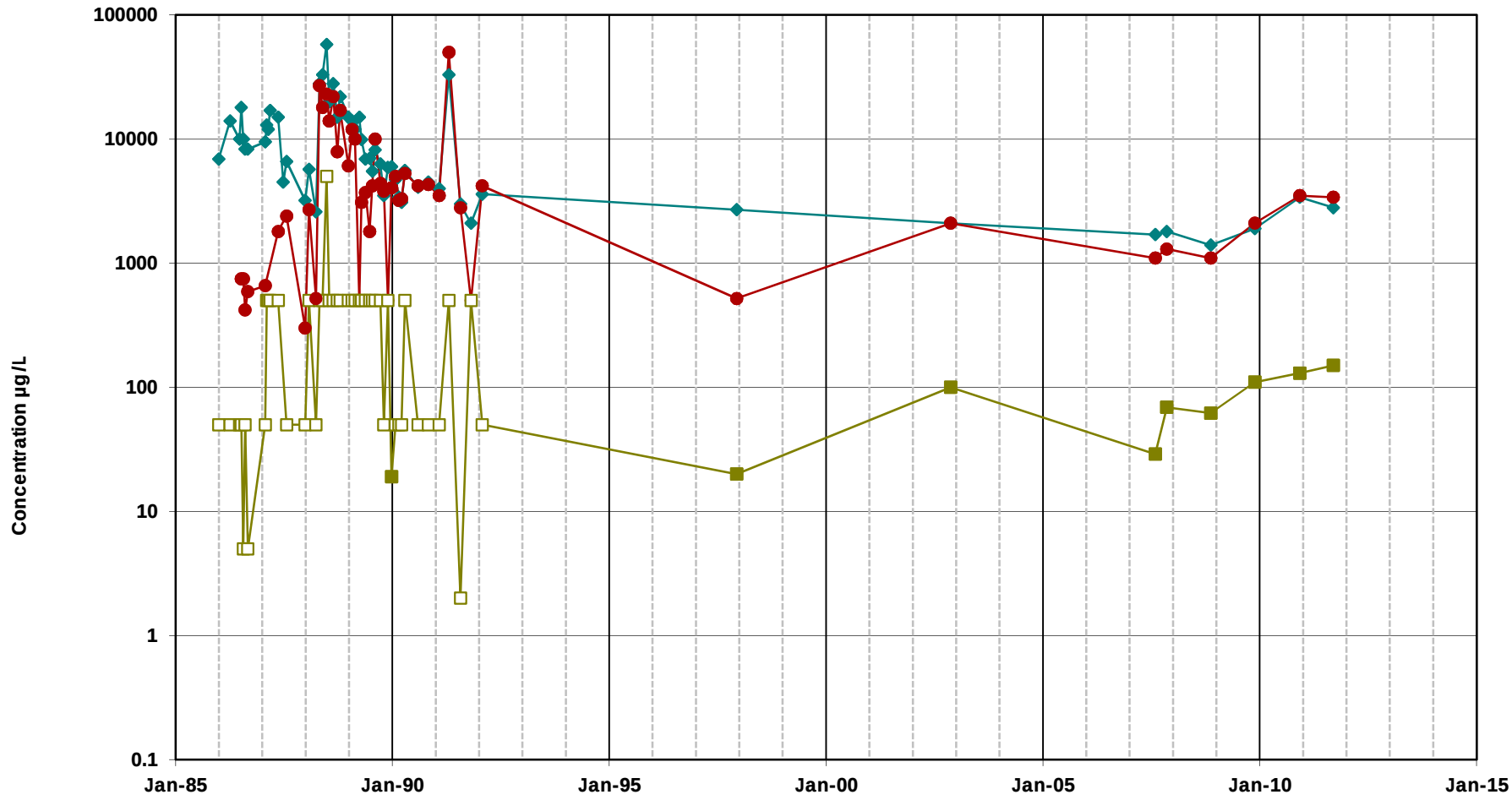
Figure
D-29

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-11A_VOC.xls]Plot_RW-11A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-12A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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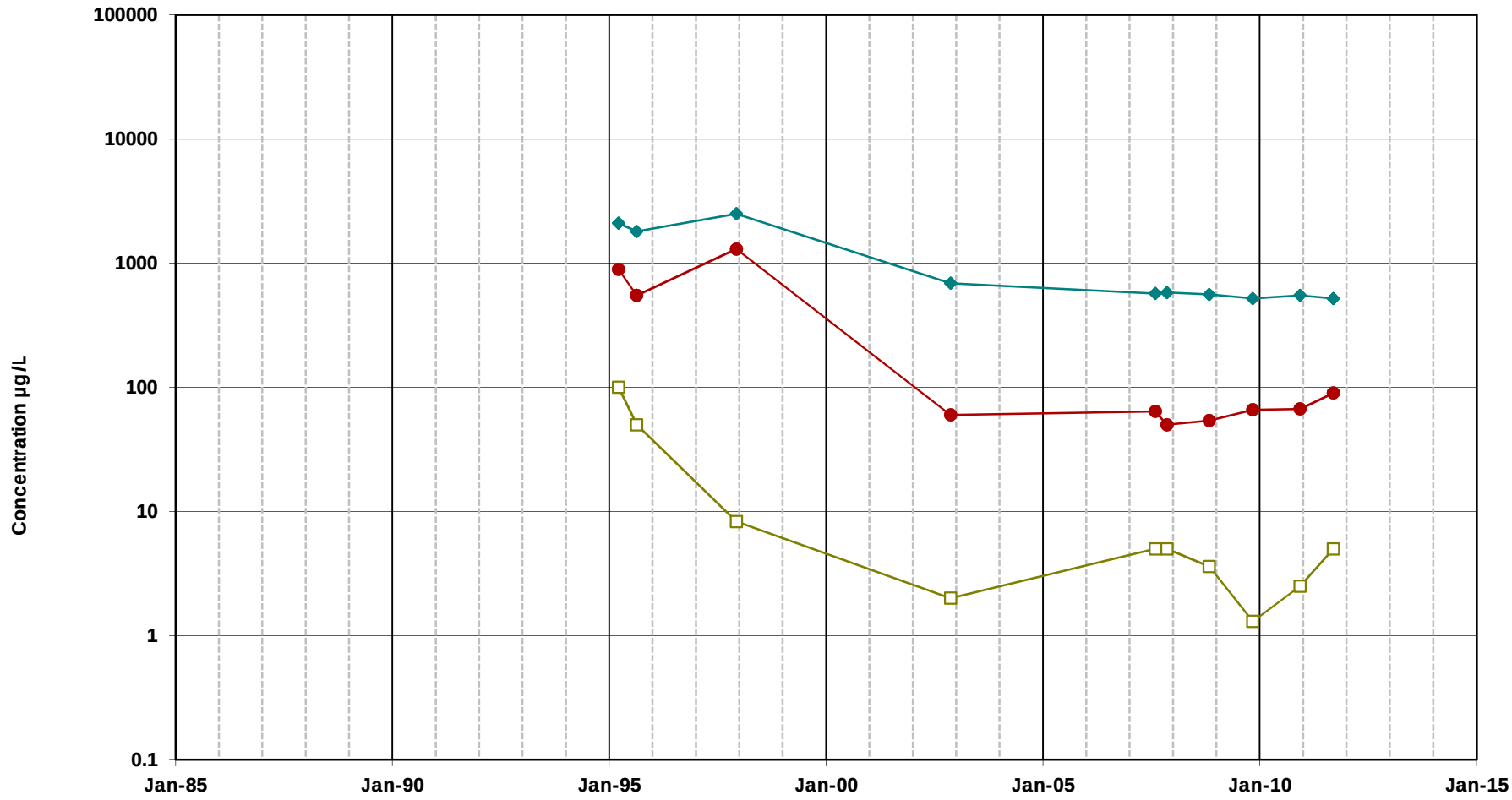
Figure
D-30

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-12A_VOC.xls]Plot_RW-12A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-23A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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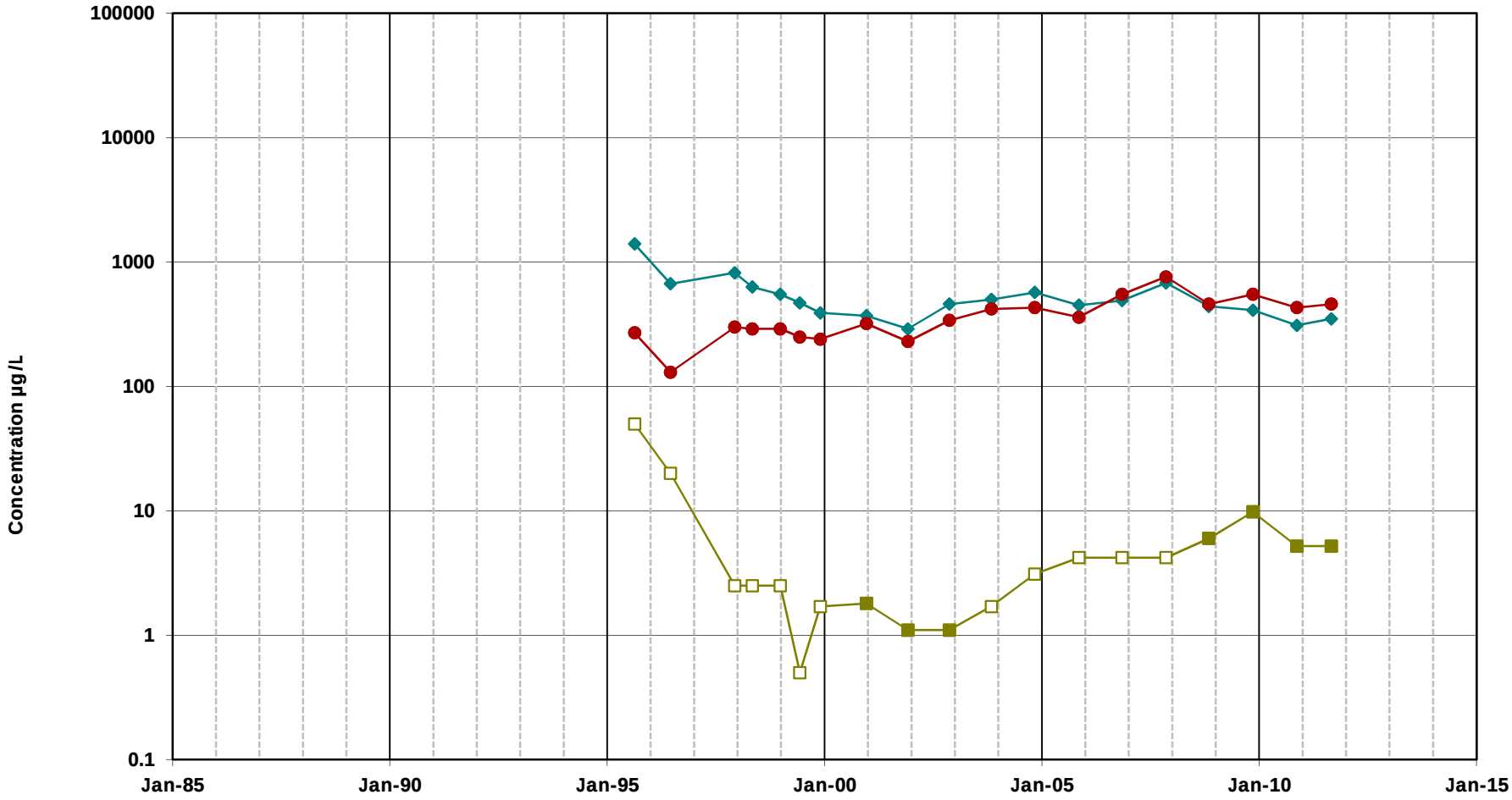
Figure
D-31

