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April 15, 2013

Penny Reddy
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75 Hawthorne Street
San Francisco, CA 94105

Subject: **2012 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 2012 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 2012 Annual Progress Report, please feel free to call me.

Very truly yours,

Virgilio Cocianni
Remediation Manager

Attachment

CC: MEW Distribution List

Prepared for

Schlumberger Technology Corporation
105 Industrial Boulevard
Sugar Land, Texas 77478

2012 ANNUAL PROGRESS REPORT FORMER FAIRCHILD BUILDINGS 13, 19, and 23

MOUNTAIN VIEW, CALIFORNIA

Prepared by

Geosyntec consultants

engineers | scientists | innovators

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Project Number: WR1133A

15 April 2013

2012 Annual Progress Report Former Fairchild Buildings 13, 19, and 23
Middlefield-Ellis-Whisman Study Area
Mountain View, California

Prepared by

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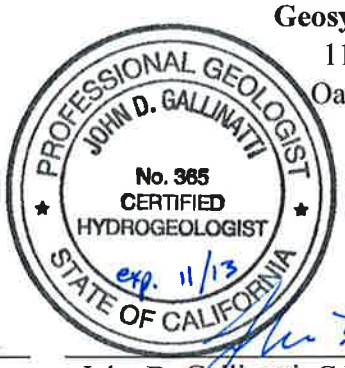

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Project Number: WR1133A
15 April 2013

Geosyntec consultants

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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
ft/ft	feet per foot
ft^2	feet squared
GAC	granular activated carbon
Geosyntec	Geosyntec Consultants
gpm	gallons per minute
GSLIB	Geostatistical Software Library
HLA	Harding Lawson Associates
K	hydraulic conductivity
µg/L	micrograms per liter
MEW	Middlefield-Ellis-Whisman
MCLs	maximum contaminant levels
NPDES	National Pollutant Discharge Elimination System
PCE	tetrachloroethene
PDB	passive diffusion bag
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
SCVWD	Santa Clara Valley Water District
Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
Weiss	Weiss Associates
TCE	trichloroethene
VOCs	volatile organic compounds

1. INTRODUCTION

This 2012 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 2012, 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 the 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 2008. Google began occupying the Site buildings 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 northernmost 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 at the Site is subdivided into two depth intervals: the A Zone (roughly between 15 and 40 feet below ground surface [bgs]) and the B Zone (roughly between 45 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 granular activated carbon (GAC), and soil excavation and treatment by aeration.

The water-bearing zones defined at the Building 19 Site are summarized below:

Water Bearing Zones	Approximate Depth Interval Below Ground Surface (bgs)
A	15 to 40 feet
B1	45 to 75 feet
B2	75 to105 feet

The following table summarizes the estimated ranges of hydraulic conductivity (K) hydraulic gradient, and transmissivity for these 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

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 (Section 2.4.4). Vertical gradients below the B1 Zone are generally upward (Geosyntec, 2008).

1.3 Description of Remedy

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

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

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 pumped 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 2012 Site Activities and Deliverables

Table 2 provides the 2012 monitoring and reporting schedule for the Site Groundwater Remediation Program. Ongoing Site activities include:

- Groundwater extraction and treatment;
- Operation and Maintenance (O&M) of treatment systems;
- Assessment of remedial progress;
- Planning for future remedial activities; and

[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.

- Sampling the treatment system 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 2012 are listed below:

February 2012

- 6 February – Submitted the 4th Quarter 2011 System 19 NPDES Self-Monitoring Report.

March 2012

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

April 2012

- 15 April – Distributed the 2012 Annual Progress Report to the EPA and MEW distribution list parties.

May 2012

- 8 May – Submitted the 1st Quarter 2012 System 19 NPDES Self-Monitoring Report.
- 24 May – Collected quarterly groundwater elevation measurements in Site slurry wall well pairs.

July 2012

- 31 July – Submitted the 2nd Quarter 2012 System 19 NPDES Self-Monitoring Report.

September 2012

- 18 September through 25 October – Collected annual groundwater samples from Site wells, and conducted an evaluation of Passive Diffusion Bag (PDB) and Hydrasleeve sampling methods on select site wells.
- 20 September – Collected semiannual groundwater elevation measurements in Site monitoring and extraction wells.

November 2012

- 9 November – Submitted the 3rd Quarter 2012 System 19 NPDES Self-Monitoring Report.
- 21 November – Collected quarterly groundwater elevation measurements in Site slurry wall well pairs.

The 2012 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 to a depth of approximately 40 feet bgs and keyed a minimum of two feet into the A/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 granular activated carbon (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 2012 average flow rates for the 15 Site extraction wells. Thirteen of the 15 Site extraction wells were operational in 2012. 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 well REG-4B(1) is conveyed to System 19 for treatment (Table 1). An additional six off-Site RRWs (65B3, 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, 2010; EPA, 2012). Further discussion of these regional wells is provided in the MEW Regional Groundwater Remediation Program (RGRP) 2012 Annual Progress Report (Geosyntec, 2013a).

2.2 Extraction and Treatment System Operation and Maintenance

From 1 January through 31 December 2012, the Site treatment system ran 96.3% of the time.[5] A total of approximately 54.6 million gallons of groundwater were treated and 298 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, 2010). The optimized target flow rates and actual flow rates are shown in Table 1. The combined average flow rates for the wells pumping to System 19 totaled 102 gallons per minute (gpm), which meets the optimized target flow rate of approximately 91 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 Tables 6a, 6b, and 6c. The laboratory analytical reports are provided in Appendix B, and the quality assurance/quality control (QA/QC) evaluation for samples collected at the Site during 2012 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, 2012a, 2012b, 2012c, and 2013). The cumulative groundwater and VOC mass removal for System 19 is shown in Figure 4.

[5] Of the System 19 downtime, approximately 70% was due to planned shutdowns.

A summary of non-routine maintenance or operational activities performed at the Site during 2012 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, two notifications of well or system shut downs were required during 2012.

A total of 17.5 tons of spent carbon was generated and classified as non-hazardous for reactivation. The spent carbon was picked up by Prominent Systems and shipped to Norit America's regeneration facility in Pryor, Oklahoma. Spent sediment filters generated during 2012 were disposed of as hazardous waste at US Ecology in Beatty, Nevada.

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 15 March and 20 September 2012. In addition, water levels were measured in 11 slurry wall well pairs (22 wells) quarterly on 15 March, 24 May, 20 September, and 12 November. Table 3 summarizes the construction details for the Site monitoring and extraction wells. Water levels measured in the Site monitoring wells during 2012 are included in Table 9. Water levels measured in the Site Slurry Wall Well Pairs between January 2008 and December 2012 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, 2013a). The groundwater elevation contour maps were created using KT3D_H2O version 3.0, a geostatistical software package (Tonkin and Larson, 2002).[6] 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.

Groundwater elevation contour maps from March and September show that while there is minor seasonal fluctuation in groundwater elevations, there is no significant seasonal change in groundwater flow or extraction well capture across the Site.

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.

[6] 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).

- 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 2012 were interpolated to generate groundwater elevation contour maps as described in Section 2.3 and the MEW RGRP Annual Report (Geosyntec, 2013a);
- Pumping rates from RRWs and SCRWs were compiled;
- 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 2012 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 Section 2.4.2 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 12 was developed by using the combined 2012 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). 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. The target capture width for wells outside the slurry wall was considered to be the total width of the site. If the estimated width of capture is greater than the transgradient 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 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, September, and November 2012 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 pairs 141A/139A and 17A/159A 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.

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

The horizontal and vertical gradients recorded during this reporting period are generally consistent with historical observations, besides a shift from outward to inward gradient at well pair 17A/159A and from upward to downward gradient at well pair 159A/RW-1(B1). 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 A zone extractions wells RW-24A and RW-2A and B1 Zone extraction wells RW-11 and RW-2(B1).

2.5 Groundwater Quality Monitoring

The 2012 Annual Groundwater Quality Sampling Event at the Site was conducted in September and October 2012. A total of 48 Site wells were sampled for VOCs in 2012. In addition, two MEW RGRP wells located on the Site were sampled in 2012 and are reported separately in the RGRP Annual Report (Geosyntec, 2013a). Chemical analytic results for the previous five years (2008 through 2012) are provided in Table 12. Appendix B contains the laboratory analytic reports and chain-of-custody documents for samples collected in 2012, 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 2012 annual sampling

event and are presented for the A Zone, B1 Zone, and B2 Zone in Figures 13 through 24. These maps are based on a contouring performed for the MEW RGRP Annual Progress Report (Geosyntec, 2013a) that includes all wells in the MEW study area sampled for VOCs in 2012. The 2012 contour maps were based on the previous 2011 isoconcentration contour maps (Geosyntec, 2012) with contours modified as needed to reflect decreases or increases in TCE concentrations from 2011 to 2012. In addition to data from the annual sampling event, VOC concentrations from grab-groundwater samples collected to address issues identified in the Second Five-Year Review Report for MEW were included in the isoconcentration contouring. Further information on data collected in these areas is provided in the Grab-Groundwater Assessment and Proposed Well Installations and the MEW RGRP Annual Progress Report (Geosyntec, 2013a,b).

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 2012 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[7] (Table 13). Based on the Mann-Kendall statistical analysis, the TCE concentrations are decreasing, stable, or have no trend in 92% of the Site wells. Approximately 39% of Site wells display decreasing TCE concentration trends and 53% 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 Zone, respectively, with the September 2012 hydraulic capture zones (Section 2.4)

[7] A Mann-Kendall statistical analysis was performed on all Site wells using the TCE, cis-1,2-DCE and vinyl chloride concentration data from 2003 to 2012 to evaluate the concentration trends. Well with insufficient data (< 4 sampling events) were not included in the trend analysis evaluation.

overlain on the September/October 2012 TCE isoconcentration maps. These figures illustrate complete hydraulic capture, within the site boundaries.

The small percentage of wells that have recent increasing or possibly increasing TCE concentration trends include 154A (increasing), 160A (possibly increasing), and RW-12A (possibly increasing). The TCE concentration increase in each of these wells was less than an order of magnitude over the last five years.

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 2012. 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 a separate cover (Geosyntec, 2013c).

3.2 PDB/HydraSleeve Evaluation

A voluntary supplemental groundwater sampling and analysis was conducted to evaluate whether an alternate sampling method using either PDB or HydraSleeve™ technologies would be acceptable for future annual sampling events. A report summarizing the findings is included in the MEW RGRP Annual Progress Report (Geosyntec, 2013a). Based on the results of this evaluation, HydraSleeve™ sampling can be a viable alternative to low-flow sampling and provide statistically equivalent results.

4. PROBLEMS ENCOUNTERED

Table 8 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 2012.

- The remedy is functioning as intended. Based on 2012 data reviewed, the groundwater remedy is 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.
- VOC concentrations are steady to decreasing over time. More than 90% of Site wells have decreasing to stable trends or no trend in TCE concentrations over time (Appendix D).

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

6. CONCLUSIONS AND RECOMMENDATIONS

Approximately 54.6 million gallons of groundwater were treated and 298 pounds of VOCs were removed by the groundwater treatment system during 2012. From 1 January through 31 December 2012, System 19 ran 96.3% of the time.

The technical assessment concludes that the Site groundwater remedy is performing as intended. The estimated capture zones from March and September 2012 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.

Groundwater elevation contour and capture zone maps from March and September show that there is no significant seasonal change in groundwater flow or extraction well capture across the study area. Therefore, it is recommended that the frequency of groundwater level monitoring be reduced from semi-annual to annual, coincident with the September/October sampling event.

Based on the analysis of the alternate sampling method included in the MEW RGRP Annual Progress Report (Geosyntec, 2013a), it is recommended that HydraSleeve™ sampling be included as an acceptable monitoring method in addition to low-flow sampling.

7. UPCOMING WORK IN 2013 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 • Slurry wall well pair groundwater level measurements
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
November	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Semi-annual system influent sampling (NPDES) • Submit 3rd Quarter NPDES report • Slurry wall well pair groundwater level measurements
December	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)

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TABLES

Table 1
System 19 Target and 2012 Average Recovery Well Flow Rates
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Extraction Wells	2012 Target Flow Rate[1] (gpm)	Average 2012 Flow Rate[2] (gpm)
A Zone		
71A	4.0	3.6
RW-1A	4.0	5.2
RW-2A	8.5	9.0
RW-11A	3.0	3.2
RW-12A	2.0	2.6
RW-23A	10.5	10.8
RW-24A	2.5	4.0
RW-26A[3]	off	off
RW-29A	11.5	10.2
B1 Zone		
REG-4B(1) (RGRP)	6.0	6.6
RW-1(B1)[3]	off	off
RW-2(B1)	5.5	6.1
RW-10(B1)	12.5	13.2
RW-11(B1)	9.0	9.4
B2 Zone		
RW-1(B2)	0.1	0.3
RW-2(B2)	12.0	12.7
B3 Zone		
65B3 (RGRP)[4]	off	4.8
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 2012 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 28 December 2011 and 26 December 2012.

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

4. Well was taken offline in September 2012 with EPA approval (EPA, 2012).

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 2012 Annual Progress Report (Geosyntec, 2013a).

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, California

Monitoring and Sampling - Wells		
Well	**Sampling Frequency**	**Water Level Gauging Frequency**
A 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 Zone		
93B1[2]		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)[3]	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)
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)

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

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[4,5]	

Reporting	
Report	**Due Date**
Quarterly NPDES	February 15, May 15, August 15, and November 15
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 were sampled in 2012.
2. Regional Groundwater Remediation Program well gauged as part of a slurry wall well pair.
3. RW-2(B1) is a Fairchild extraction well that is monitored as part of the Regional Groundwater Remediation Program
4. 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.
5. 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 2012 Annual Progress Report (Geosyntec, 2013a).
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, California

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 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 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 2012 Annual Progress Report (Geosyntec, 2013a)

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

Extraction Well	2012 Average Monthly Flowrate[1] (gpm)											
	January	February	March	April	May	June	July	August	September	October	November	December
A Zone												
71A	3.71	3.25	2.75	2.01	1.44	4.47	4.78	4.63	4.34	4.03	4.62	3.70
RW-1A	4.85	5.16	5.95	5.81	5.93	4.94	5.49	5.17	5.02	4.76	4.06	4.74
RW-2A	8.75	8.85	9.29	9.15	9.55	8.11	9.33	9.51	10.00	9.11	8.75	8.03
RW-11A	3.32	3.40	3.53	3.24	3.46	2.66	3.08	3.50	3.42	3.15	3.05	2.81
RW-12A	2.29	2.49	2.39	2.24	2.26	1.81	1.91	1.67	0.99	3.86	4.68	4.41
RW-23A	10.85	10.88	11.35	10.70	10.64	9.01	10.53	10.44	12.36	11.90	11.65	9.62
RW-24A	4.43	4.27	4.50	4.06	4.59	3.80	4.61	4.04	3.52	3.55	3.71	3.44
RW-26A[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-29A	7.41	9.27	11.27	10.78	11.05	9.26	10.77	10.67	10.85	10.64	10.78	10.04
B1 Zone												
REG-4B(1) (RGRP)	6.69	6.52	6.86	6.56	6.81	5.77	6.81	6.72	6.90	6.82	6.83	6.31
RW-1(B1)[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-2(B1)	6.32	6.09	6.40	6.15	6.38	5.40	6.35	6.21	6.28	6.09	6.06	5.52
RW-10(B1)	12.00	11.95	13.29	12.83	13.46	11.40	13.32	13.68	14.73	14.41	14.15	12.99
RW-11(B1)	9.42	9.10	9.45	9.18	9.50	7.54	9.74	9.55	9.77	9.69	9.96	9.27
B2 Zone												
RW-1(B2)	0.32	0.32	0.32	0.31	0.31	0.28	0.31	0.30	0.30	0.29	0.28	0.27
RW-2(B2)	12.54	12.43	12.97	11.86	12.23	10.85	13.14	13.00	13.94	13.61	13.45	12.11
B3 Zone												
65B3 (RGRP)[2]	6.56	6.41	6.76	6.46	6.73	5.70	6.76	6.67	5.60	0.00	0.00	0.00
C/Deep Zone												
DW3-219 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-244 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-334 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-364 (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
DW3-505R (RGRP)[2]	--	--	--	--	--	--	--	--	--	--	--	--
Total	99.47	100.41	107.08	101.34	104.34	91.00	106.92	105.77	108.01	101.92	102.02	93.26

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; EPA, 2012).