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-23A_VOC.xls]Plot_RW-23A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-24A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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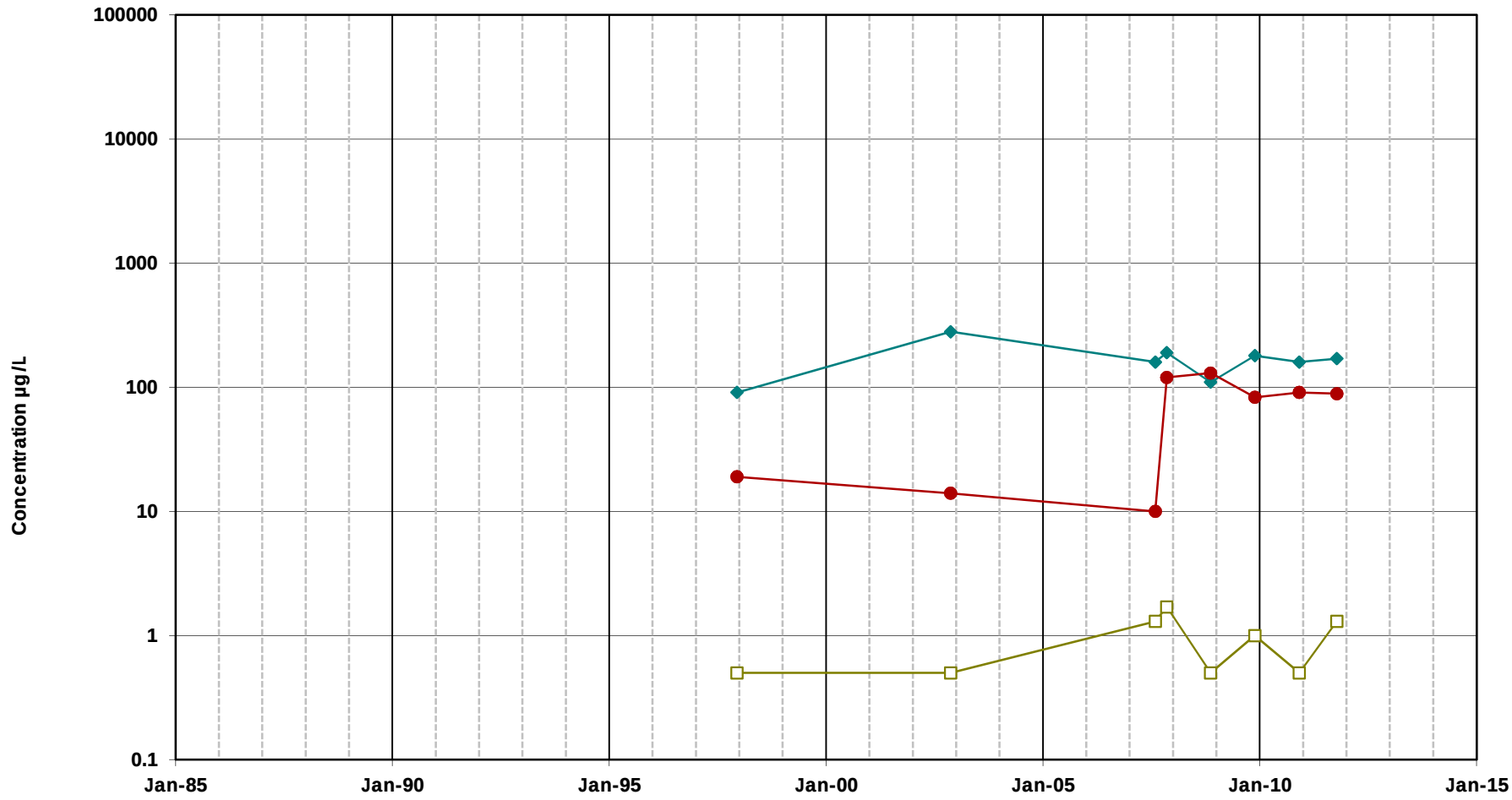
Figure
D-32

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-24A_VOC.xls]Plot_RW-24A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-26A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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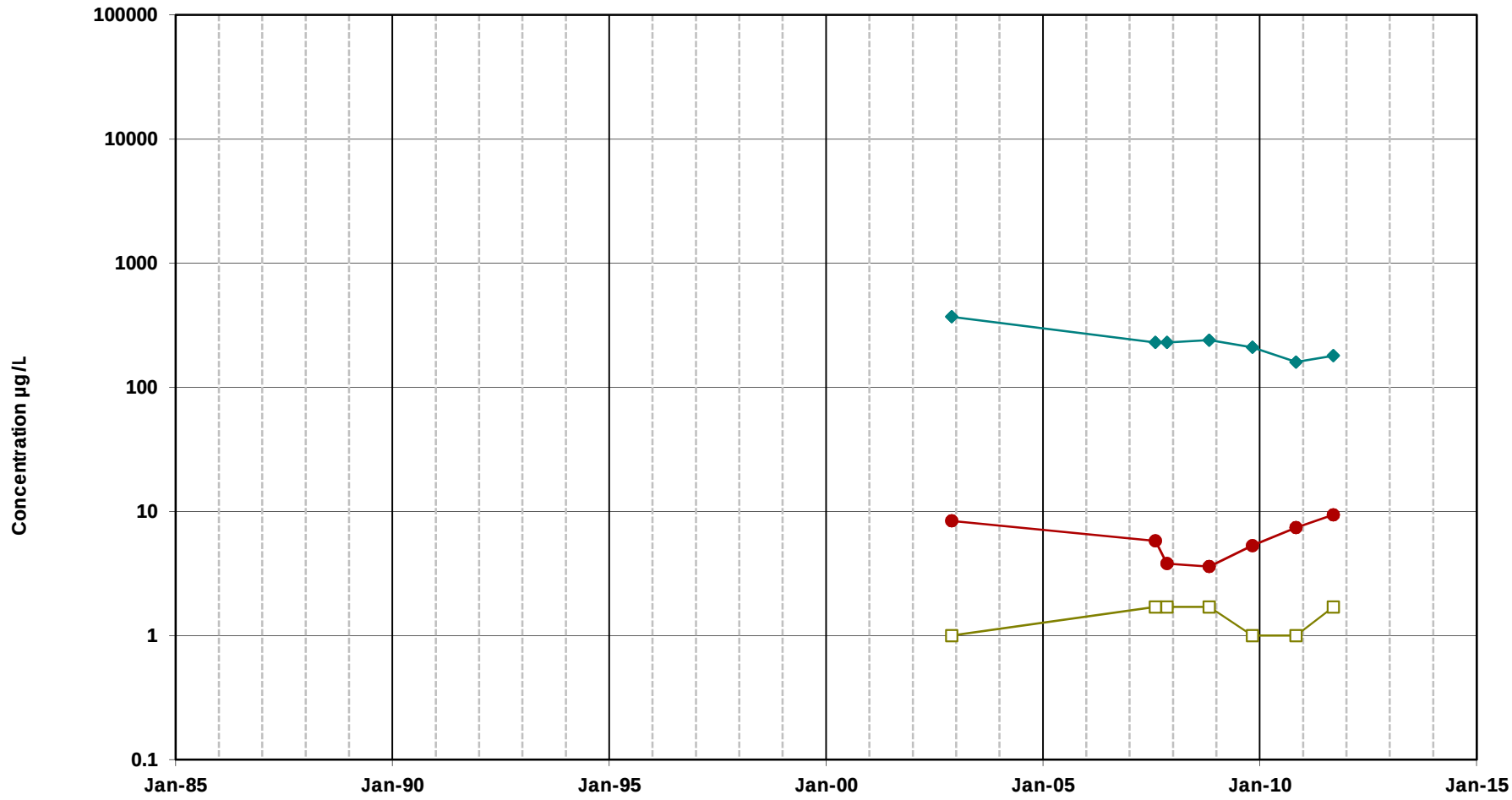
Figure
D-33