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 2012 Annual Progress Report (Geosyntec, 2013a)

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

Extraction Well	2012 Monthly Volume Extracted[1] (gallons)											
	January	February	March	April	May	June	July	August	September	October	November	December
A Zone												
71A	149,767	164,012	111,014	80,932	70,545	186,474	192,831	240,130	168,812	203,346	186,408	149,153
RW-1A	195,481	260,040	239,758	234,321	290,453	206,325	221,445	267,891	195,329	240,141	163,872	191,161
RW-2A	352,763	446,285	374,653	368,856	467,619	338,653	376,348	492,811	388,878	459,102	352,737	323,669
RW-11A	133,881	171,518	142,216	130,581	169,173	111,007	124,212	181,360	132,799	158,992	122,884	113,362
RW-12A	92,330	125,525	96,464	90,511	110,582	75,753	77,022	86,696	38,403	194,754	188,878	177,893
RW-23A	437,648	548,453	457,527	431,470	520,860	376,164	424,565	541,317	480,560	599,555	469,577	387,740
RW-24A	178,692	215,321	181,602	163,575	224,661	158,493	185,675	209,322	136,714	178,952	149,479	138,541
RW-26A[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-29A	298,935	467,353	454,476	434,664	540,902	386,871	434,049	553,069	421,780	536,146	434,678	404,961
B1 Zone												
REG-4B(1) (RGRP)	269,866	328,618	276,770	264,544	333,490	241,110	274,592	348,516	268,129	343,810	275,197	254,608
RW-1(B1)[2]	--	--	--	--	--	--	--	--	--	--	--	--
RW-2(B1)	254,822	306,692	257,868	247,796	312,316	225,514	255,851	322,071	244,273	306,938	244,382	222,535
RW-10(B1)	483,701	602,465	536,049	517,185	658,826	476,251	537,168	709,396	572,561	726,271	570,442	523,817
RW-11(B1)	379,804	458,880	380,862	370,143	465,243	314,746	392,561	495,219	379,837	488,365	401,595	373,764
B2 Zone												
RW-1(B2)	12,937	15,974	12,813	12,515	15,400	11,650	12,689	15,717	11,593	14,474	11,121	10,904
RW-2(B2)	505,479	626,553	522,786	478,249	598,872	453,245	529,609	673,805	542,011	685,942	542,186	488,107
B3 Zone												
65B3 (RGRP)[2]	264,329	323,140	272,566	260,599	329,721	237,861	272,531	345,857	217,626	--	--	--
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]	4,210,960	5,313,870	4,586,450	4,333,150	5,423,350	4,007,200	3,955,836	4,741,138	4,415,287	5,261,900	4,174,400	3,515,150

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; EPA, 2012).
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 2012 Annual Progress Report (Geosyntec, 2013a)

Table 6a

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	2/2/2012	<5.0	**2.3**	<2.5	**2.7**	**120**	**3.8**	10	**5.1**	**420**	**0.7**	**1.3**	NA
Influent	5/3/2012	<5.0	**3.0**	<2.5	**2.8**	**140**	**2.2**	19	**5.1**	**440**	**0.9**	**1.6**	NA
Influent	8/16/2012	**0.28**	**2.4**	<0.50	**3.3**	**170**	**2.7**	13	**4.2**	**500**	**0.37**	**1.3**	NA
Influent	11/13/2012	<5.0	**3.6**	<2.5	**4.1**	**200**	**3.6**	10	**5.1**	**520**	<2.5	**4.3**	NA
Midpoint 1	1/5/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**0.1**	NA
Midpoint 1	2/2/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**0.3**	NA
Midpoint 1	3/1/2012	<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	4/12/2012	<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	5/3/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	**1.0**	NA
Midpoint 1	6/7/2012	<1.0	<0.5	<0.5	<0.5	**0.6**	<0.5	<2.0	<0.5	**0.2**	<0.5	**0.6**	NA
Midpoint 1	7/5/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Midpoint 1	8/16/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.1**	NA
Midpoint 1	9/6/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.59**	NA
Midpoint 1	10/17/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Midpoint 1	11/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Midpoint 1	12/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.5**	NA
Midpoint 2	2/2/2012	<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	5/3/2012	<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	8/16/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Midpoint 2	11/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	1/5/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	2/2/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	3/1/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	4/12/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	5/3/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	6/7/2012	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Effluent	7/5/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	8/16/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	9/6/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	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

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	10/17/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	11/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	12/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	1/5/2012	<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	2/2/2012	<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	3/1/2012	<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	4/12/2012	<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	5/3/2012	**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	NA
Travel Blank	5/11/2012	<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	6/7/2012	<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	7/5/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	8/16/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	9/6/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	10/17/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	11/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Travel Blank	12/13/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	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
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 Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Sample Location	Sample Date	pH	Temp (°C)	Conductivity (µS/cm)	Turbidity (NTU)	Cyanide (µg/L)	Rainbow Trout Acute Toxicity[1] (% survival)	
							Three sample moving median	Single sample
Influent	02/02/12	6.06	19.1	647	---	---	---	---
Influent	05/03/12	6.89	20.1	907	---	---	---	---
Influent	08/16/12	6.90	19.6	782	---	---	---	---
Influent	11/13/12	7.04	19.1	862	---	---	---	---
Midpoint 1	01/05/12	6.66	19.2	648	---	---	---	---
Midpoint 1	02/02/12	6.03	18.7	634	---	---	---	---
Midpoint 1	03/01/12	6.97	18.5	640	---	---	---	---
Midpoint 1	04/12/12	6.69	18.3	662	---	---	---	---
Midpoint 1	05/03/12	6.92	20.1	908	---	---	---	---
Midpoint 1	06/07/12	6.80	19.7	805	---	---	---	---
Midpoint 1	07/05/12	7.04	20.9	879	---	---	---	---
Midpoint 1	08/16/12	6.93	19.3	780	---	---	---	---
Midpoint 1	09/06/12	6.72	19.3	757	---	---	---	---
Midpoint 1	10/17/12	7.10	---	665	---	---	---	---
Midpoint 1	11/13/12 - 11/15/12	7.04	19.1	860	---	---	---	---
Midpoint 1	12/13/12	6.94	18.9	775	---	---	---	---
Midpoint 2	02/02/12	6.25	18.8	635	---	---	---	---
Midpoint 2	05/03/12	6.89	20.0	908	---	---	---	---
Midpoint 2	08/16/12	6.91	19.8	771	---	---	---	---
Midpoint 2	11/13/12	7.18	18.9	862	---	---	---	---
Effluent	01/05/12	6.97	18.5	610	---	---	---	---
Effluent	02/02/12	6.67	18.9	649	---	---	---	---
Effluent	03/01/12	6.88	18.5	615	---	---	---	---
Effluent	04/12/12	6.62	17.8	675	---	---	---	---
Effluent	05/03/12	6.88	20.1	916	---	---	---	---
Effluent	06/07/12	6.82	20.1	805	---	---	---	---
Effluent	07/05/12	6.95	21.0	868	---	---	---	---
Effluent	08/16/12	6.92	19.7	799	---	---	---	---
Effluent	09/06/12	6.78	19.1	764	---	---	---	---
Effluent	10/17/12	7.08	---	666	---	---	---	---
Effluent	11/13/12 - 11/15/12	7.08 / 7.00	19.0 / 19.1	868 / 843	<0.10	<1	100	100
Effluent	12/13/12	6.99	18.3	770	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	2.9	NE	NE
Effluent Limitations:[2]		6.5 to 8.5	NE	NE	NE	NE	90.0	70.0

General Notes:
All parameters are within effluent limits specified in NPDES permit order no. R2-2009-0059, NPDES permit no. CAG912003

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 reported more frequently. 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 performed in November 2012 (Table 6c). The next triennial sampling will be conducted in November 2015.

Notes:
1. Rainbow trout acute toxicity, 96-hr static, percent survival. This analysis is required to be performed annually
2. Effluent limitation in system discharge as specified in Order No. R2-2009-0059, VOC General NPDES Permit CAG912003
--- = not applicable, not required
Temp = temperature
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
< indicates analyte not detected above the reported detection limi
µS/cm = micro Siemens per centimeter
NTU = nephelometric turbidity unit
µg/L = micrograms per Liter
NE = not established
NPDES = National Pollutant Discharge Elimination System
VOC = volatile organic compound

Table 6c

Metals Sampling Results Summary, System 19

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

Mountain View, California

Sample Location	Sample Date	Constituent (concentration in µg/L)													
		Antimony	**Arsenic**	**Beryllium**	**Cadmium**	**Chromium**	**Copper**	**Lead**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Zinc**	**Hexavalent Chromium**	**Low-Level Mercury**
Effluent	11/13/2012	**0.05**	**0.36**	<0.1	<0.1	<0.5	**2.0**	0.24	**2.6**	**2.3**	<0.1	<0.1	**2.5**	**0.068**	<0.0005
NPDES Trigger Levels[1]		*6*	*10*	*4*	*1.1*	*11*	*4.7*	*3.2*	*27*	*5.0*	*2.2*	*1.7*	*86*	*11*	*0.025*

Notes:

All parameters are below trigger level perscribed in NPDES Permit Order # R2-2009-0059, NPDES Permit No. CAG912003.

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 performed in November 2012. The next triennial sampling will be conducted in November 2015.

[1]There are no effluent limitation specified from metals in the NPDES Permit Order # R2-2009-0059, NPDES Permit No. CAG912003.

< indicates analyte not detected above the reported detection limit

NE = Not Established

NPDES = National Pollutant Discharge Elimination System

µg/L = micrograms per liter

Table 7

System 19 VOC Mass Removal Summary

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

Mountain View, California

	Total Groundwater Extracted[1] (gallons)	Influent VOC Concentration[1,2] (mg/L)	Total VOC Mass Removed[1] (pounds)
January	4,210,960	0.57	19.8
February	5,313,870	0.57	25.0
March	4,586,450	0.57	21.6
April	4,333,150	0.61	22.2
May	5,423,350	0.61	27.8
June	4,007,200	0.61	20.5
July	3,955,836	0.70	23.0
August	5,444,977	0.70	31.6
September	4,415,287	0.70	25.6
October	5,261,900	0.75	32.9
November	4,174,400	0.75	26.1
December	3,515,150	0.75	22.0
2012 Cumulative[1]	54,642,530		298.2

Notes:

1. Total groundwater extracted, influent VOC concentrations, total VOC mass removed, and cumulative values were obtained from the NPDES quarterly reports (Weiss, 2012a,b,c and 2013).
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 2012 Non-Routine Maintenance and Operational Activities for System 19
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

2012	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
March 28	Treatment System	<1 hour	Multiple alerts.	Alerts caused by a power glitch. System was restarted.	Not required
March 28 – 29	RW-24A	22 hours	Well would not restart upon system restart.	Adjusted pump saver. Well was restarted.	Not required
April 19	Treatment System	1 hour	Planned manual shutdown.	System was shut down as a safety precaution for redevelopment construction work near the treatment system. System was restarted.	Not Required
April 28	Treatment System	2 hours	Planned manual shutdown.	System was shut down as a safety precaution for redevelopment construction work near the treatment system. System was restarted.	Not Required
April 30	Treatment System	1 hour	Planned manual shutdown.	System was shut down as a safety precaution for redevelopment construction work near the treatment system. System was restarted.	Not Required
May 21	Treatment System	1 hour	Planned manual shutdown.	System was shut down for manifold retrofit. System was restarted.	Not Required
May 21	RW-11(B1)	<1 hour	Well vault high level alert.	Alert set off due to irrigation water entering well vault. Water was pumped out and well was restarted.	Not Required
May 29	71A	8 hours	Low flow alert.	Pump failed. Pump was replaced and well was restarted.	Not Required
June 4	Treatment System	8 hours	Planned manual shutdown.	System was shut down as a safety precaution for redevelopment construction work near the treatment system. System was restarted.	Not Required
June 4 - 5	Treatment System	17 hours	System would not restart after previous manual shutdown.	Pump controls lost power. Power was restored and the system was restarted.	Not Required
June 5	Treatment System RW-23A	2 hours	Vault high level alert.	The alert was caused by the redevelopment construction work near the vault. System was restarted.	Not Required
June 7 - 8	Treatment System RW-10(B1)	19 hours	Multiple alerts.	Alert caused by redevelopment construction work near vault. Water was pumped out of vault, and system was restarted.	Not Required
June 10 - 11	Treatment System RW-2(B1)	30 hours	Vault high level alert.	Alert caused by redevelopment construction work near vault. Water was pumped out of vault and system was restarted.	Not Required
June 29	Treatment System RW-12A	<1 hour	Vault high level alert.	Irrigation water was seeping into the vault. Water was pumped out, and system was restarted. Prior to site redevelopment construction, the area around this vault was paved with asphalt. Now, it is in a landscaped bed that is covered with sod. Additional waterproofing will be installed on the vault after the redevelopment landscaping activities are completed.	Not Required
July 27 - 29	RW-23A	59 hours	Pump fault alert.	Pump saver was reset and well was restarted.	Not Required
August 5 - 6	Treatment System	<1 hour	Multiple alerts.	Alerts were caused by a power glitch. System was restarted.	Not Required
August 10	Treatment System LDV-12	1 hour	Leak detect vault high level alert.	Water was removed from the containment pipe. System was restarted.	Not Required
August 16	RW-23A	2 hours	Multiple low flow alerts.	Paddle wheel and axle replaced. Well was restarted.	Not Required
August 16	Treatment System	1 hour	Planned manual shutdown.	System was shut down to troubleshoot RW-23A. System was restarted.	Not Required
August 16 - 17	RW-2(B2)	20 hours	Well cycled off with no alert.	Well was restarted.	Not Required
September 5	RW-11A	<1 hour	Low flow alert.	Flow meter fouled. Flow meter was cleaned and well was restarted.	Not Required
September 23 - 26	RW-12A	69 hours	Multiple alerts.	Pump was failing. The pump was scheduled to be replaced on October 5, 2012. Well was restarted multiple times.	Not Required
October 4	RW-1(B2)	1 hour	Pump fault alert.	Motor contactor tripped. The contactor was reset, the pump saver was reprogrammed, and the well was restarted.	Not Required
October 5	RW-12A	2 hours	Planned manual shutdown.	Well was shut down for a pump replacement. Well was restarted.	Not Required
October 17	Treatment System RW-2(B1)	8 hours	Vault high level alert.	Alert set off by irrigation water. Water was pumped out and system was restarted.	Not Required
October 24	RW-1(B2)	<1 hour	Low flow alert.	Well was restarted.	Not Required
November 3	RW-1(B2)	12 hours	Low flow alert.	Pump saver was reset, and well was restarted.	Not Required
November 19 - 21	RW-1A	47 hours	Well cycled off with no alert.	Pump saver was reprogrammed and well was restarted.	Not Required
November 30	Treatment System RW-29A	4 hours	Vault high level alert.	Alert was triggered by rain. Water was pumped out and the system was restarted.	Not Required
November 30 - December 4	71A	93 hours	Well cycled off with no alert.	Wires in the underground conduit were damaged. The damaged wires were replaced, wire splices were repaired, and the well was restarted.	EPA notification was made on December 4, 2012
November 30 - December 5	RW-23A	114 hours	Well cycled off with no alert.	Wires in the underground conduit were damaged. The damaged wires were replaced, wire splices were repaired, and the well was restarted.	EPA notification was made on December 4, 2012
December 2	Treatment System RW-29A DW3-244 DW3-334	23 hours	Multiple vault high level alerts.	Alert was triggered by rain. The water drained from vaults and the system was restarted.	Not Required

Table 8

Summary of 2012 Non-Routine Maintenance and Operational Activities for System 19

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

Mountain View, California

2012	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
December 3	Treatment System	6 hours	Planned manual shutdown.	System was shut down to troubleshoot electrical issues. System was restarted.	Not Required
December 3 - 4	RW-12A	18 hours	Well did not restart after the previous planned manual shutdown.	Wires in the underground conduit were damaged. The damaged wires were replaced, wire splices were repaired, and the well was restarted.	Not Required
December 5	RW-1(B2)	2 hours	Pump fault alert.	Wires in the underground conduit were damaged. The damaged wires were repaired, and the well was restarted.	Not Required
December 5	Treatment System	4 hours	Planned manual shutdown.	System was shut down to pull new wires. System was restarted.	Not Required
December 11	Treatment System	1 hour	Planned manual shutdown.	System was shut down for routine maintenance on electrical system components. System was restarted.	Not Required
December 15 - 16	71A	10 hours	Multiple low flow alerts.	The pump saver was adjusted and well was restarted.	Not Required
December 19	71A	2 hours	Planned manual shutdown.	The well was shut down for a pump replacement. Well was restarted.	Not Required
December 23 - 24	Treatment System RW-29A	19 hours	Vault high level alert.	Alert was triggered by rain. Water was pumped out and the system was restarted.	Not Required
December 26 - 27	Treatment System LDV-02	11 hours	Leak detect vault high level alert.	Water was pumped out, wires were replaced, and the system was restarted.	Not Required
December 31	Treatment System	<1 hour	Planned manual shutdown.	The system was shut down for non-routine maintenance to repair a vault float switch. The system was restarted.	Not Required
December 31	71A	<1 hour	Low flow alert.	Well would not restart after the previous shut down. Flow meter was cleaned and 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.

EPA = U.S. Environmental Protection Agency

Well 65B3 was shut down with EPA approval on 19 September 2012.