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-26A_VOC.xls]Plot_RW-26A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-29A
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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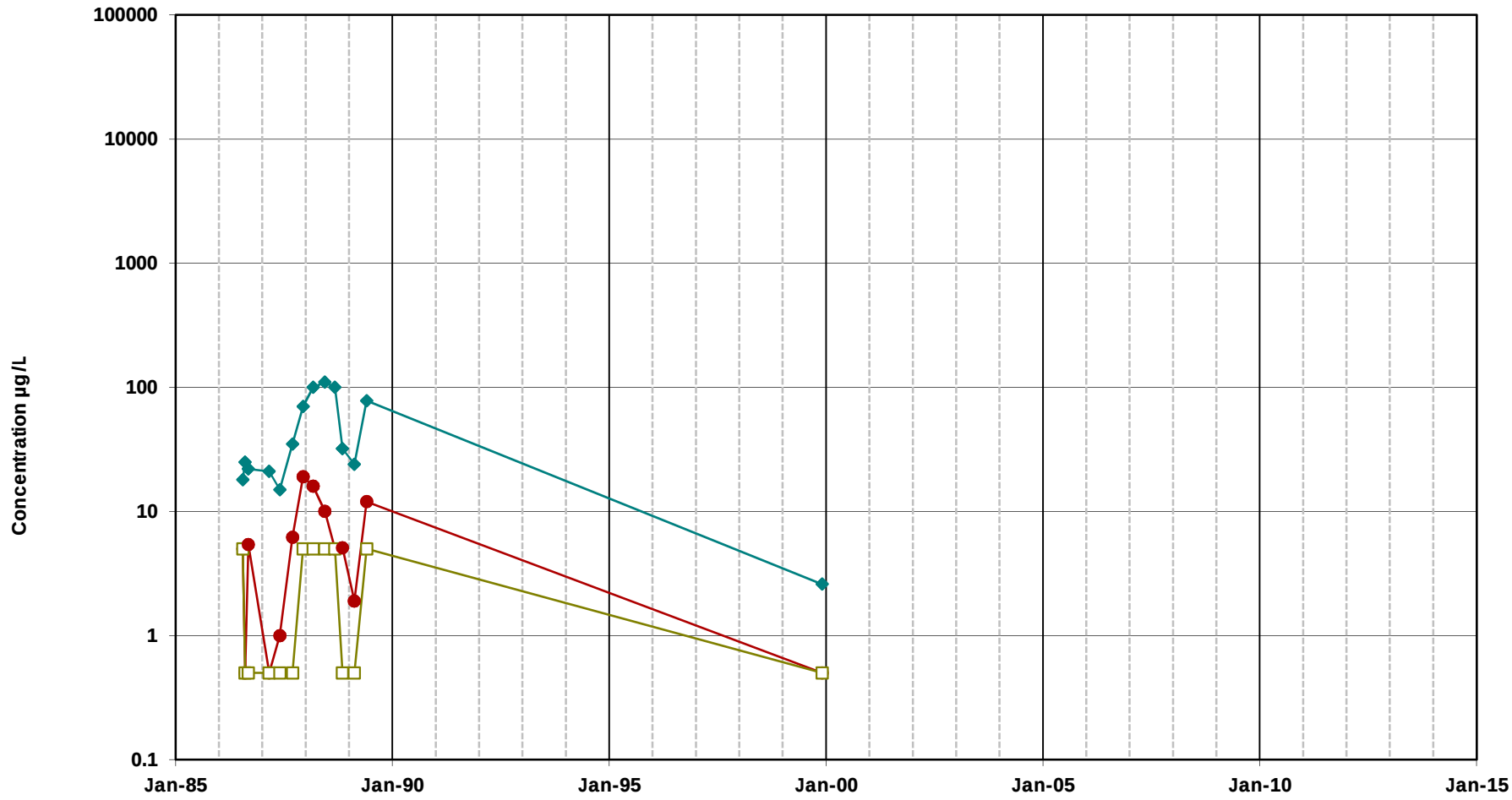
Figure
D-34

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-29A_VOC.xls]Plot_RW-29A_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 93B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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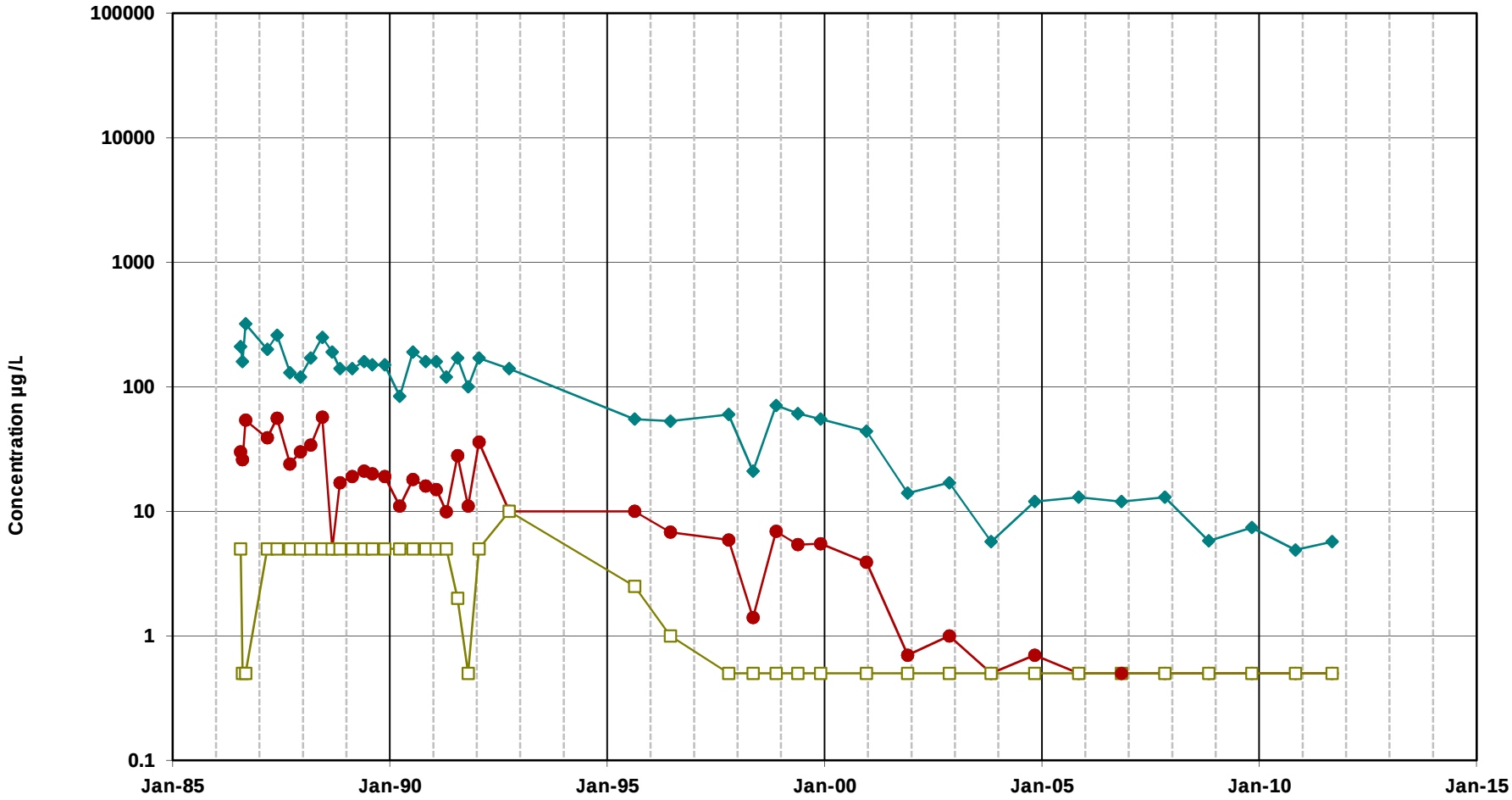
Figure
D-35

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[93B1_VOC.xls]Plot_93B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 95B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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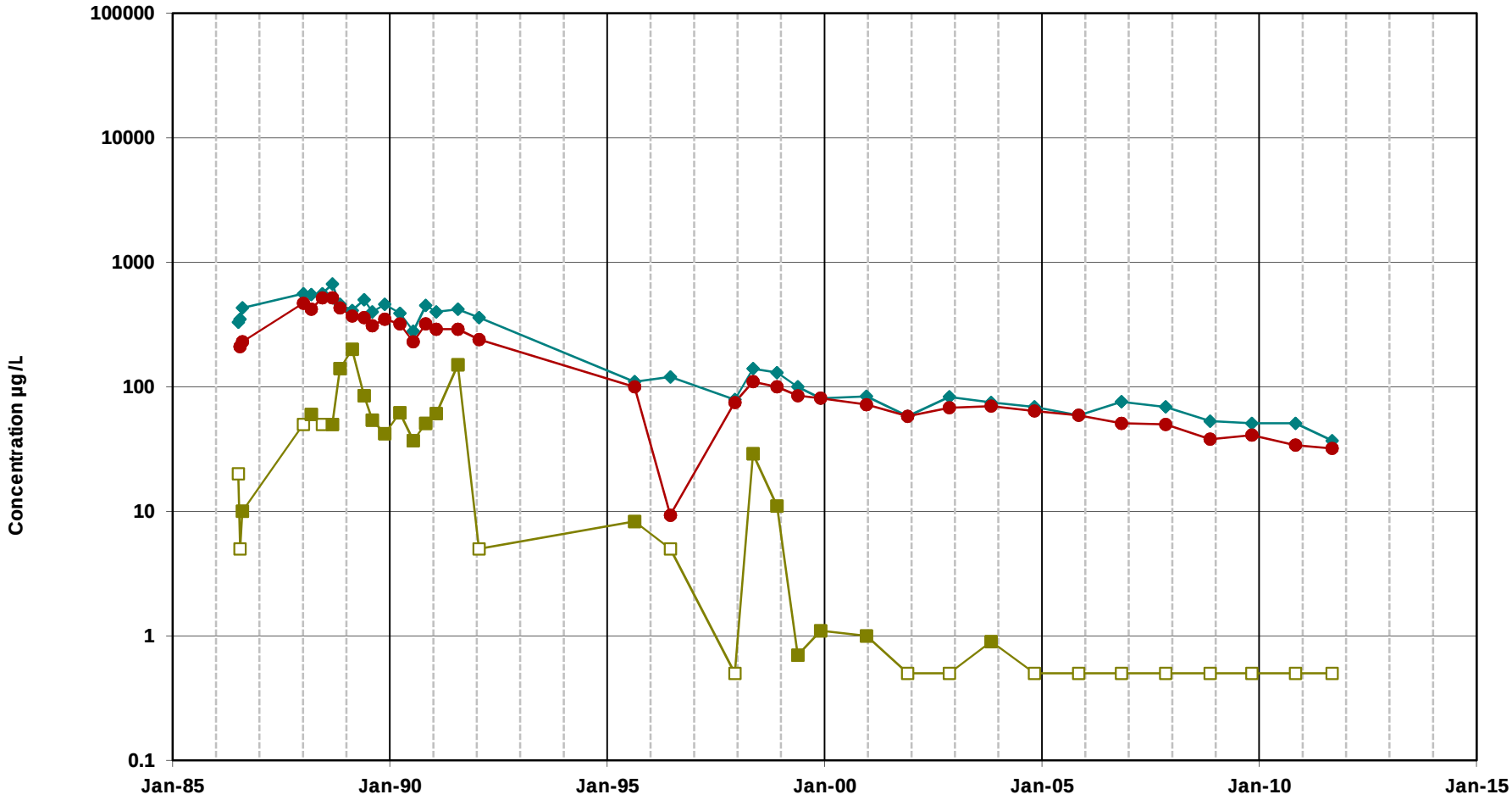
Figure
D-36

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[95B1_VOC.xls]Plot_95B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 101B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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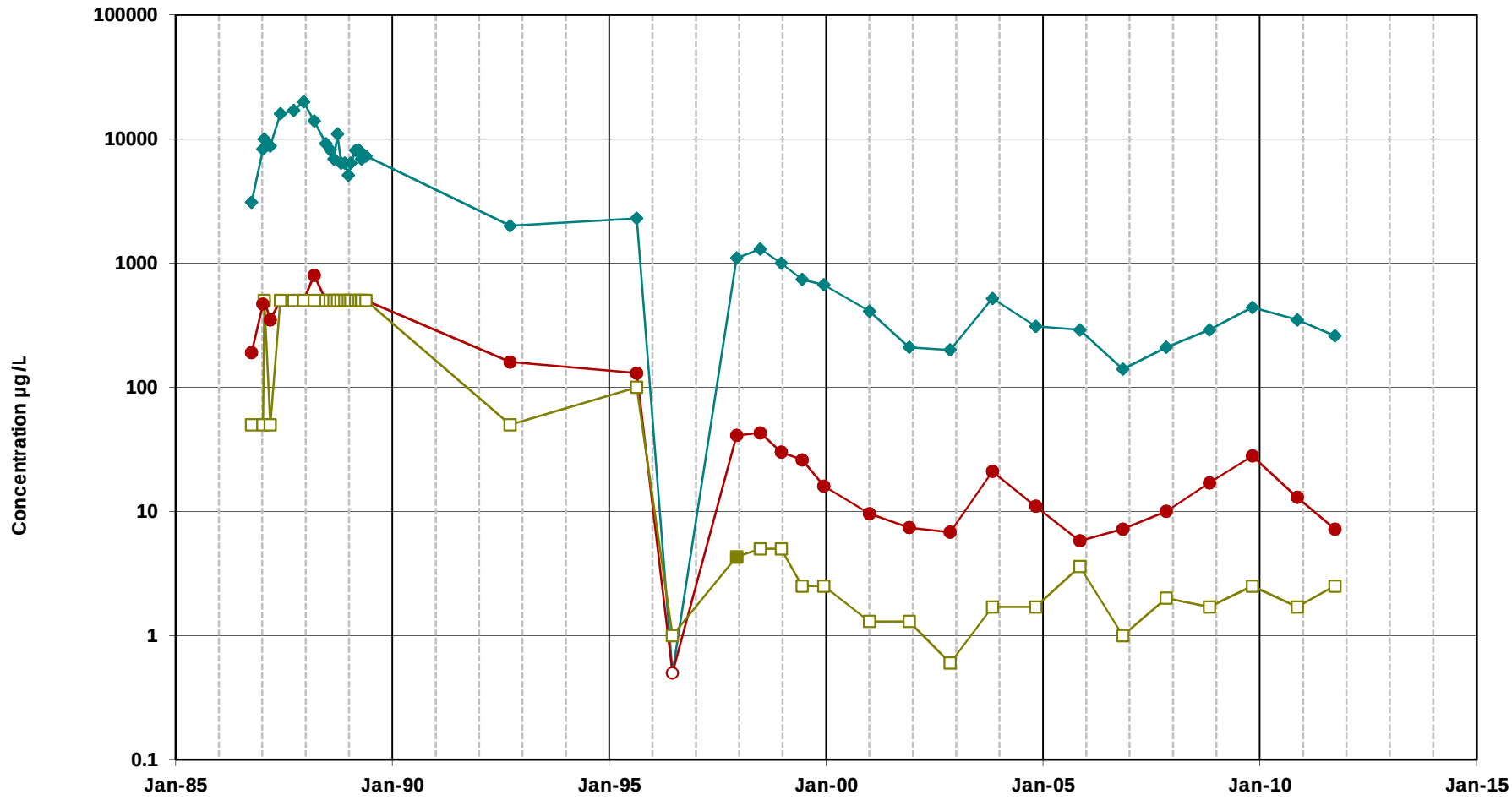
Figure
D-37

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[101B1_VOC.xls]Plot_101B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 110B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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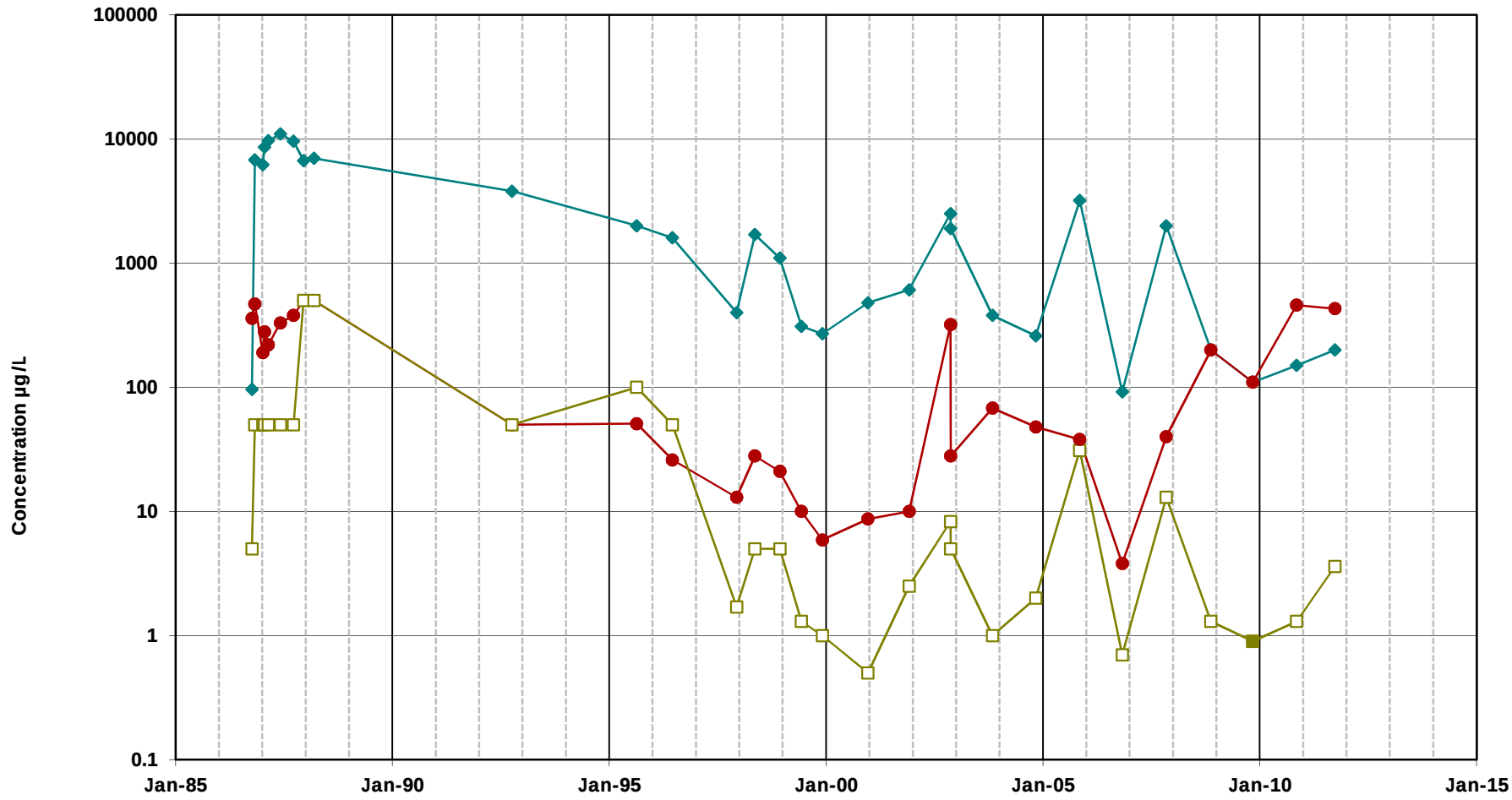
Figure
D-38

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[11081_VOC.xls]Plot_11081_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 117B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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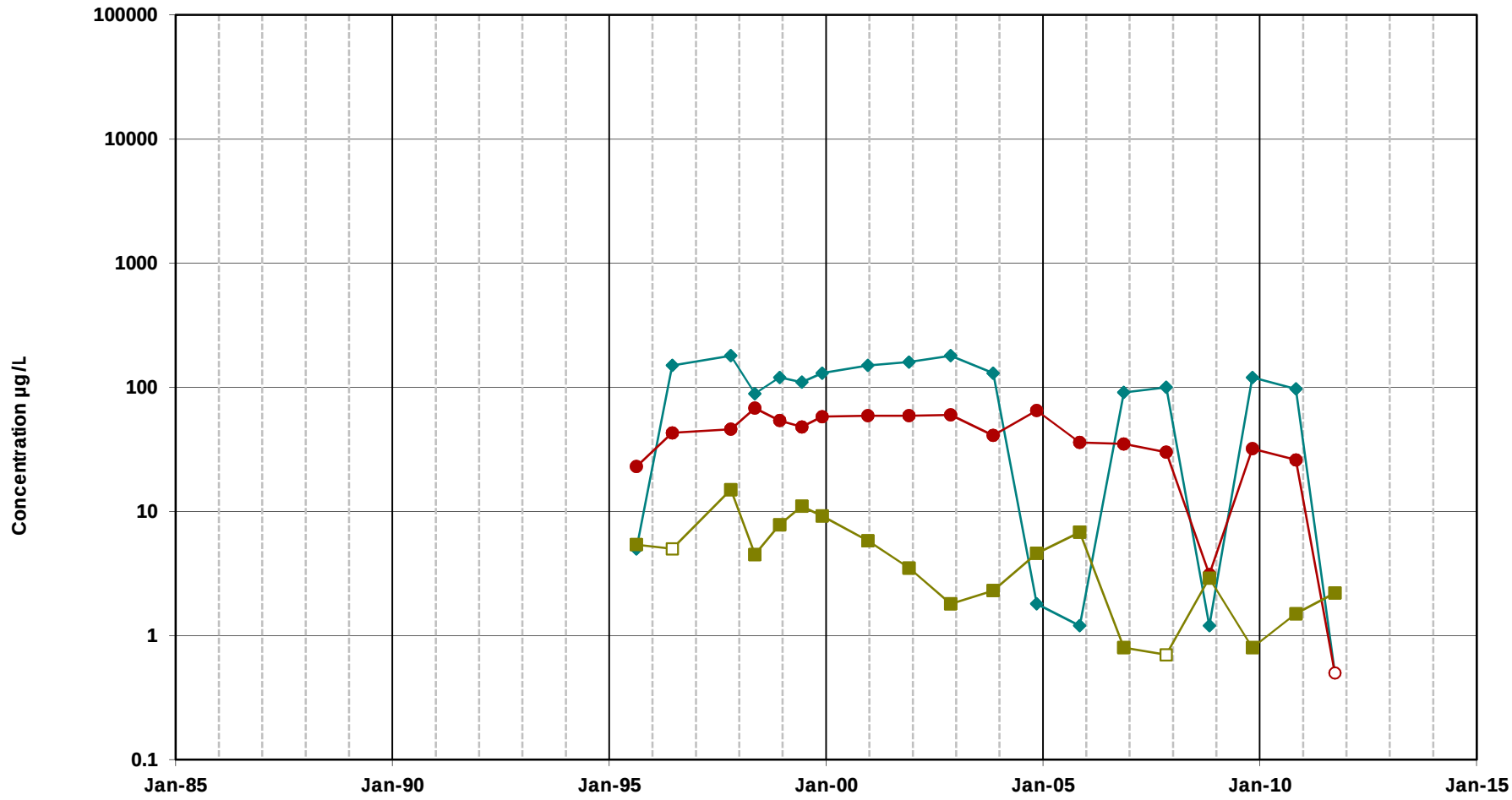
Figure
D-39