Table 9

Groundwater Elevations, January through December 2012

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

Mountain View, California

Well ID	TOC Elevation (ft msl)	15 March 2012		20 September 2012	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
A Zone					
4A	54.69	14.50	40.19	15.27	39.42
6A	54.74	14.71	40.03	15.16	39.58
9A	55.82	15.87	39.95	16.72	39.10
12A	55.11	15.98	39.13	16.81	38.30
15A	54.06	15.15	38.91	15.86	38.20
16A	53.30	13.72	39.58	14.41	38.89
17A	53.40	14.57	38.83	15.22	38.18
22A	52.87	18.71	34.16	19.30	33.57
23A	50.56	16.30	34.26	16.90	33.66
71A	55.15	19.68	35.47	19.85	35.30
101A	55.14	14.21	40.93	14.87	40.27
115A	53.48	16.38	37.10	17.02	36.46
134A	53.44	15.03	38.41	15.75	37.69
139A	53.21	14.54	38.67	15.23	37.98
140A	56.99	13.10	43.89	13.61	43.38
141A	53.25	9.57	43.68	9.93	43.32
143A	55.72	15.75	39.97	16.47	39.25
148A	53.92	15.15	38.77	15.77	38.15
149A	51.90	17.78	34.12	18.36	33.54
154A	53.90	19.43	34.47	19.99	33.91
155A	54.17	15.59	38.58	16.26	37.91
159A	54.62	15.92	38.70	16.71	37.91
160A	53.89	19.61	34.28	20.22	33.67
161A	56.15	16.33	39.82	17.07	39.08
174A	53.70	15.18	38.52	15.87	37.83
175A	53.86	19.21	34.65	19.80	34.06
RW-1A	53.71	21.72	31.99	29.10	24.61
RW-2A	49.42	16.06	33.36	16.84	32.58
RW-11A	54.87	16.18	38.69	17.16	37.71
RW-12A	53.96	14.92	39.04	15.72	38.24
RW-23A	52.75	19.28	33.47	20.50	32.25
RW-24A	50.15	17.64	32.51	17.85	32.30
RW-26A	53.51	13.39	40.12	14.18	39.33
RW-29A	48.18	28.57	19.61	24.14	24.04
B1 Zone					
93B1	55.27	12.72	42.55	13.61	41.66
95B1	56.95	14.67	42.28	15.51	41.44
101B1	54.92	12.54	42.38	13.36	41.56
110B1	53.68	14.88	38.80	15.65	38.03
117B1	53.80	15.35	38.45	17.22	36.58
145B1	54.00	15.55	38.45	16.10	37.90
156B1	50.91	12.72	38.19	13.41	37.50
RW-1(B1)	52.40	14.51	37.89	15.25	37.15
RW-2(B1) (RGRP)	48.18	12.49	35.69	13.12	35.06
RW-10(B1)	52.40	21.01	31.39	22.49	29.91
RW-11(B1)	50.43	18.07	32.36	18.88	31.55

Table 9

Groundwater Elevations, January through December 2012

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

Mountain View, California

Well ID	TOC Elevation (ft msl)	15 March 2012		20 September 2012	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
B2 Zone					
40B2 (RGRP)	54.59	30.60	23.99	30.68	23.91
90B2	54.18	11.49	42.69	12.73	41.45
146B2	53.58	17.83	35.75	18.35	35.23
RW-1(B2)	53.49	70.11	-16.62	72.00	-18.51
RW-2(B2)	48.95	22.35	26.60	21.12	27.83

Notes:
BTOC = Below Top of Casing
ft msl = Feet Mean Sea Level
TOC = Top of Casing
(RGRP) = Regional Groundwater Remediation Program Well

Table 10

Groundwater Elevations, Slurry Wall Well Pairs, January 2008 through December 2012

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 msl)	Difference	Flow Direction
Southern Wall - Upgradient Well Pairs						
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	41.94	101A	30.84	11.10	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
3/15/2012	140A	43.89	101A	40.93	2.96	Inward
5/24/2012	140A	44.04	101A	40.99	3.05	Inward
9/20/2012	140A	43.38	101A	40.27	3.11	Inward
11/21/2012	140A	43.00	101A	39.90	3.10	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	29.99	143A	36.76	-6.77	Outward
9/15/2011	142A	45.08	143A	40.66	4.42	Inward
11/10/2011	142A	44.79	143A	40.21	4.58	Inward
3/15/2012	142A	44.56	143A	39.97	4.59	Inward
5/24/2012	142A	44.67	143A	40.37	4.30	Inward
9/20/2012	142A	43.96	143A	39.25	4.71	Inward
11/21/2012	142A	43.61	143A	38.56	5.05	Inward
Western Wall - Crossgradient Well Pairs						
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

Table 10

Groundwater Elevations, Slurry Wall Well Pairs, January 2008 through December 2012

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 msl)	Difference	Flow Direction
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	26.60	159A	39.60	-13.00	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
3/15/2012	17A	38.83	159A	38.70	0.13	Inward
5/24/2012	17A	38.85	159A	38.74	0.11	Inward
9/20/2012	17A	38.18	159A	37.91	0.27	Inward
11/21/2012	17A	37.89	159A	37.63	0.26	Inward
Eastern Wall - Crossgradient Well Pairs						
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	30.64	139A	40.72	-10.08	Outward
9/15/2011	141A	47.09	139A	39.46	7.63	Inward
11/10/2011	141A	43.92	139A	38.93	4.99	Inward
3/15/2012	141A	43.68	139A	38.67	5.01	Inward
5/24/2012	141A	43.80	139A	38.81	4.99	Inward
9/20/2012	141A	43.32	139A	37.98	5.34	Inward
11/21/2012	141A	43.01	139A	37.19	5.82	Inward
Northern Wall - Downgradient Well Pairs						
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
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

Table 10

Groundwater Elevations, Slurry Wall Well Pairs, January 2008 through December 2012

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 msl)	Difference	Flow Direction
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	28.41	134A	25.31	3.10	Inward
9/15/2011	115A	37.55	134A	39.14	-1.59	Outward
11/10/2011	115A	37.27	134A	38.72	-1.45	Outward
3/15/2012	115A	37.10	134A	38.41	-1.31	Outward
5/24/2012	115A	37.12	134A	38.52	-1.40	Outward
9/20/2012	115A	36.46	134A	37.69	-1.23	Outward
11/21/2012	115A	36.17	134A	37.21	-1.04	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	33.77	155A	39.21	-5.44	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
3/15/2012	154A	34.47	155A	38.58	-4.11	Outward
5/24/2012	154A	34.60	155A	38.72	-4.12	Outward
9/20/2012	154A	33.91	155A	37.91	-4.00	Outward
11/21/2012	154A	33.65	155A	37.13	-3.48	Outward
Vertical Gradient Well Pairs						
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
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

Table 10

Groundwater Elevations, Slurry Wall Well Pairs, January 2008 through December 2012

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 msl)	Difference	Flow Direction
5/26/2011	110B1	30.02	134A	25.31	4.71	Upward
9/15/2011	110B1	39.32	134A	39.14	0.18	Upward
11/10/2011	110B1	38.98	134A	38.72	0.26	Upward
3/15/2012	110B1	38.80	134A	38.41	0.39	Upward
5/24/2012	110B1	38.97	134A	38.52	0.45	Upward
9/20/2012	110B1	38.03	134A	37.69	0.34	Upward
11/21/2012	110B1	37.65	134A	37.21	0.44	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	27.70	12A	28.84	-1.14	Downward
9/15/2011	117B1	39.04	12A	39.77	-0.73	Downward
11/10/2011	117B1	38.70	12A	39.33	-0.63	Downward
3/15/2012	117B1	38.45	12A	39.13	-0.68	Downward
5/24/2012	117B1	38.60	12A	39.22	-0.62	Downward
9/20/2012	117B1	36.58	12A	38.30	-1.72	Downward
11/21/2012	117B1	36.15	12A	38.68	-2.53	Downward
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	32.18	101A	30.84	1.34	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
3/15/2012	93B1	42.55	101A	40.93	1.62	Upward
5/24/2012	93B1	42.67	101A	40.99	1.68	Upward
9/20/2012	93B1	41.66	101A	40.27	1.39	Upward

Table 10

Groundwater Elevations, Slurry Wall Well Pairs, January 2008 through December 2012

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 msl)	Difference	Flow Direction
11/21/2012	93B1	41.25	101A	39.90	1.35	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	31.02	15A	26.83	4.19	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
3/15/2012	98B1	40.38	15A	38.91	1.47	Upward
5/24/2012	98B1	40.55	15A	39.01	1.54	Upward
9/20/2012	98B1	39.43	15A	38.20	1.23	Upward
11/21/2012	98B1	39.21	15A	37.46	1.75	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)	29.84	159A	39.60	-9.76	Downward
9/15/2011	RW-1(B1)	39.93	159A	39.50	0.43	Upward
11/10/2011	RW-1(B1)	37.99	159A	39.04	-1.05	Downward
3/15/2012	RW-1(B1)	37.89	159A	38.70	-0.81	Downward
5/24/2012	RW-1(B1)	38.05	159A	38.74	-0.69	Downward
9/20/2012	RW-1(B1)	37.15	159A	37.91	-0.76	Downward
11/21/2012	RW-1(B1)	36.74	159A	37.63	-0.89	Downward

Notes:
ft msl = Feet Mean Sea Level

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, California

Parameter	A Zone[1]	A Zone Slurry Wall[2]	B1 Zone[1]	B2 Zone[1]
Q = Combined pumping rate (gpm)	13.1	35.7	28.6	13.0
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)	1100	2900	1800	3600
Measured plume width at widest point (ft)[4]	662	630	662	662

Notes:

1. The combined pumping rate equals the summed average 2012 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 2012 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 2008 through December 2012
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 Zone													
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**
4A	10/23/2012	<1.0	**60**	<0.50	**91**	**1200**	**5.5**	**49**	<5.0	<0.50	**14**	**4400**	**36**
6A	9/24/2012	<1.0	**2.5**	<0.50	**10**	**64**	**0.70**	<0.50	<5.0	<0.50	<0.50	**290**	<0.50
9A	9/21/2012	<1.0	**6.2**	<0.50	**5.0**	**310**	**1.2**	<0.50	<5.0	<0.50	<0.50	**10**	**13**
12A	10/4/2012	<1.0	**5.9**	<0.50	**5.6**	**1700**	**23**	**11**	<5.0	**1.1**	**0.81**	**2000**	**37**
15A	9/24/2012	<1.0	**2.5**	<0.50	**1.6**	**21**	**0.56**	**0.55**	<5.0	<0.50	<0.50	**71**	<0.50
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
16A	9/24/2012	<1.0	<0.50	<0.50	<0.50	**1.5**	<0.50	<0.50	<5.0	<0.50	<0.50	**43**	<0.50
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
17A	9/24/2012	<1.0	<0.50	<0.50	<0.50	**4.9**	<0.50	<0.50	<5.0	<0.50	<0.50	**76**	<0.50
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
22A	10/19/2012	<1.0	**1.2**	<0.50	**1.6**	**25**	**0.56**	**97**	<5.0	<0.50	**1.3**	**120**	<0.50
22A D	10/19/2012	<1.0	**1.1**	<0.50	**1.5**	**23**	**0.52**	**90**	<5.0	<0.50	**1.3**	**120**	<0.50
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

Table 12
VOC Analytical Results
Five Year Summary, January 2008 through December 2012
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 Zone													
23A	10/19/2012	<1.0	**2.0**	<0.50	**2.4**	**50**	**0.55**	**3.0**	<5.0	<0.50	<0.50	**29**	<0.50
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**
71A	9/25/2012	**2.3**	**3.8**	<0.50	**11**	**340**	**12**	**32**	<5.0	<0.50	**6.0**	**1900**	**27**
101A	9/25/2012	<1.0	<0.50	<0.50	<0.50	**16**	<0.50	**0.50**	<5.0	<0.50	<0.50	**52**	<0.50
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
115A	10/24/2012	<1.0	**6.7**	<0.50	**4.2**	**360**	**1.8**	**1.7**	<5.0	<0.50	<0.50	**5.1**	**1.3**
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
134A	10/4/2012	<1.0	**2.2**	<0.50	**2.6**	**9.8**	<0.50	**10**	<5.0	<0.50	**3.7**	**46**	<0.50
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
139A	9/21/2012	<1.0	**1.8**	<0.50	**1.3**	**11**	<0.50	**0.53**	<5.0	<0.50	<0.50	**49**	<0.50
140A	6/22/2012	**5.4**	**0.3**	<0.5	<0.5	**8.5**	<0.5	**0.4**	<2.0	**0.2**	<0.5	**78**	<0.5
140A D	6/22/2012	**5.5**	**0.4**	<0.5	<0.5	**9.1**	<0.5	**0.4**	<2.0	**0.3**	<0.5	**80**	<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
141A	9/21/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	**0.78**	**38**	<0.50
143A	9/21/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	**6.3**	<5.0	<0.50	<0.50	**4.1**	<0.50
148A	10/4/2012	<1.0	**6.4**	<0.50	**16**	**1200**	**7.9**	**34**	<5.0	**0.58**	**9.2**	**2400**	**29**
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**

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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 Zone													
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
149A	9/24/2012	<1.0	<0.50	<0.50	**0.71**	**4.8**	<0.50	**1.8**	<5.0	<0.50	**0.77**	**89**	<0.50
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**
154A	9/27/2011	<5.0	**3.0**	<2.5	**4.6**	**100**	<2.5	**13**	<10	<2.5	**4.8**	**300**	<2.5
154A	10/4/2012	<1.0	**4.2**	<0.50	**5.8**	**180**	**1.7**	**15**	<5.0	<0.50	**4.8**	**340**	**3.1**
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
155A	10/4/2012	<1.0	**28**	<0.50	**14**	**49**	<0.50	**21**	<5.0	**1.2**	**29**	**330**	<0.50
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
159A	10/4/2012	<1.0	<0.50	<0.50	**0.87**	**10**	**2.3**	**1.1**	<5.0	<0.50	<0.50	**370**	<0.50
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
160A	10/23/2012	<1.0	**11**	<0.50	**10**	**420**	**3.3**	**270**	<5.0	<0.50	**6.2**	**560**	**0.84**
161A	9/25/2012	<1.0	**0.83**	<0.50	**16**	**8800**	**1200**	**86**	<5.0	<0.50	**1.1**	**4600**	**15**
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
174A	10/24/2012	<1.0	**39**	<0.50	**15**	**58**	**0.78**	**26**	<5.0	**1.9**	**16**	**340**	<0.50
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

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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 Zone													
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
175A	10/15/2012	<1.0	**3.3**	<0.50	**1.9**	**19**	<0.50	**1.5**	<5.0	<0.50	**0.83**	**87**	<0.50
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
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-1A	10/4/2012	**1.0**	<0.50	<0.50	<0.50	**7.0**	**2.7**	**0.67**	<5.0	<0.50	<0.50	**110**	<0.50
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-2A	9/26/2012	<1.0	**1.3**	<0.50	**2.8**	**90**	**0.82**	**8.8**	<5.0	<0.50	**2.4**	**290**	<0.50
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 D	12/7/2010	<17	**20**	<8.3	**35**	**320**	<8.3	**110**	<33	<8.3	**21**	**1600**	**19**
RW-11A	12/7/2010	<14	**19**	<7.1	**34**	**310**	<7.1	**100**	<29	<7.1	**20**	**1600**	**17**
RW-11A D	9/16/2011	<25	**18**	<13	**33**	**260**	<13	**100**	<50	<13	**25**	**1600**	**14**
RW-11A	9/16/2011	<33	<17	<17	**29**	**260**	<17	**100**	<67	<17	**28**	**1600**	<17
RW-11A	10/5/2012	<1.0	**18**	<0.50	**34**	**320**	**1.2**	**120**	<5.0	<0.50	**32**	**1600**	**12**
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-12A	10/5/2012	<1.0	**3.9**	<0.50	**10**	**5400**	**52**	**14**	<5.0	**1.6**	**1.7**	**2800**	**390**
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

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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 Zone													
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
RW-23A	10/5/2012	<1.0	**13**	<0.50	**8.1**	**100**	**1.4**	**14**	<5.0	**1.8**	**12**	**630**	<0.50
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-24A	9/25/2012	<1.0	**4.3**	<0.50	**5.9**	**410**	**4.3**	**16**	<5.0	<0.50	**3.3**	**360**	**3.4**
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-26A	10/25/2012	<1.0	**5.5**	<0.50	**14**	**130**	**0.92**	**7.2**	<5.0	<0.50	**3.4**	**260**	<0.50
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
RW-29A	9/24/2012	<1.0	**7.5**	<0.50	**3.3**	**14**	**1.3**	**3.9**	<5.0	**1.8**	**3.5**	**240**	<0.50
B1 Zone													
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
95B1	10/25/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	**9.0**	<0.50
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
101B1	10/15/2012	<1.0	**1.1**	<0.50	**0.75**	**37**	<0.50	<0.50	<5.0	<0.50	<0.50	**42**	<0.50
110B1	11/5/2008	<3.3	<1.7	<1.7	**2.1**	**17**	<1.7	**30**	<67	<1.7	**13**	**290**	<1.7

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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
B1 Zone													
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
110B1	10/4/2012	<1.0	**1.5**	<0.50	**5.9**	**9.2**	<0.50	**58**	<5.0	<0.50	**22**	**300**	<0.50
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
117B1	10/4/2012	<1.0	**0.68**	<0.50	<0.50	**330**	**3.1**	<0.50	<5.0	<0.50	<0.50	**100**	<0.50
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**
145B1	9/21/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**0.71**
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
156B1	10/23/2012	<1.0	**1.9**	<0.50	**0.98**	**39**	<0.50	<0.50	<5.0	<0.50	<0.50	**48**	<0.50
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-1(B1)	10/24/2012	<5.0	<2.5	<2.5	<2.5	**15**	<2.5	<2.5	<25	<2.5	<2.5	**11**	**13**
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
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-2(B1) (RGRP)	9/18/2012	<1.0	**1.2**	<0.50	**3.2**	**26**	<0.50	**37**	<5.0	<0.50	**18**	**270**	<0.50

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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
B1 Zone													
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-10(B1)	10/5/2012	<1.0	**1.5**	<0.50	**2.3**	**430**	**5.7**	**19**	<5.0	<0.50	**11**	**710**	<0.50
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
RW-11(B1)	9/24/2012	<1.0	**0.67**	<0.50	<0.50	**41**	**1.4**	<0.50	<5.0	<0.50	<0.50	**90**	<0.50
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
40B2 (RGRP)	10/4/2012	<1.0	<0.50	<0.50	<0.50	**61**	<0.50	**1.7**	<5.0	<0.50	<0.50	**8.5**	<0.50
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
90B2	10/23/2012	<1.0	<0.50	<0.50	**0.76**	**56**	**0.59**	<0.50	<5.0	<0.50	<0.50	**120**	<0.50
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
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
146B2	10/24/2012	<1.0	<0.50	<0.50	**0.62**	**300**	<0.50	<0.50	<5.0	<0.50	<0.50	**5.0**	<0.50
146B2 D	10/24/2012	<1.0	<0.50	<0.50	**0.57**	**300**	<0.50	<0.50	<5.0	<0.50	<0.50	**4.8**	<0.50

Table 12
VOC Analytical Results
Five Year Summary, January 2008 through December 2012
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													
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-1(B2)	10/4/2012	<1.0	<0.50	<0.50	<0.50	**40**	<0.50	**1.2**	<5.0	<0.50	<0.50	**51**	<0.50
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
RW-2(B2)	9/26/2012	<1.0	<0.50	<0.50	**3.0**	**11**	**1.9**	**2.4**	<5.0	<0.50	<0.50	**850**	<0.50