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[117B1_VOC.xls]Plot_117B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 145B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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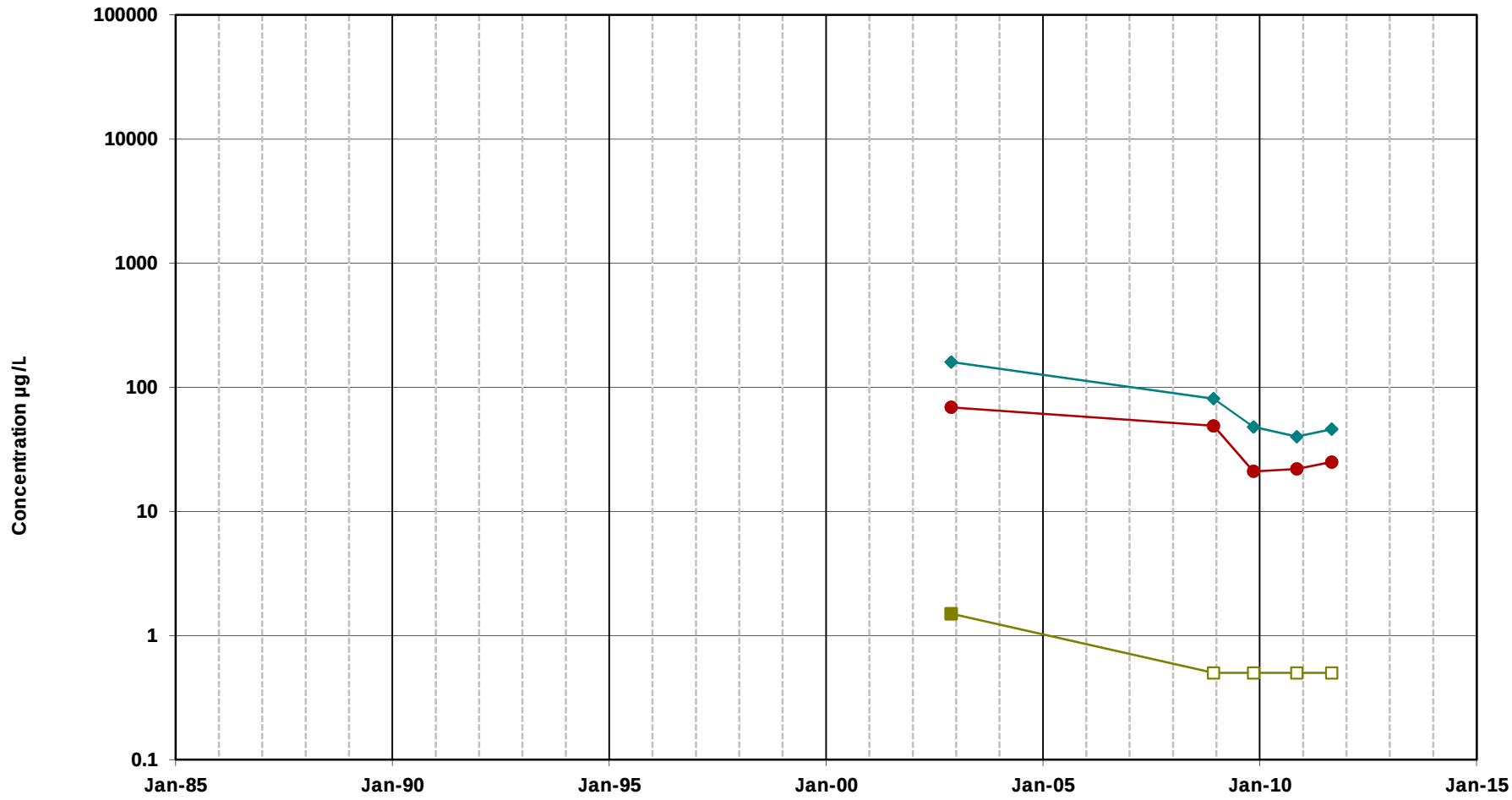
Figure
D-40

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[145B1_VOC.xls]Plot_145B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 156B1
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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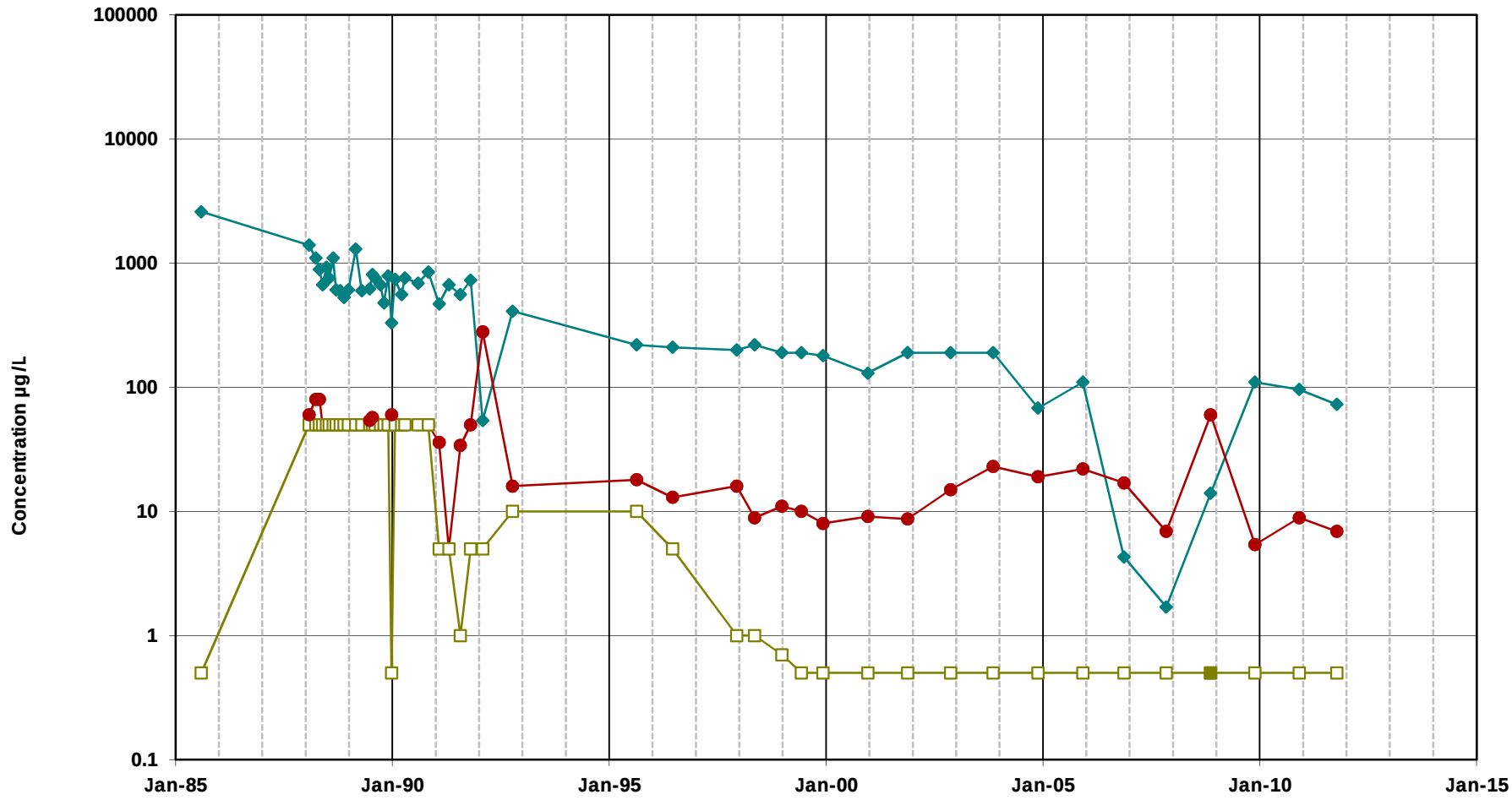
Figure
D-41