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 Well

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 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	D	NT
17A	PD	NT	NT
22A	D	NT	NT
23A	D	S	NT
71A	NT	NT	NT
101A	N/A	N/A	N/A
115A	NT	I	I
134A	D	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	PD	NT	NT
154A	I	I	NT
155A	S	S	NT
159A	NT	I	NT
160A	PI	PI	NT
161A	N/A	N/A	N/A
174A	NT	NT	NT
175A	D	S	NT
RW-1A	S	NT	NT

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

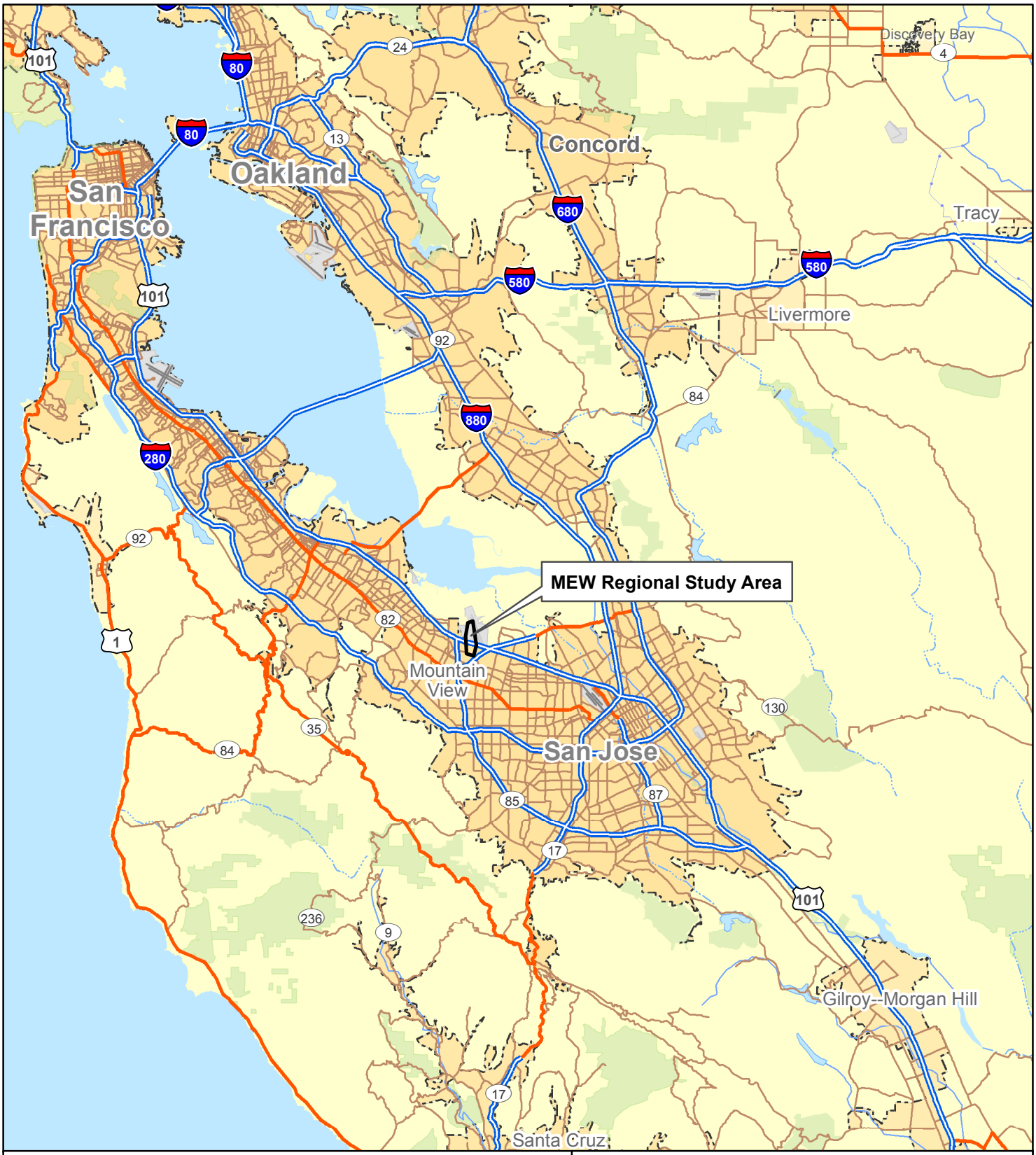
S = Stable

PD = Probably Decreasing

D = Decreasing

NT = No Trend

FIGURES



N

0 10 Miles

Site Location Map

MEW Area, Mountain View, California

Geosyntec consultants

Oakland	April 2013

Figure 1

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig01_Loc_Map.mxd

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

Geosyntec consultants

Oakland | April 2013

Figure 2

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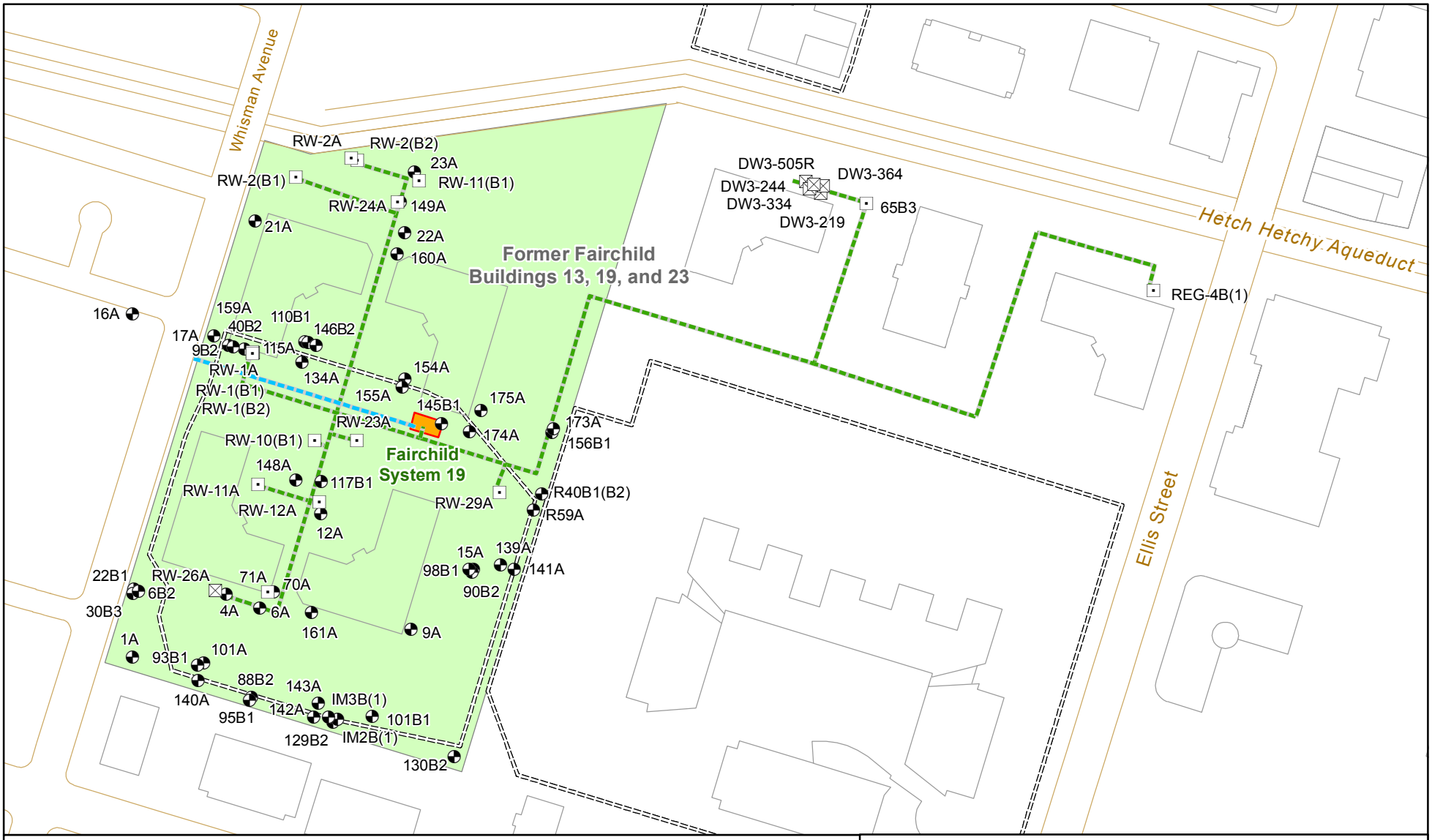


Site Map and Well Network

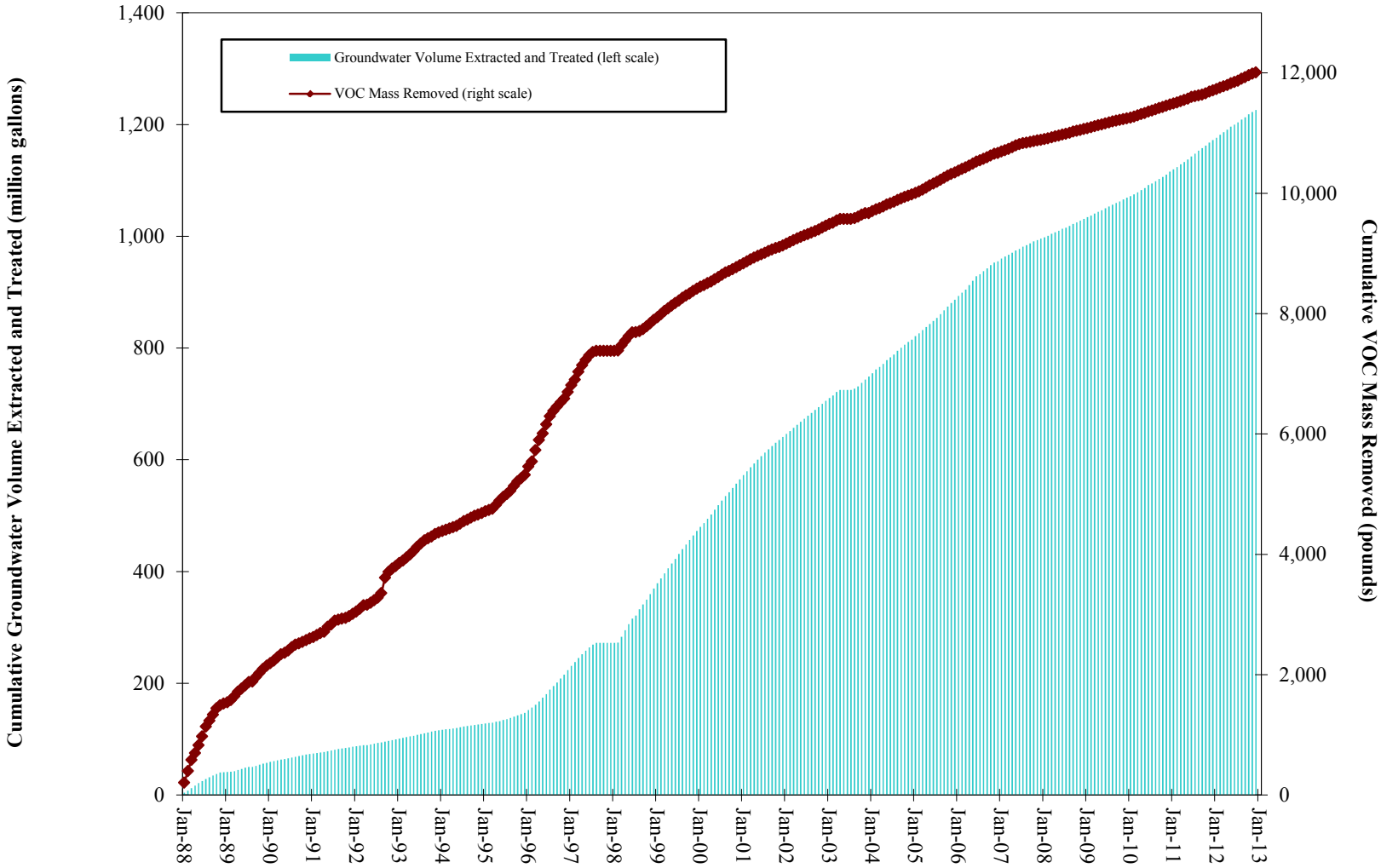
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 3

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig03_SiteMap.mxd



Abbreviation:
VOC = volatile organic compound

Source: Fourth Quarter and Annual 2012 Self-Monitoring Report, Treatment System 19 (Weiss, 2013a)

Cumulative Groundwater Extracted and VOC Mass Removed, System 19

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

Geosyntec consultants

Oakland | April 2013

Figure 4

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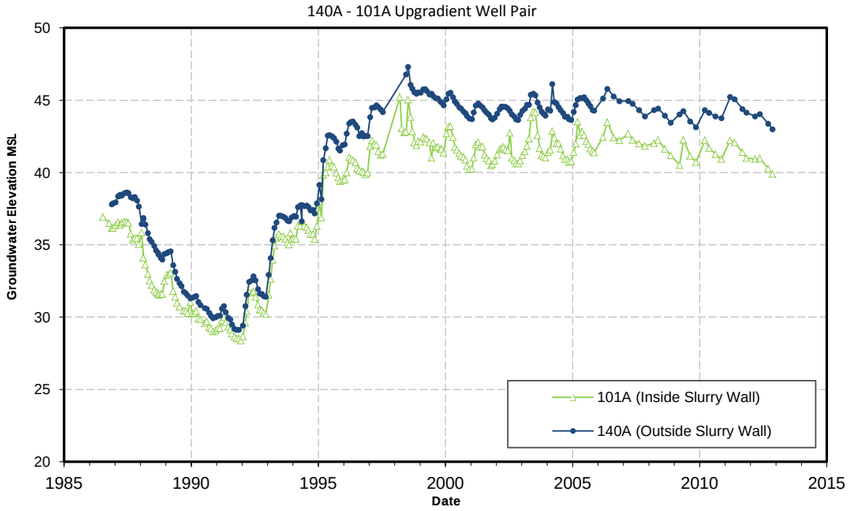
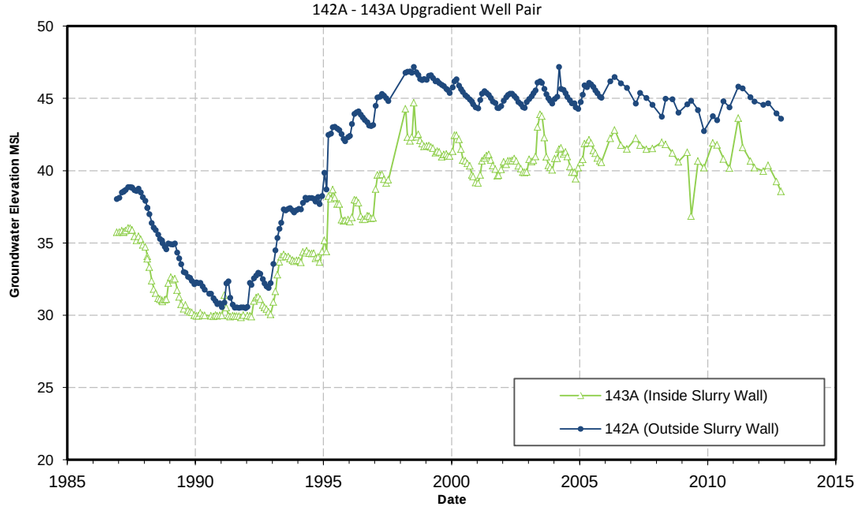
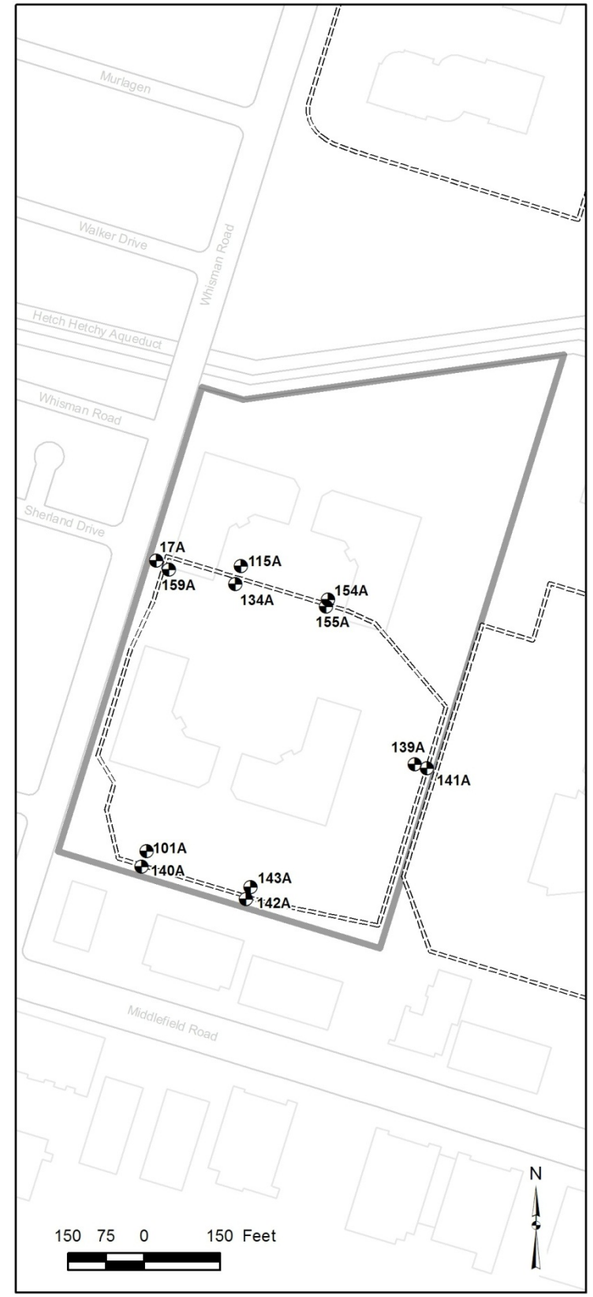
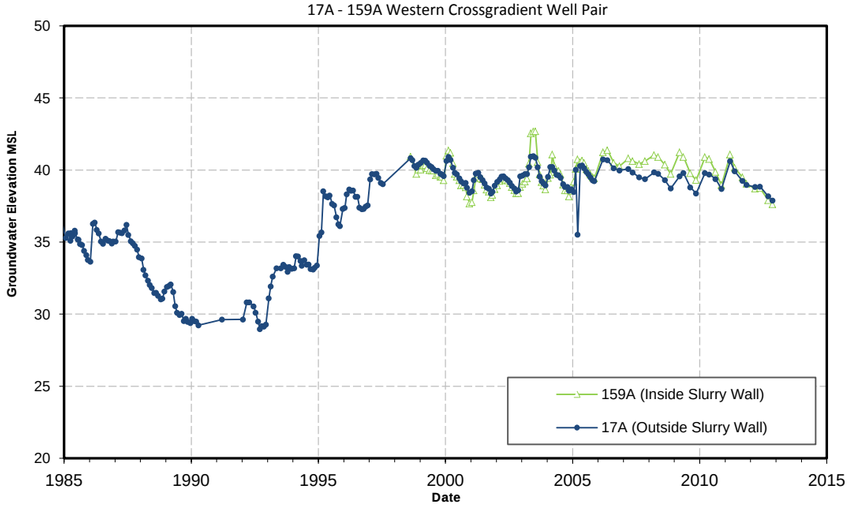
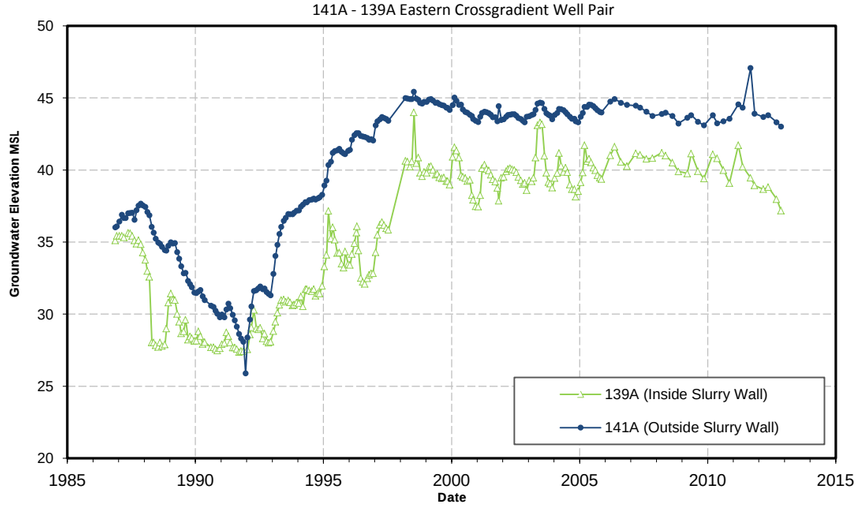
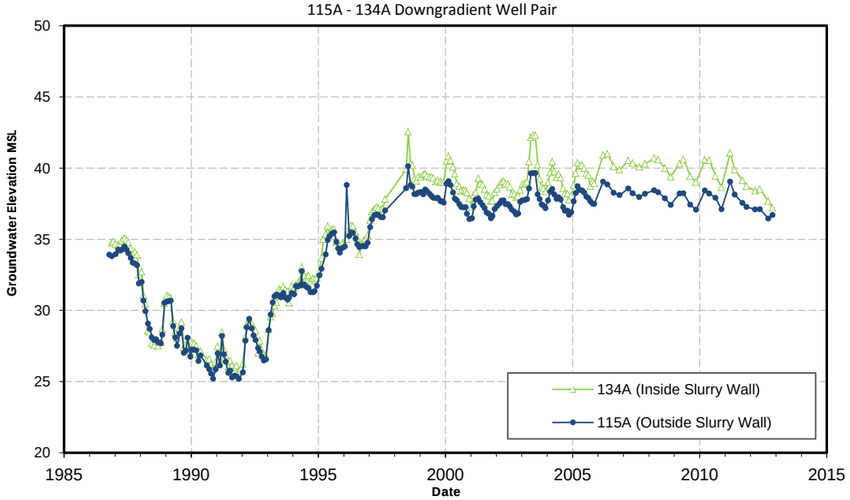