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[156B1_VOC.xls]Plot_156B1_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-1(B1)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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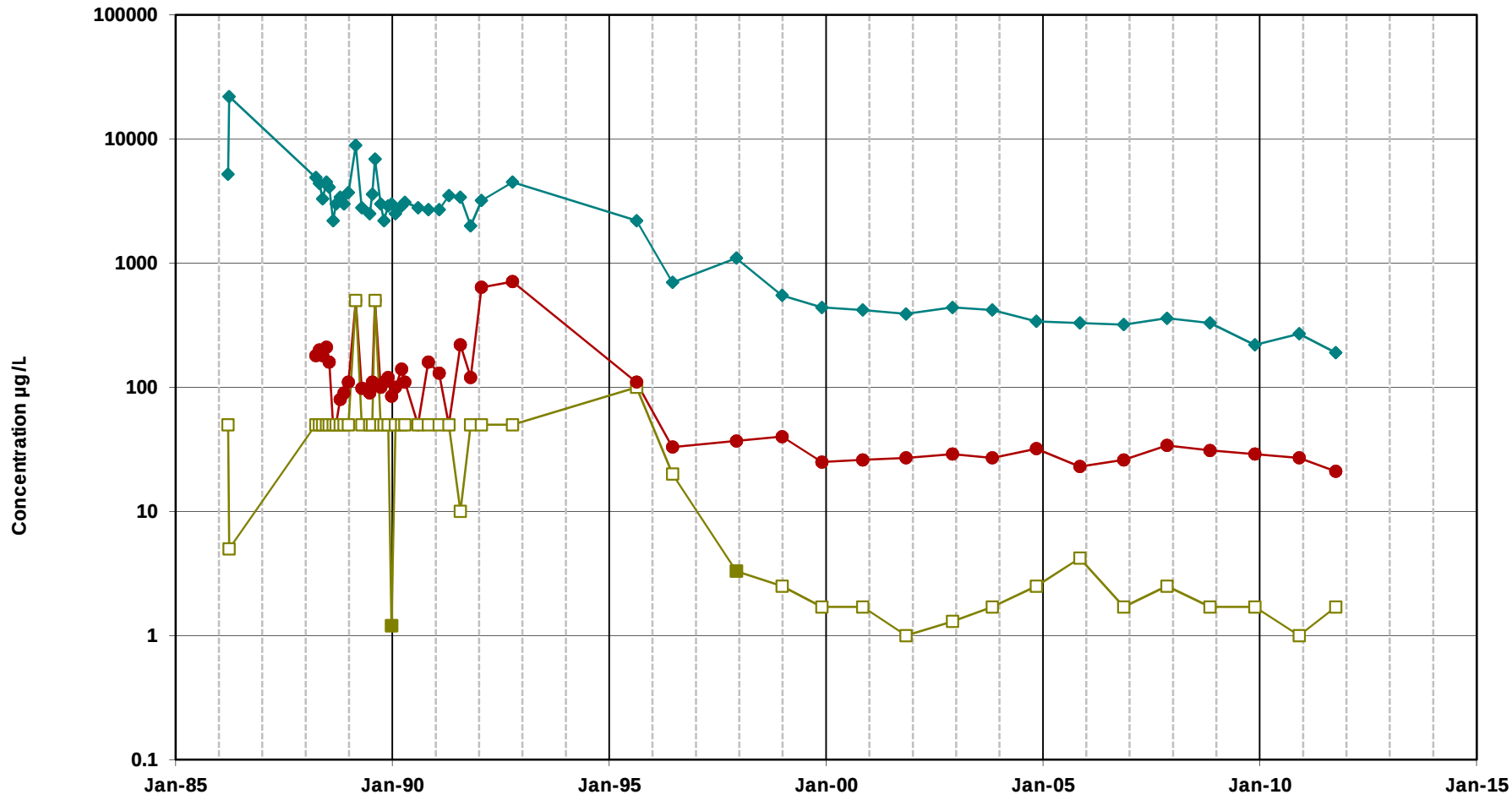
Figure
D-42

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-1(B1)_VOC.xls]Plot_RW-1(B1)_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-2(B1)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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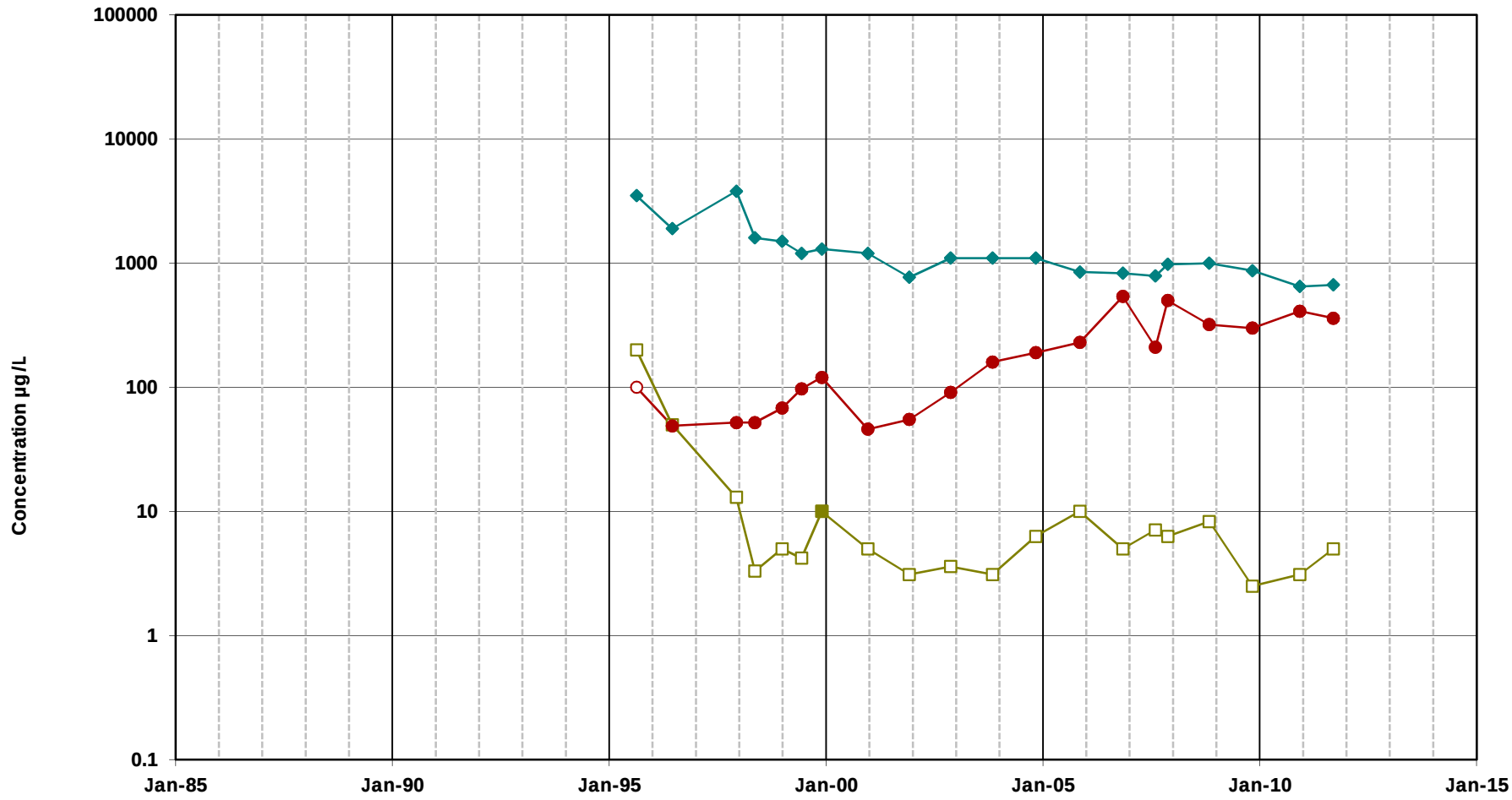
Figure
D-43

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-2(B1)_VOC.xls]Plot_RW-2 (B1)_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

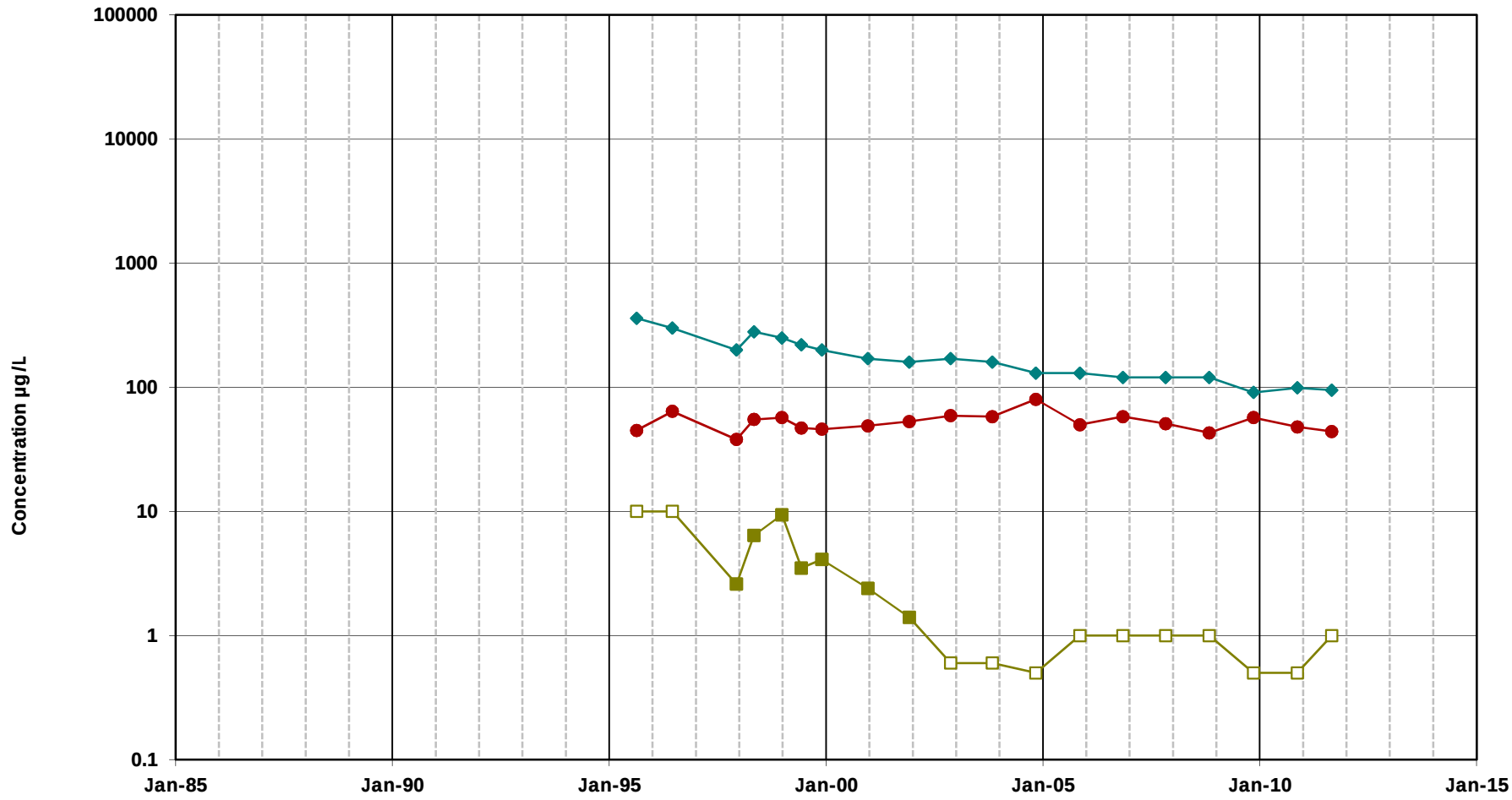
Chlorinated Ethenes in Groundwater
Well RW-10(B1)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
D-44

U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-10(B1)_VOC.xls]Plot_RW-10 (B1)_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-11(B1)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
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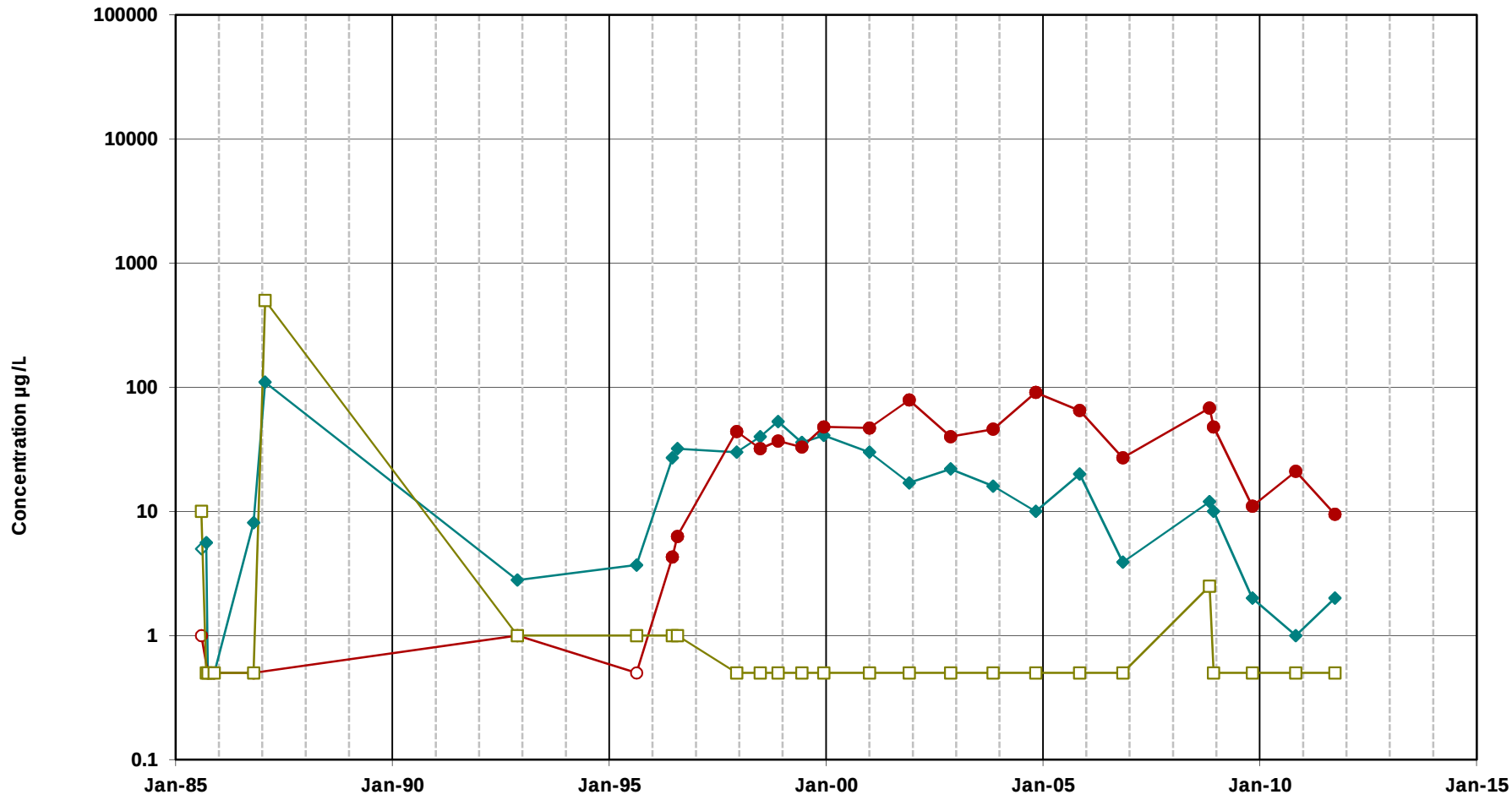
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-11(B1)_VOC.xls]Plot_RW-11 (B1)_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 40B2
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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Oakland | April 2012

Figure
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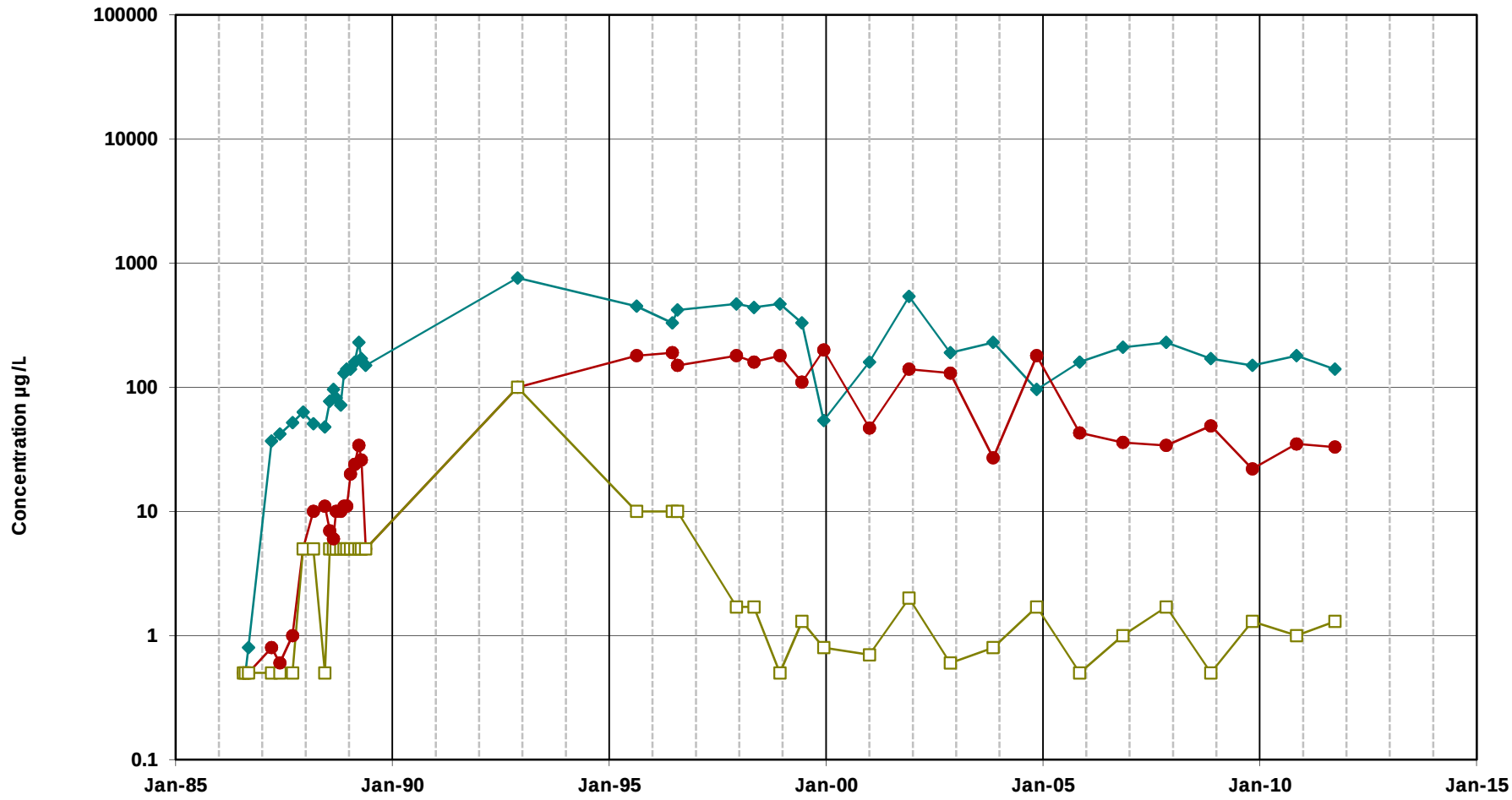
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[40B2_VOC.xls]Plot_40B2_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 90B2
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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Figure
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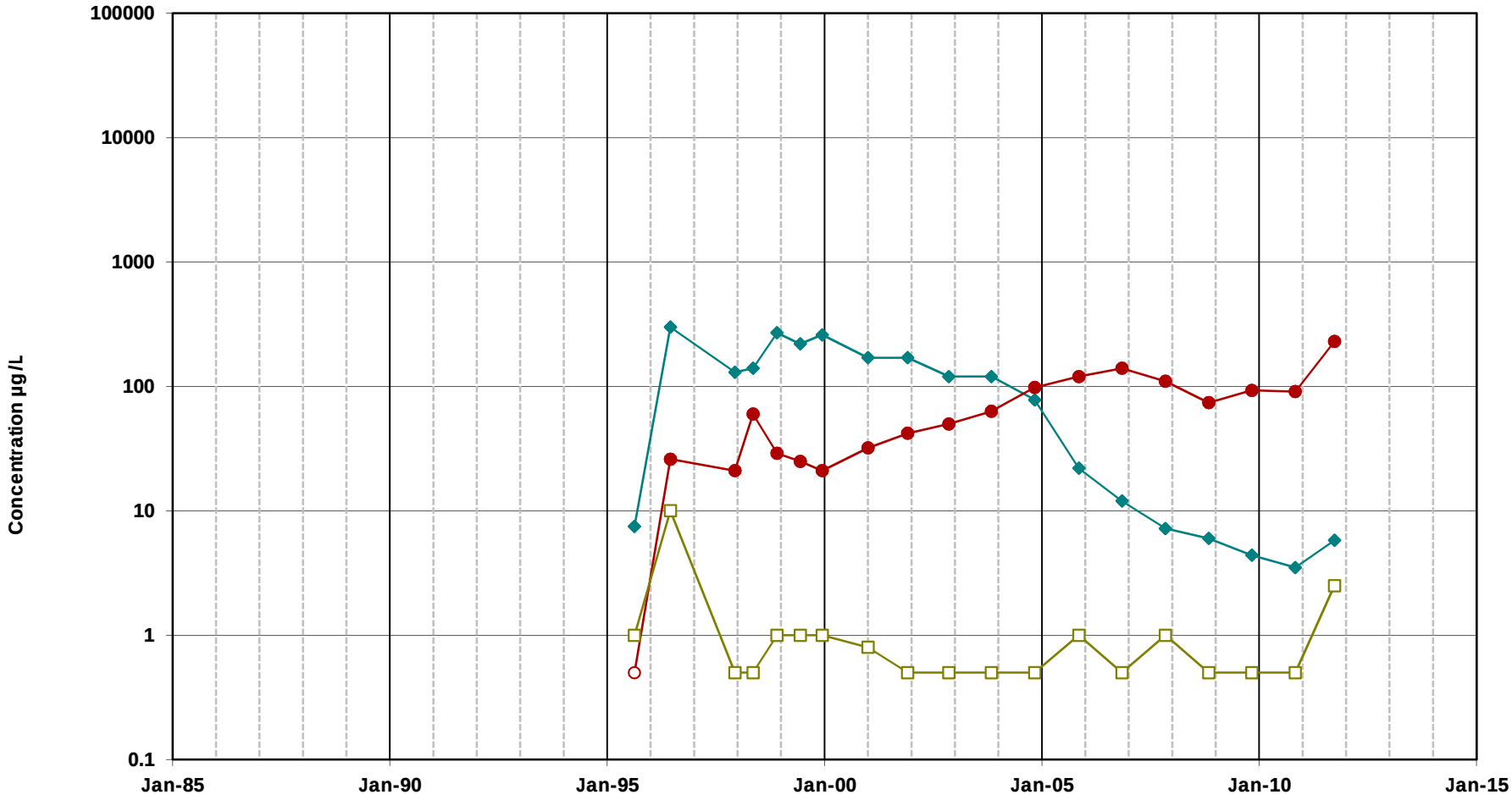
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[90B2_VOC.xls]Plot_90B2_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well 146B2
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