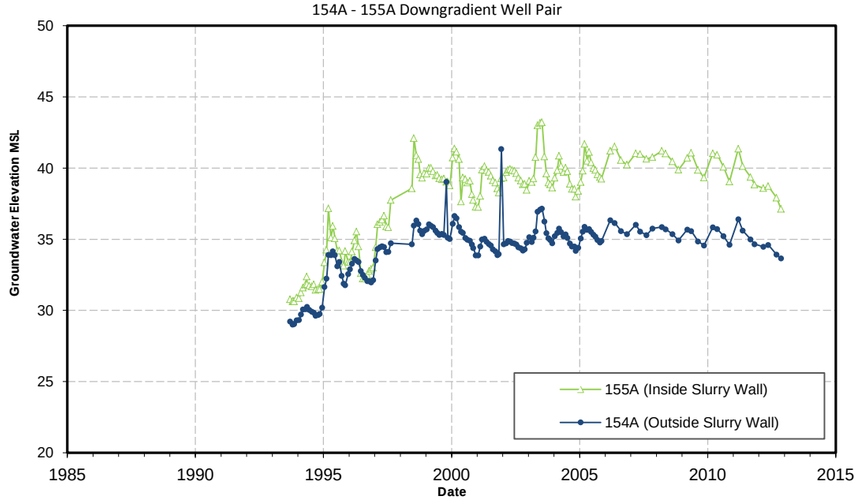












Hydrographs - Slurry Wall Well Pairs

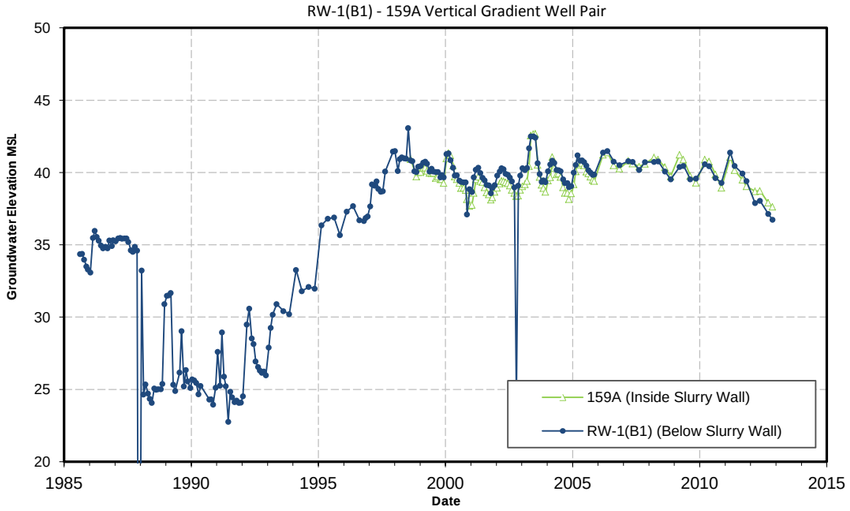
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

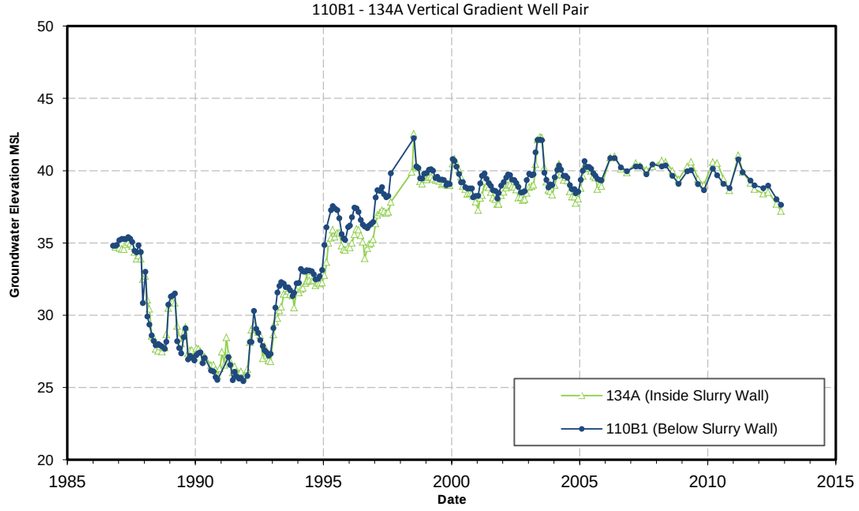
Geosyntec consultants

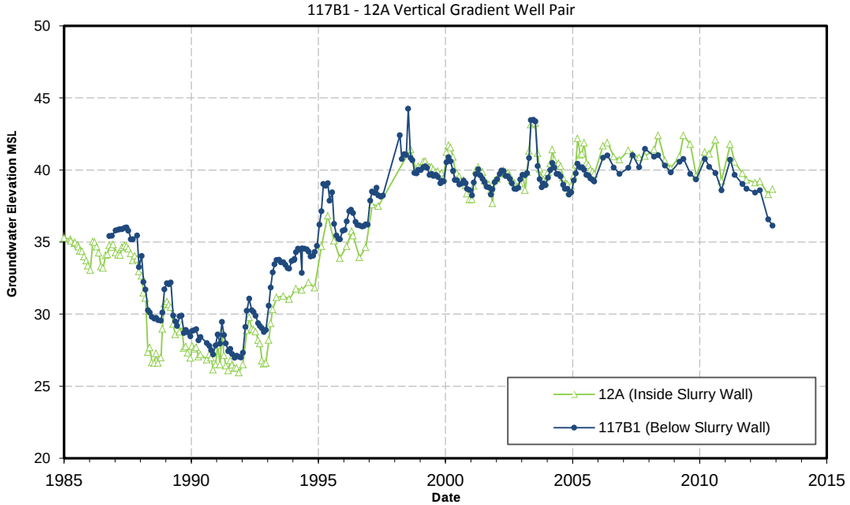
Oakland | April 2013

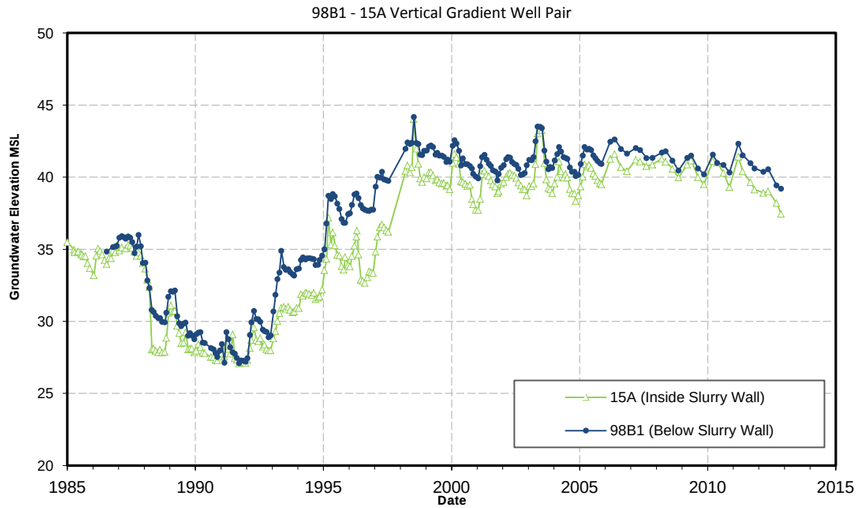
Figure 5

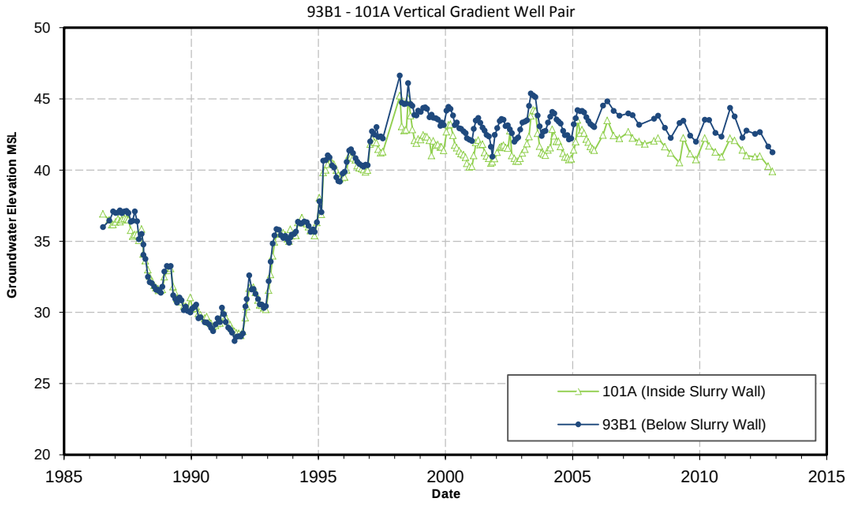
P:\GIS\MEW\Excel\Fairchild\Building19\Fig5and6_Hydrographs.xlsx

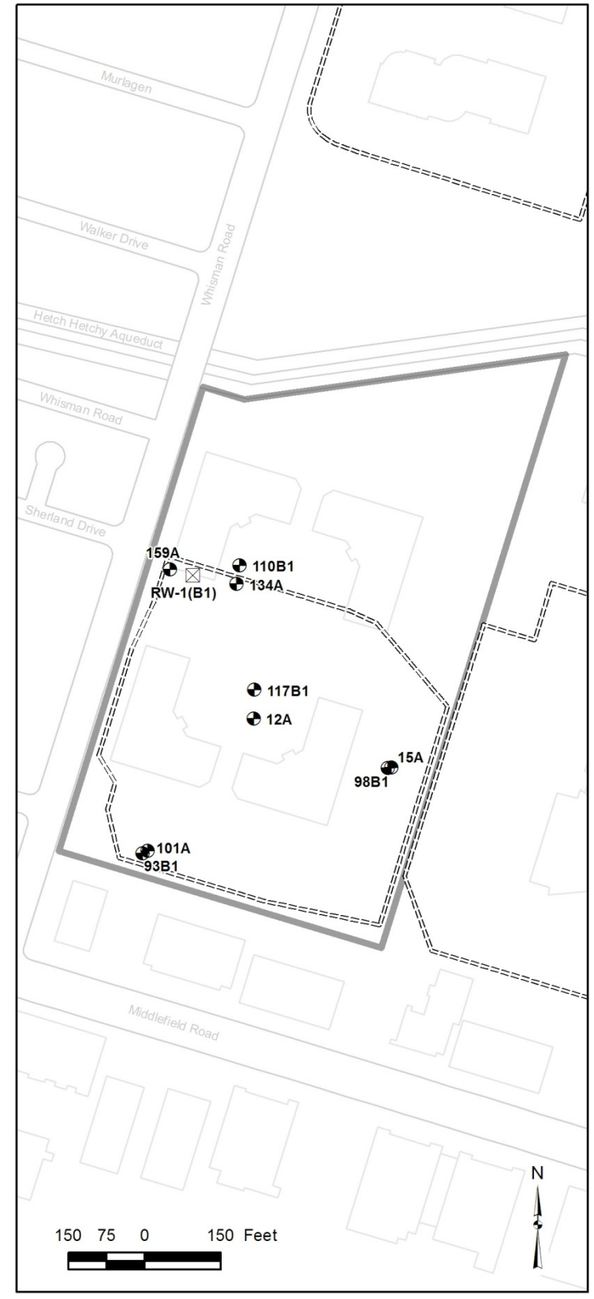












Hydrographs - Slurry Wall Well Pairs Across Water-Bearing Zones

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

Geosyntec consultants

Oakland | April 2013

Figure 6

P:\GIS\MEW\Excel\Fairchild\Building19\Fig5and6_Hydrographs.xlsx

Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
Whisman Road

RW-2A (9.4) 33.36
23A 34.26
RW-24A (4.5) 32.51
21A 36.21
149A 34.12
22A 34.16
160A 34.28
16A 39.58
17A 38.83
RW-1A (6.0) 31.99*
159A 38.70
115A 37.10
134A 38.41
154A 34.47
155A 38.58
175A 34.65
173A 36.48
174A 38.52
RW-23A (11.3) 33.47*
RW-11A (3.5) 38.69
148A 38.77
RW-12A (2.4) 39.04
12A 39.13
RW-29A (11.4) 19.61*
R59A 44.34
15A 38.91
139A 38.67
141A 43.68
RW-26A 40.12
71A (2.7) 35.47
70A 39.81
4A 40.19
6A 40.03
161A 39.82
9A 39.95
1A 43.50
101A 40.93
140A 43.89
143A 39.97
142A 44.56

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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
- Building
- Road
- Slurry Wall
- Site Boundary

71A (2.7) Well ID (Pumping Rate)
35.47 Groundwater Elevation (feet above mean sea level)
***** Groundwater Measurement Not Used in Contouring. (Water levels measured inside the casing of an extraction well are not used in contouring.)

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 Zone Groundwater Elevation Contours and Estimated Capture Zones 15 March 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 7

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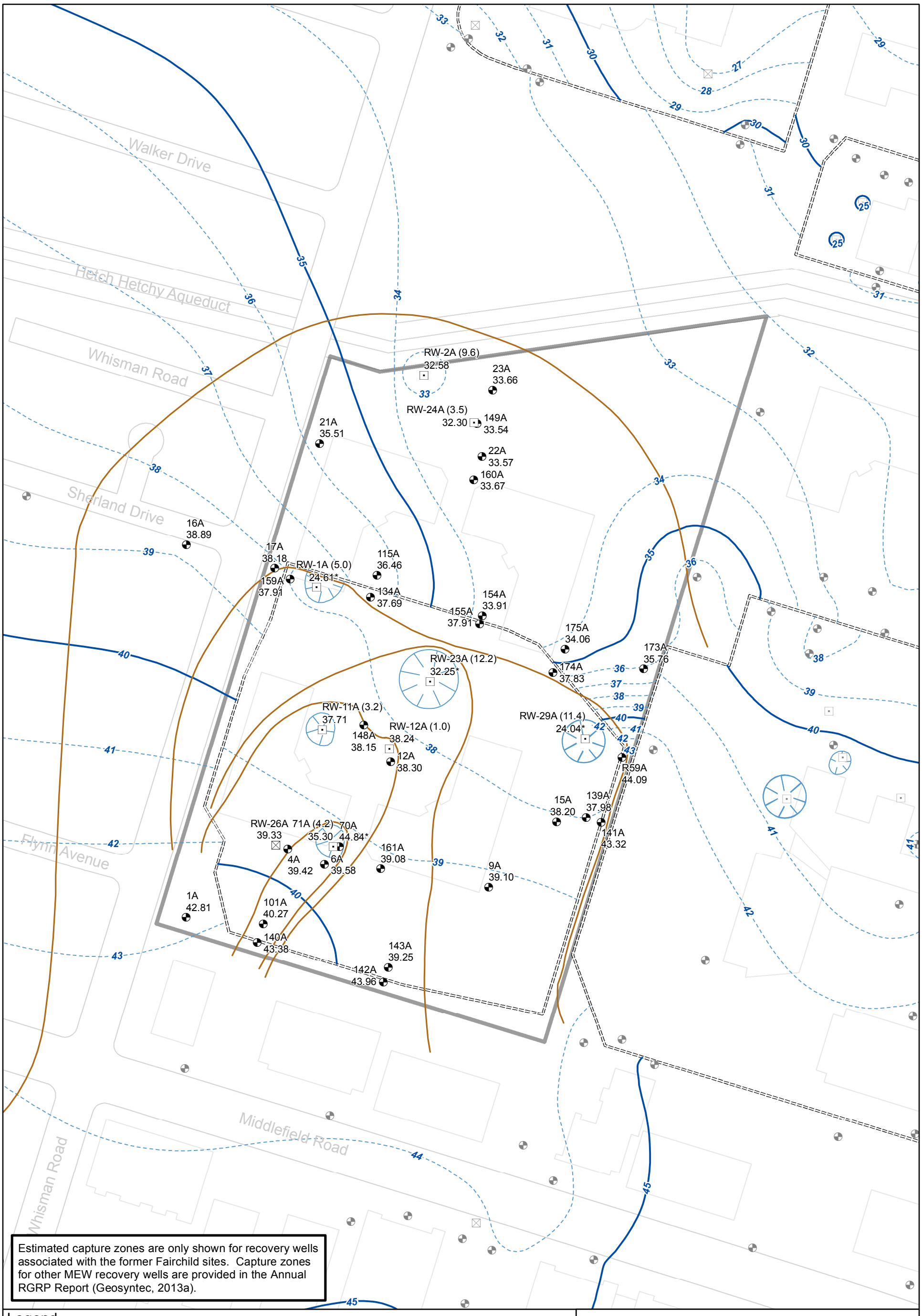
Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
Whisman Road
RW-2A (9.6)
32.58
23A
33.66
RW-24A (3.5)
32.30
149A
33.54
21A
35.51
22A
33.57
160A
33.67
16A
38.89
17A
38.18
RW-1A (5.0)
24.61*
159A
37.91
115A
36.46
134A
37.69
154A
33.91
155A
37.91
175A
34.06
173A
35.76
174A
37.83
RW-23A (12.2)
32.25*
RW-11A (3.2)
37.71
148A
38.15
RW-12A (1.0)
38.24
12A
38.30
RW-29A (11.4)
24.04*
R59A
44.09
15A
38.20
139A
37.98
141A
43.32
RW-26A
39.33
71A (4.2)
35.30
70A
44.84*
4A
39.42
6A
39.58
161A
39.08
9A
39.10
1A
42.81
101A
40.27
140A
43.38
143A
39.25
142A
43.96
Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).
Legend
Monitoring Well
Recovery Well On
Recovery Well Off
Groundwater Elevation: 1 ft Contours
Groundwater Elevation: 5 ft Contours
Closely Spaced Groundwater Contour
71A (4.2) Well ID (Pumping Rate)
35.30 Groundwater Elevation (feet above mean sea level)
* Groundwater Measurement Not Used in Contouring. (Water levels measured inside the casing of an extraction well are not used in contouring.)
Note:
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.
Estimated Capture Zone
Building
Road
Slurry Wall
Site Boundary
150 75 0 150 Feet
N
A Zone Groundwater Elevation Contours and Estimated Capture Zones 20 September 2012
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California
Geosyntec consultants
Oakland
April 2013
Figure 8
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Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Shetland Drive
Flynn Avenue
Middlefield Road
Whisman Road

RW-2(B1) (6.4)
35.69

RW-11(B1) (9.4)
32.36

110B1
38.80

RW-1(B1)
37.89*

145B1
38.45

RW-10(B1) (13.3)
31.39*

156B1
38.19

117B1
38.45

98B1
40.38

22B1
42.87

93B1
42.55

95B1
42.28

IM3B(1)
42.70

IM2B(1)
41.90

101B1
42.38

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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
- Building
- Road
- ==== Slurry Wall
- Site Boundary

RW-2(B1) (6.4) Well ID (Pumping Rate)
35.69 Groundwater Elevation (feet above mean sea level)
***** Groundwater Measurement Not Used in Contouring. (Water levels measured inside the casing of an extraction well are not used in contouring.)

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 Zone Groundwater Elevation Contours and Estimated Capture Zones 15 March 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 9

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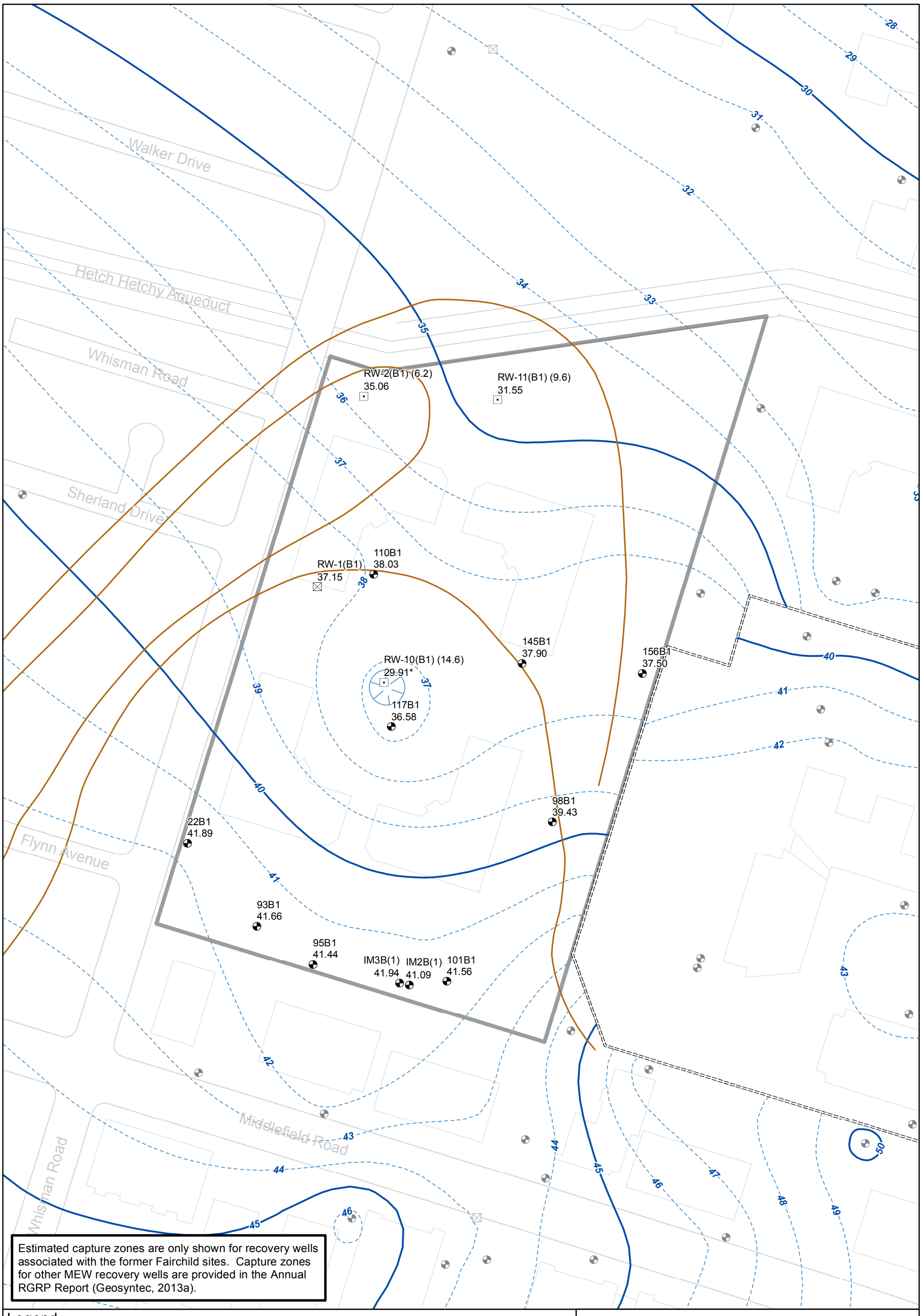


B1 Zone Groundwater Elevation Contours and Estimated Capture Zones 20 September 2012

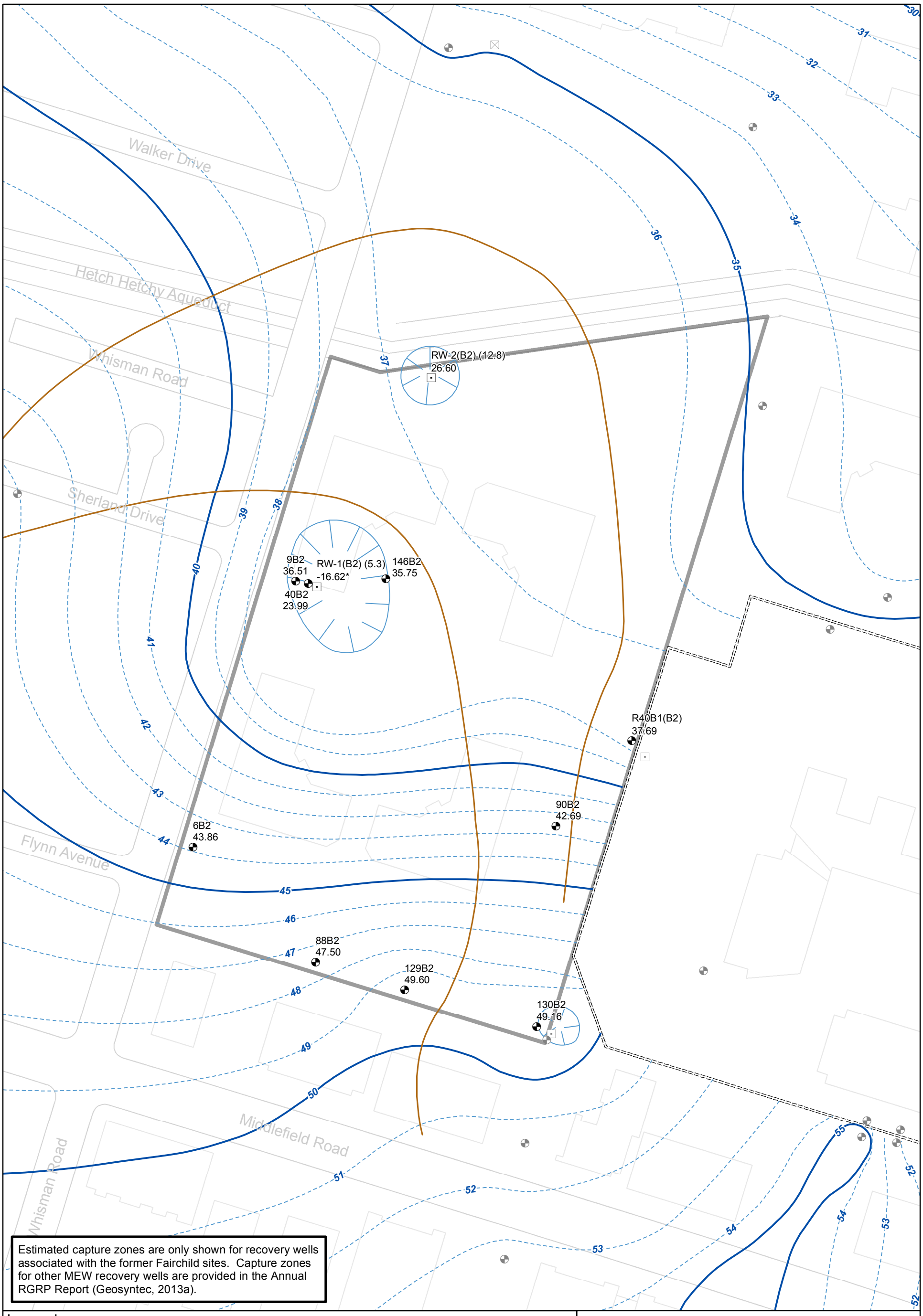
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 10

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig10_GW_B1_Sept2012.mxd | 4/9/2013 10:10:04 AM



B2 Zone Groundwater Elevation Contours and Estimated Capture Zones 15 March 2012

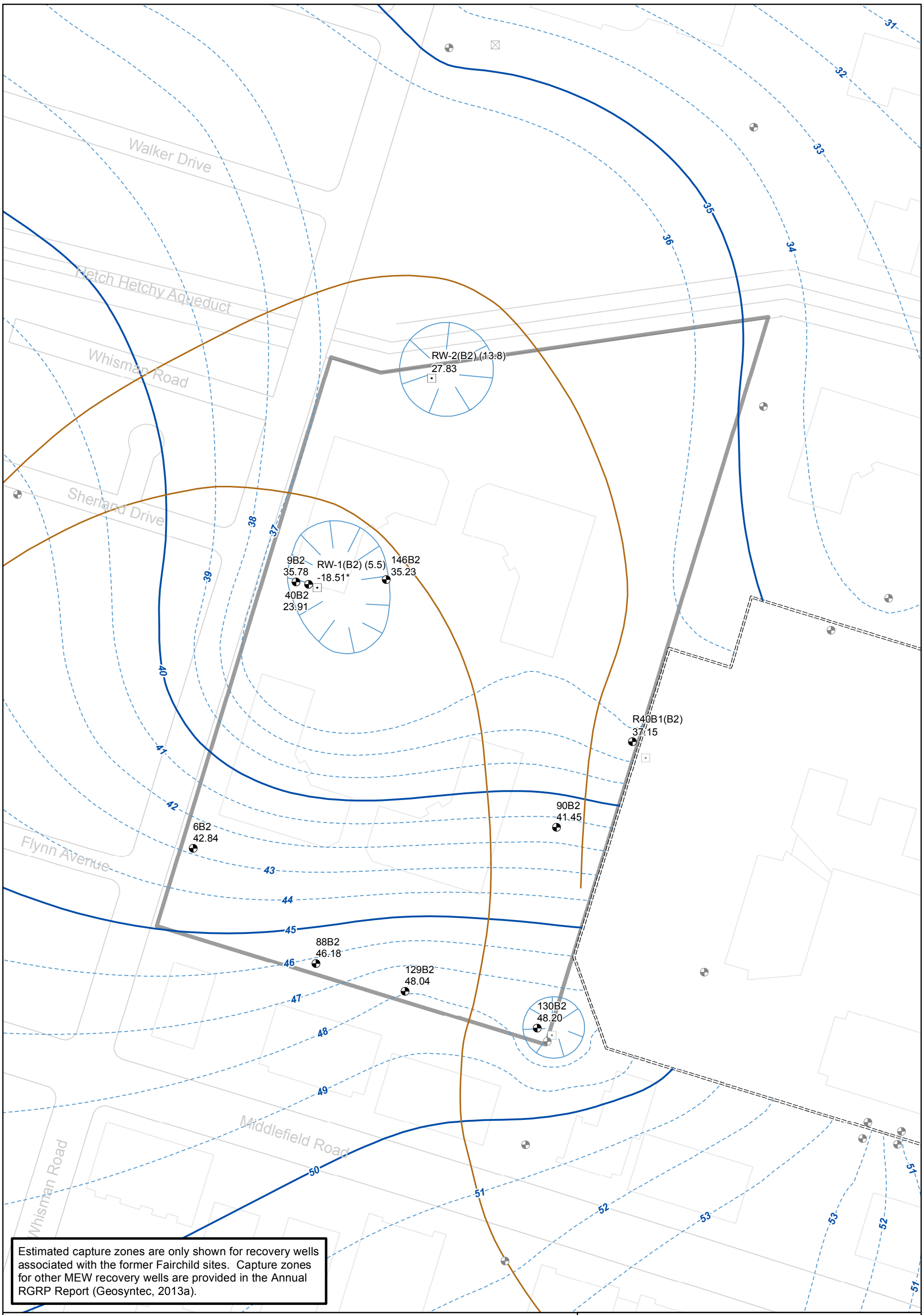
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 11

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig11_GW_B2_Mar2012.mxd | 4/9/2013 10:10:29 AM



B2 Zone Groundwater Elevation Contours and Estimated Capture Zones 20 September 2012