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Oakland | April 2012

Figure
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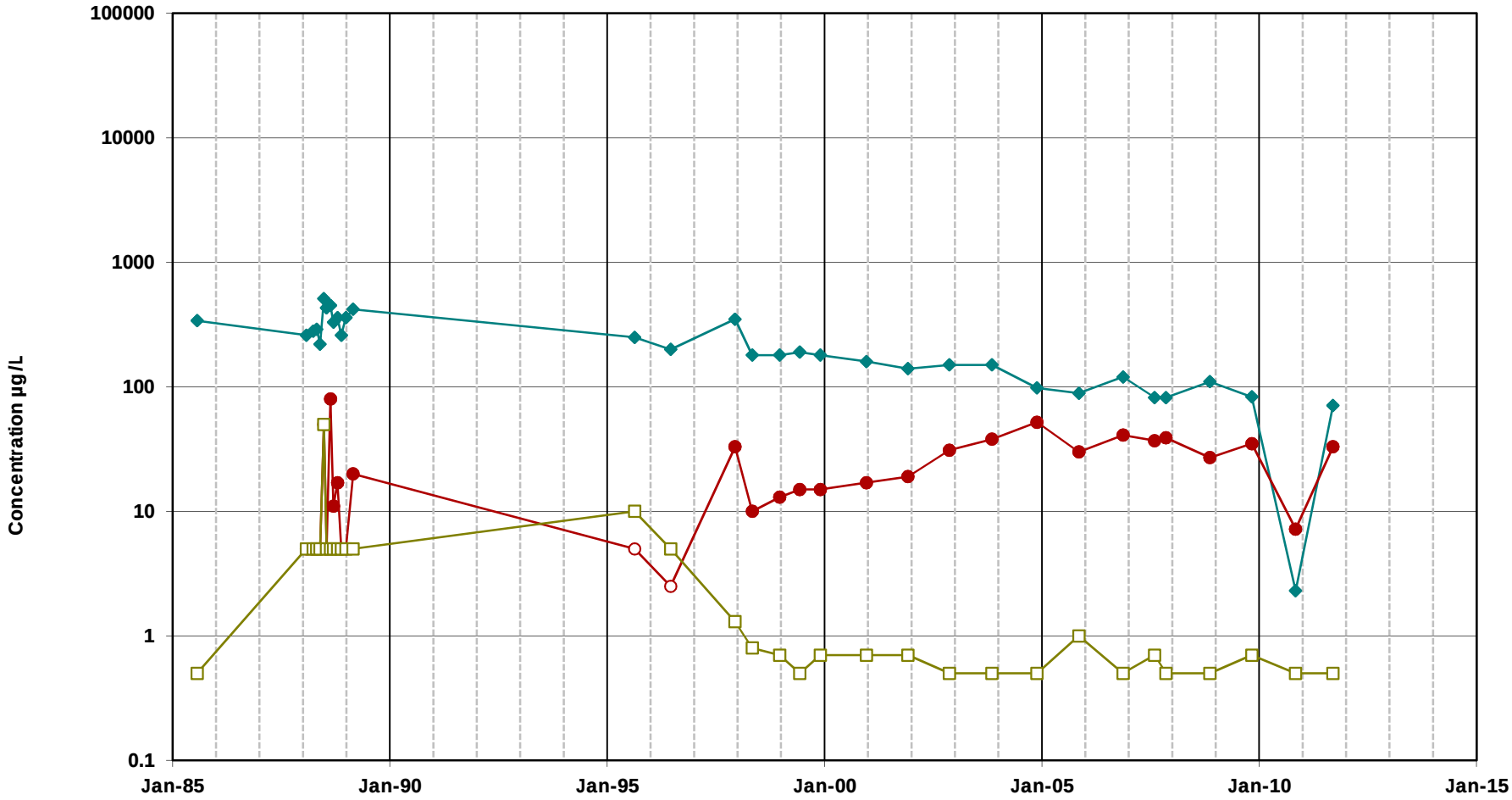
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[146B2_VOC.xls]Plot_146B2_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-1(B2)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
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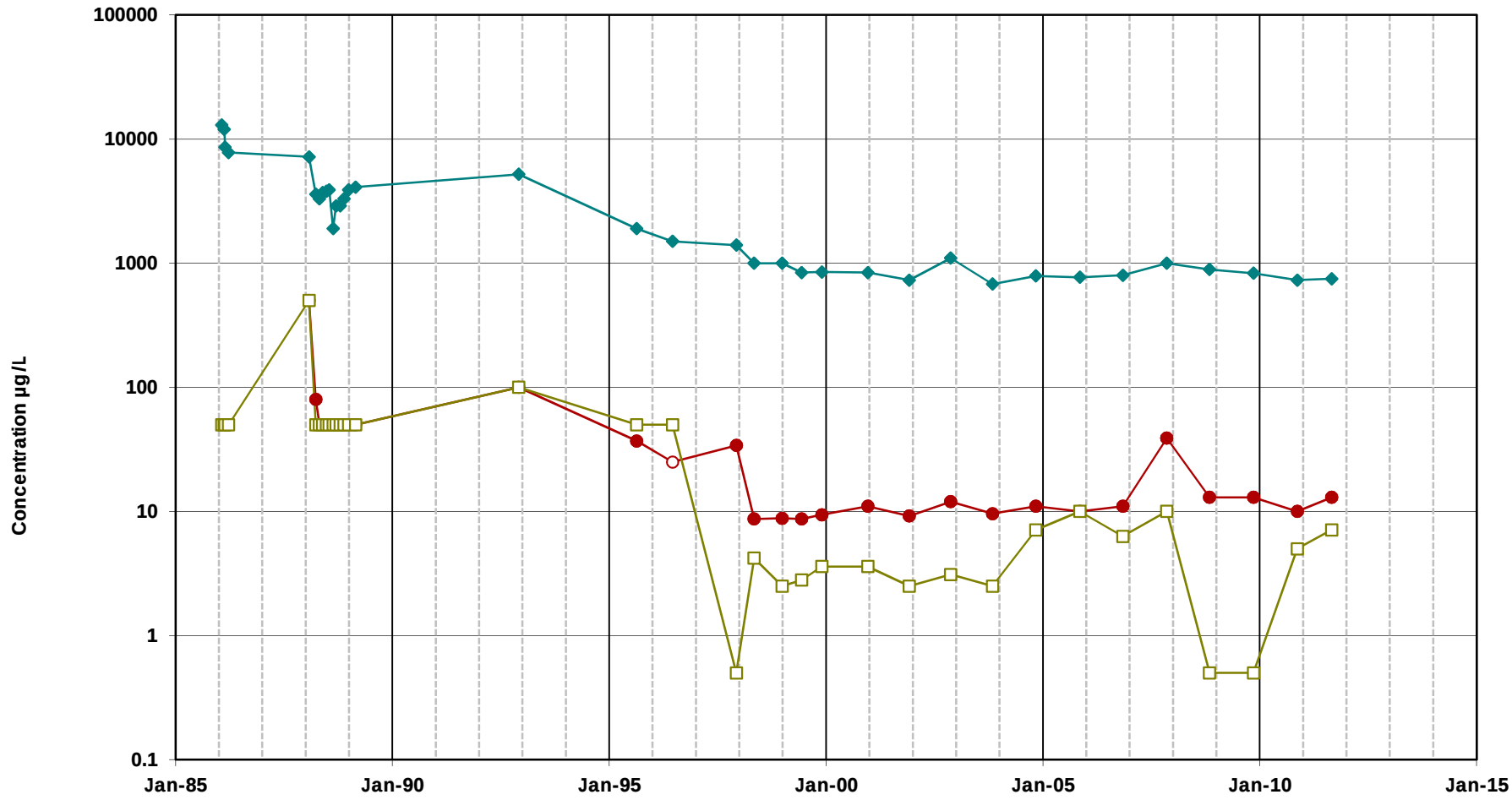
U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-1(B2)_VOC.xls]Plot_RW-1 (B2)_VOC



Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols represent non-detects
(plotted at the method detection limit)

Chlorinated Ethenes in Groundwater
Well RW-2(B2)
MEW Former Fairchild Buildings 13, 19, and 23
Mountain View, California

Geosyntec consultants

Oakland | April 2012

Figure
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U:\MEW\Excel\TimeSeries\2011_AR\Building 19\ExcelFiles\[RW-2(B2)_VOC.xls]Plot_RW-2(B2)_VOC