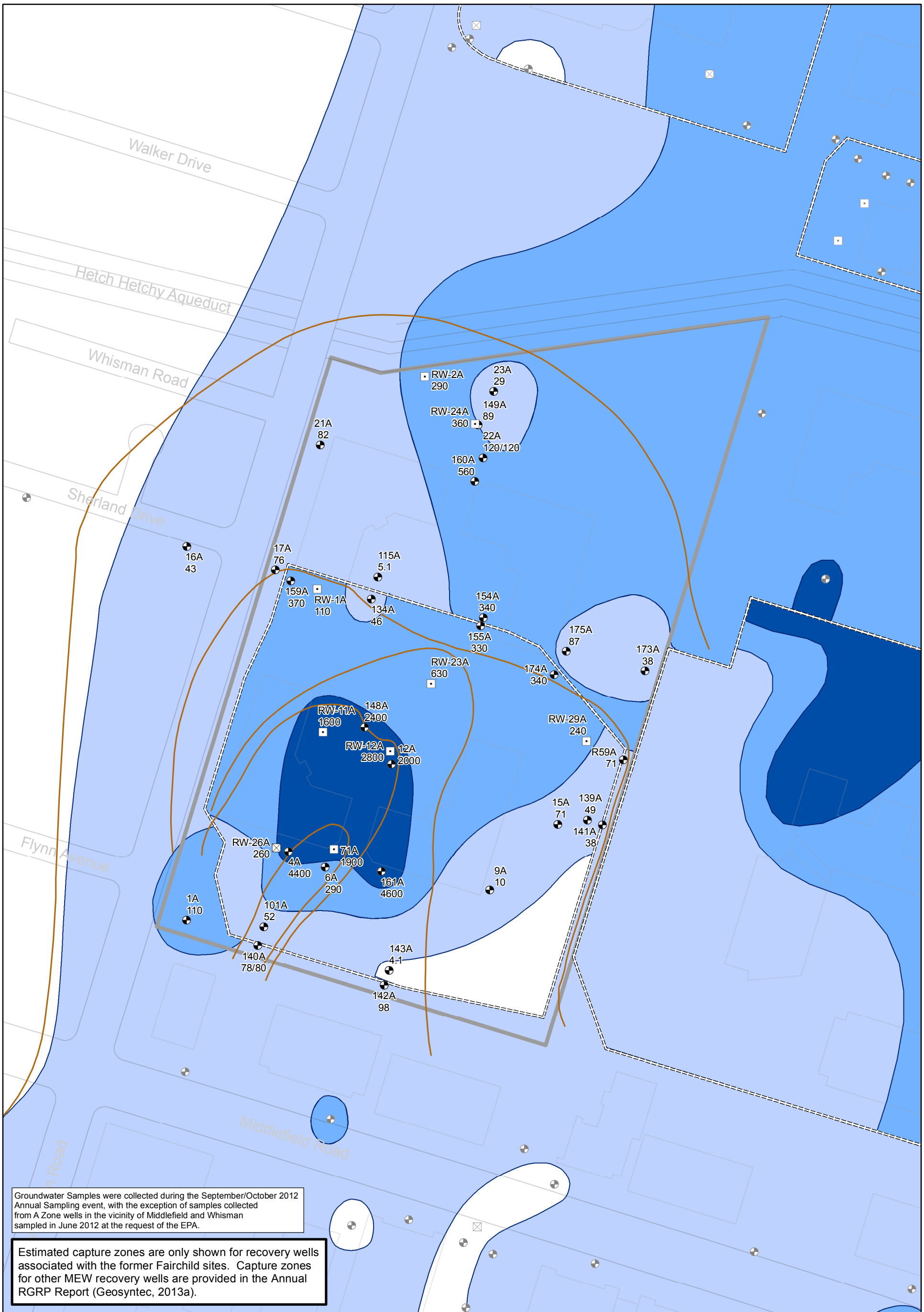
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 12

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig12_GW_B2_Sept2012.mxd | 4/9/2013 10:10:55 AM



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 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A Zone TCE Concentrations and Estimated Capture Zones September/October 2012

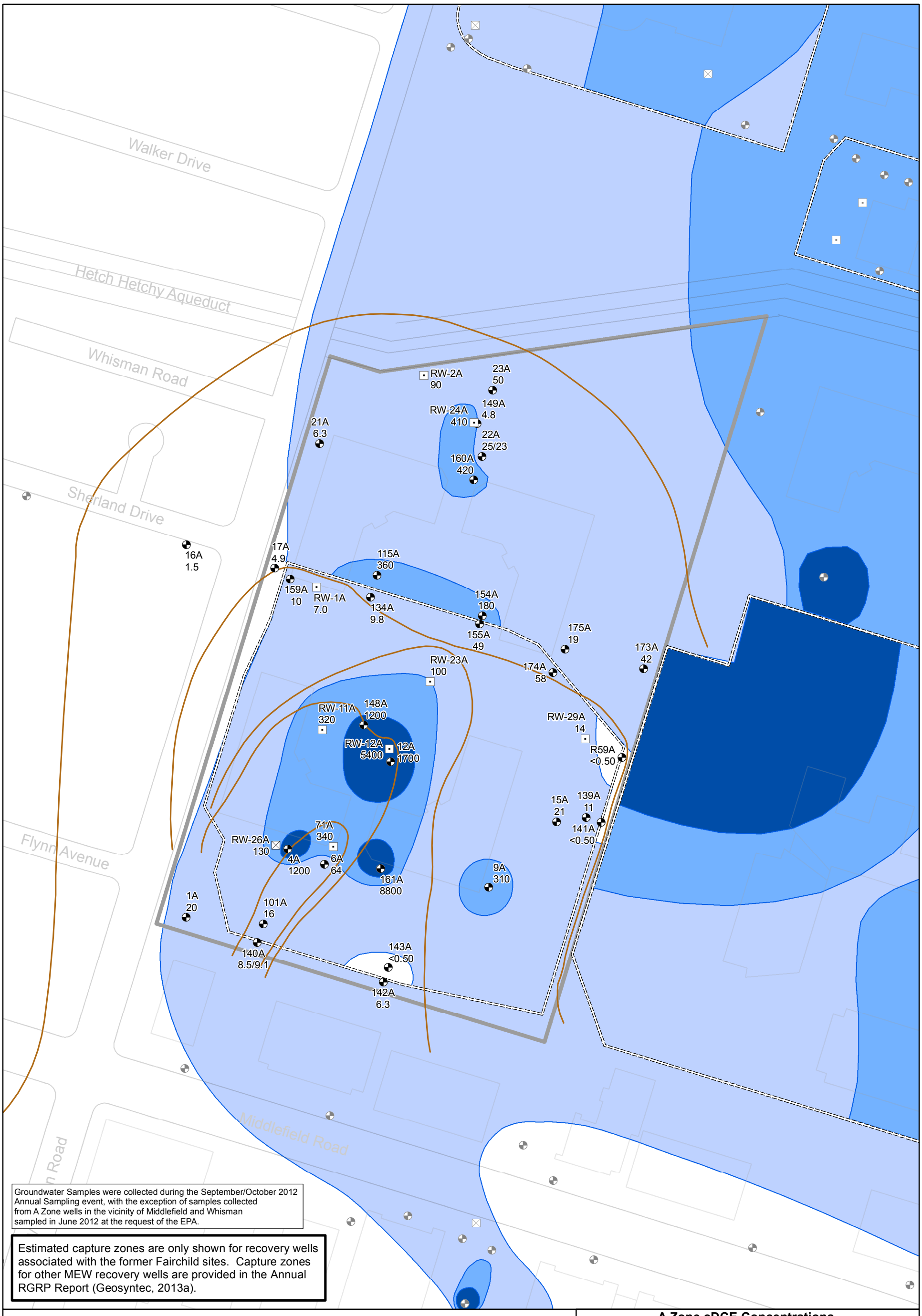
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 13

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig13_TCE_A_Sept2012_CZ.mxd | 4/9/2013 9:53:25 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 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A Zone cDCE Concentrations and Estimated Capture Zones September/October 2012

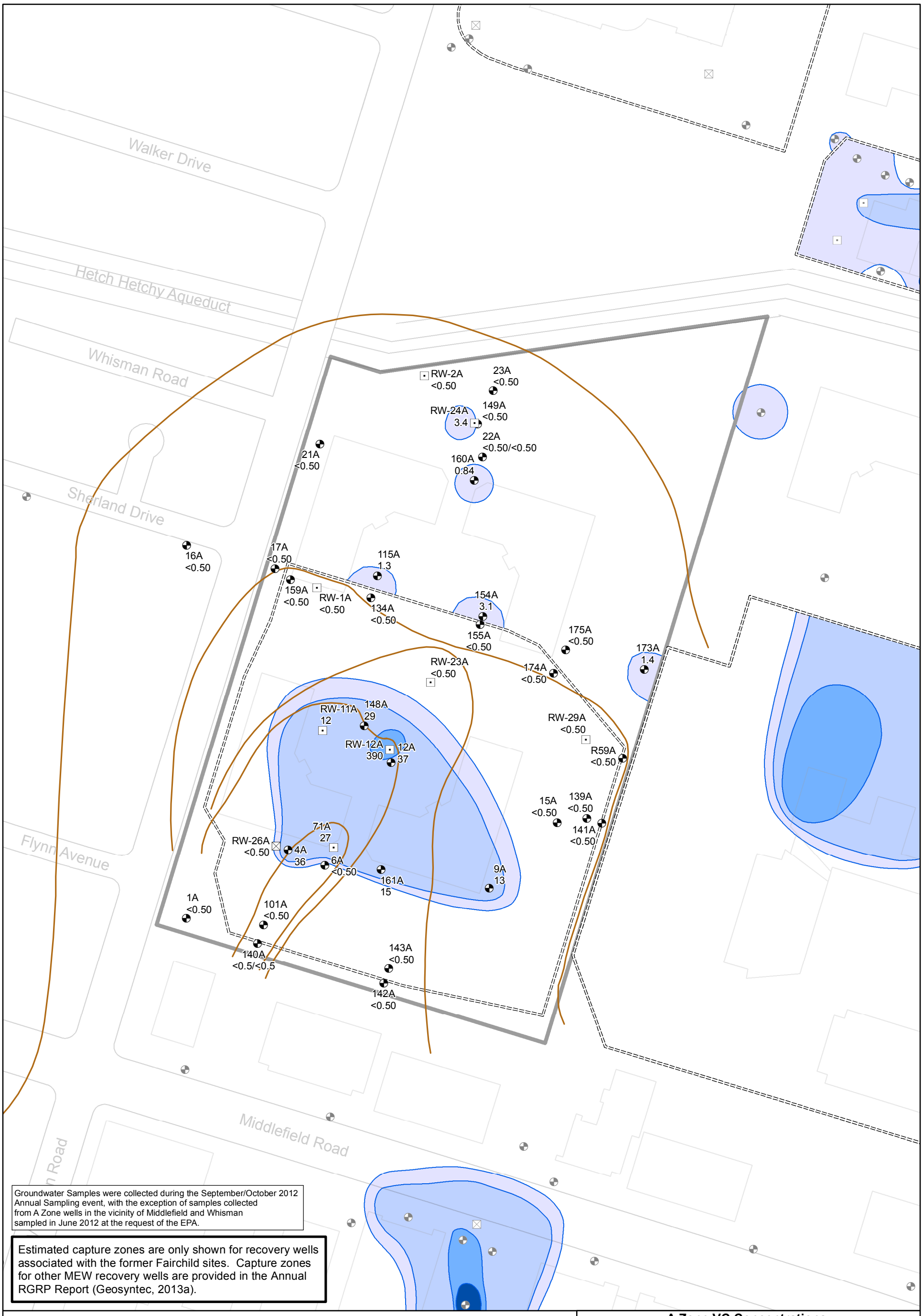
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 14

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig14_DCE_A_Sept2012_CZ.mxd | 4/9/2013 9:53:46 AM


Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
RW-2A <0.50
23A <0.50
RW-24A 3.4
149A <0.50
22A <0.50/<0.50
160A 0.84
21A <0.50
16A <0.50
17A <0.50
159A <0.50
RW-1A <0.50
115A 1.3
134A <0.50
154A 3.1
155A <0.50
175A <0.50
173A 1.4
174A <0.50
RW-23A <0.50
148A 29
RW-11A 12
RW-12A 390
12A 37
RW-29A <0.50
R59A <0.50
15A <0.50
139A <0.50
141A <0.50
71A 27
RW-26A <0.50
4A 36
6A <0.50
161A 15
9A 13
1A <0.50
101A <0.50
140A <0.5/<0.5
143A <0.50
142A <0.50
Groundwater Samples were collected during the September/October 2012 Annual Sampling event, with the exception of samples collected from A Zone wells in the vicinity of Middlefield and Whisman sampled in June 2012 at the request of the EPA.
Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).
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 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.
A Zone VC Concentrations and Estimated Capture Zones September/October 2012
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California
Geosyntec consultants
Oakland
April 2013
Figure 15
P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig15_VC_A_Sept2012_CZ.mxd | 4/9/2013 10:12:00 AM

Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road

RW-2A <0.50
23A <0.50
RW-24A <0.50
149A <0.50
21A <0.50
22A <0.50/<0.50
160A <0.50
16A <0.50
17A <0.50
115A <0.50
159A <0.50
RW-1A <0.50
134A <0.50
154A <0.50
155A 1.2
175A <0.50
173A <0.50
174A 1.9
RW-23A 1.8
148A 0.58
RW-11A <0.50
RW-12A 1.6
12A 1.1
RW-29A 1.8
R59A <0.50
15A <0.50
139A <0.50
141A <0.50
RW-26A <0.50
7-1A <0.50
4A <0.50
6A <0.50
161A <0.50
9A <0.50
1A <0.50
101A <0.50
140A 0.2/0.3
143A <0.50
142A 10

Groundwater Samples were collected during the September/October 2012 Annual Sampling event, with the exception of samples collected from A Zone wells in the vicinity of Middlefield and Whisman sampled in June 2012 at the request of the EPA.

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

A Zone PCE Concentrations and Estimated Capture Zones September/October 2012

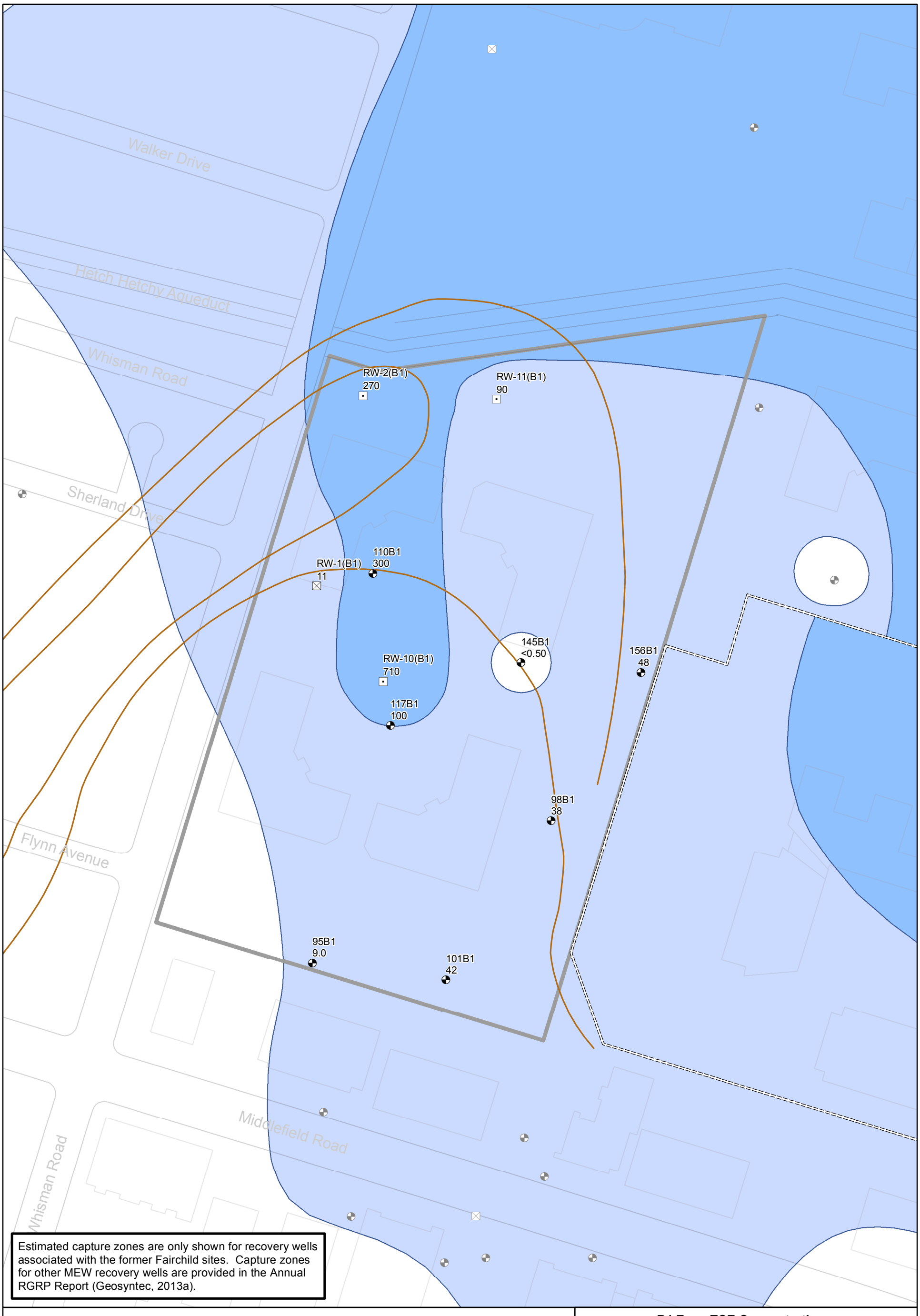
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 16

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig16_PCE_A_Sept2012_CZ.mxd | 4/9/2013 9:54:32 AM



P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig17_TCE_B1_Sept2012_CZ.mxd | 4/9/2013 9:54:56 AM

B1 Zone cDCE Concentrations and Estimated Capture Zones September/October 2012

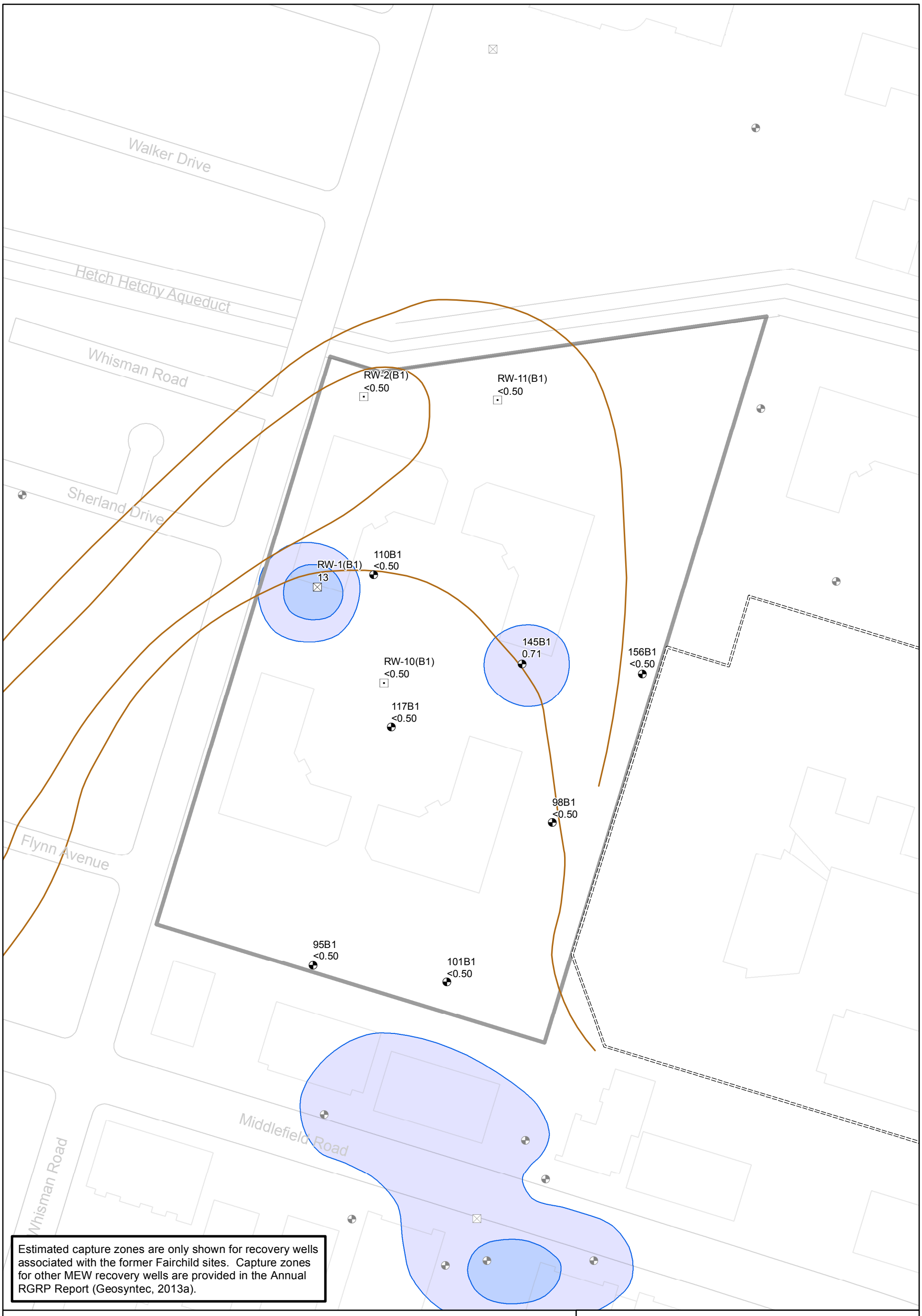
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

Oakland | April 2013

Figure 18

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig18_DCE_B1_Sept2012_CZ.mxd | 4/9/2013 9:55:22 AM



B1 Zone VC Concentrations and Estimated Capture Zones September/October 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 19

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig19_VC_B1_Sept2012_CZ.mxd | 4/9/2013 9:55:42 AM

Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
Whisman Road

RW-2(B1)
<0.50

RW-11(B1)
<0.50

110B1
<0.50

RW-1(B1)
<2.5

145B1
<0.50

156B1
<0.50

RW-10(B1)
<0.50

117B1
<0.50

98B1
<0.50

95B1
<0.50

101B1
<0.50

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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

Notes:
PCE = Tetrachloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for PCE in 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

N

150 75 0 150 Feet

B1 Zone PCE Concentrations and Estimated Capture Zones September/October 2012

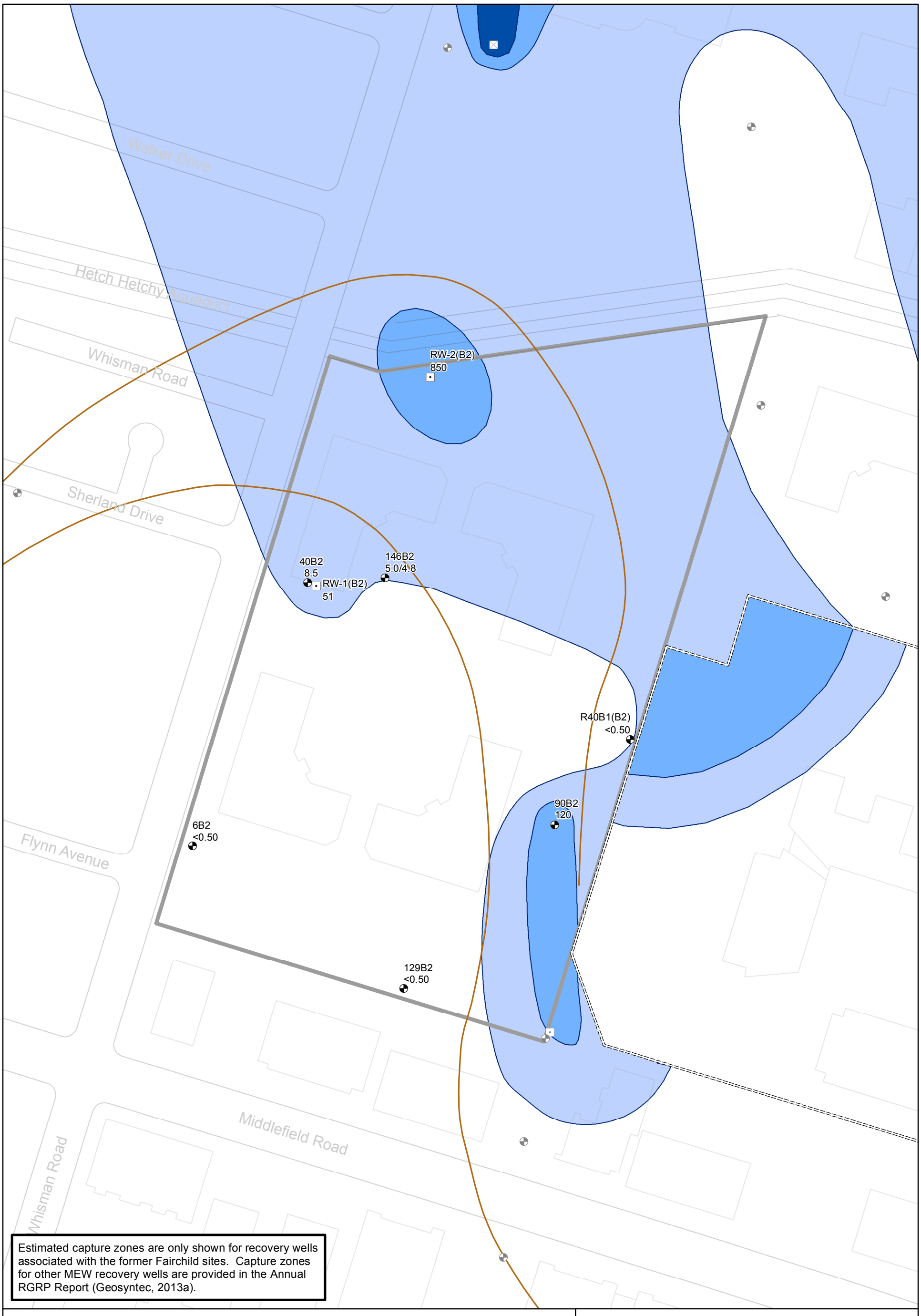
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

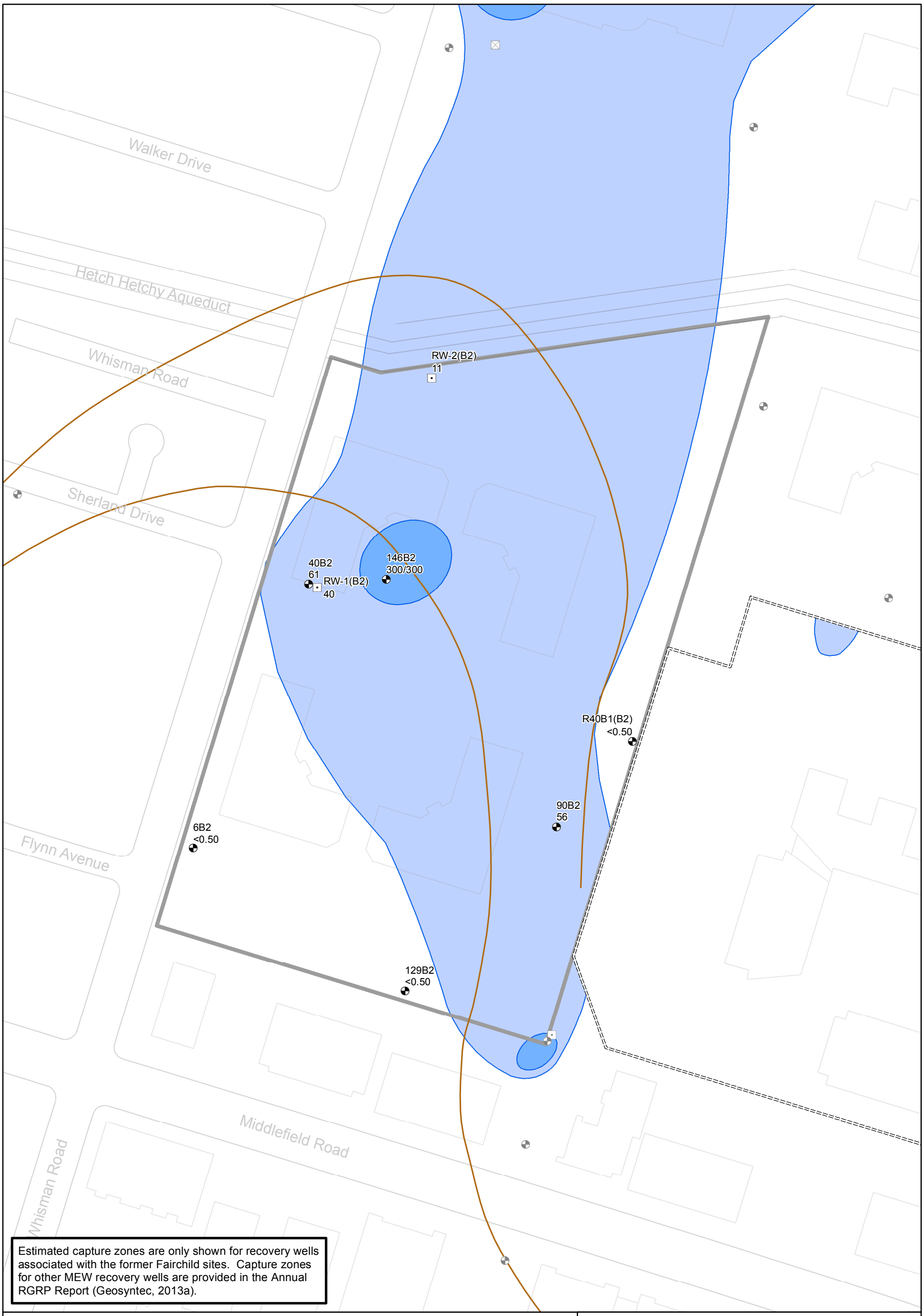
Oakland | April 2013

Figure **20**

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig20_PCE_B1_Sept2012_CZ.mxd | 4/9/2013 9:56:02 AM



P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig21_TCE_B2_Sept2012_CZ.mxd | 4/9/2013 9:56:23 AM



B2 Zone cDCE Concentrations and Estimated Capture Zones September/October 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 22

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig22_cDCE_B2_Sept2012_CZ.mxd | 4/9/2013 9:56:44 AM

Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
Whisman Road
RW-2(B2)
<0.50
40B2
<0.50
RW-1(B2)
<0.50
146B2
<0.50/<0.50
R40B1(B2)
<0.50
90B2
<0.50
6B2
<0.50
129B2
<0.50

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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 2012.
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 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 23

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig23_VC_B2_Sept2012_CZ.mxd | 4/9/2013 9:57:04 AM

Walker Drive
Hetch Hetchy Aqueduct
Whisman Road
Sherland Drive
Flynn Avenue
Middlefield Road
Whisman Road

RW-2(B2)
<0.50

40B2
<0.50

RW-1(B2)
<0.50

146B2
<0.50/<0.50

R40B1(B2)
<0.50

90B2
<0.50

6B2
<0.50

129B2
<0.50

Estimated capture zones are only shown for recovery wells associated with the former Fairchild sites. Capture zones for other MEW recovery wells are provided in the Annual RGRP Report (Geosyntec, 2013a).

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

Notes:
PCE = Tetrachloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for PCE in 2012.
Wells not associated with the Former Fairchild Buildings 13, 19, and 23 Site are shown in gray.

N

150 75 0 150 Feet

B2 Zone PCE Concentrations and Estimated Capture Zones September/October 2012

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

Geosyntec consultants

Oakland | April 2013

Figure 24

P:\GIS\MEW\Project\Fairchild\2012_AR\Building19\Fig24_PCE_B2_Sept2012_CZ.mxd | 4/9/2013 9:57:23 AM

APPENDIX A

2012 Annual Report Remedy Performance Checklist

2012 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; this includes the building located at 323 Fairchild Drive) 369 and 441 North Whisman Road (former Bldgs. 13 and 19 and 23; this includes buildings located 379, 389 and 399 North Whisman Road) 401 National Avenue (former Bldg. 9) 644 National Avenue (former Bldg. 18) 464 Ellis Street (former Bldg. 20 and 20A; this includes buildings located at 466 and 468 Ellis Street)	
Checklist completion date: 23 March 2013	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: 3 Regional Groundwater Remediation Program (RGRP) wells and 17 Source Control Recovery Wells (SCRWs)

Buildings 13, 19, 23 – 14 SCRWs

Building 9 – 4 SCRWs

Building 18 – 1 SCRW and 1 basement dewatering sump. The basement dewatering sump was disconnected and removed on 5 September 2012.

3. Treatment Systems as described below:

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

- 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, and two RGRP wells)

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

2012 Annual Report Remedy Performance Checklist

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	Trish Eliasson Weiss Associates	510 450-6138	tae@weiss.com

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.

2012 Annual Report Remedy Performance Checklist

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:

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. Redevelopment of the property began in 2012. Redevelopment plans include demolition of the existing building (i.e., the former Fairchild Building 18) and construction of a parking lot for buildings on adjacent parcels. The former Fairchild Building 18 structure has been demolished and activities related to construction of the parking lot are ongoing. The former Fairchild Building 18 basement dewatering system was permanently shutdown and disconnected on 5 September 2012. The sump was then removed and backfilled. There is continued coordination with the developer to maintain the extraction wells, conveyance piping, and monitoring wells at the Site, as well as the Regional Groundwater Remediation Program (RGRP) South of 101 treatment system located on the Site.

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.

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	2012 Annual Fairchild Building Reports (Geosyntec, 2013) and the 2012 Annual Regional Report (Geosyntec, 2013a)

☑ 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 2012 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	2012 Annual Fairchild Reports (Geosyntec, 2013)

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 2012 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

2012 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 2012. 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 (Geosyntec, 2013c).

Summary of Results: Access was received and indoor air sampling was conducted at seven buildings in accordance with their EPA-approved building-specific vapor intrusion work plans. Results for five of the buildings showed VOC levels below the EPA commercial indoor air clean-up levels established for this Site. At 369 and 379 North Whisman Road, indoor air sampling revealed TCE levels above the clean-up level. SSD systems will be installed at these two buildings. More information is provided in the Vapor Intrusion Annual Report (Geosyntec, 2013c).

Problems Encountered: None

Recommendations/Next Steps: Continue to evaluate the potential for vapor intrusion in the buildings that have yet to be sampled, prior to occupancy, and tier the buildings in accordance with the tiers established in the ROD Amendment .

Schedule: Vapor intrusion and tiering activities will be conducted in accordance with a schedule set forth and approved by EPA in the building-specific vapor intrusion work plans and as requested by EPA. Further details are provided in the Vapor Intrusion Annual Report (Geosyntec, 2013c).

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 2013).

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 2012 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 where caused by extraction in deeper zones.

Source document reference: 2012 Annual Fairchild Building Reports (Geosyntec, 2013)
2012 Annual Regional Report (Geosyntec, 2013a)
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 2012 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 2013

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

2012 Annual Report Remedy Performance Checklist

Remedy Projections for the upcoming year (2013/2014)
☑ 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 Remedy Optimization Elaborate below. Target date: 2014

Elaborate on Remedy Projections: EPA has requested that the MEW parties work to optimize performance of the groundwater remedy with respect to mass removal.

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 Remedy Optimization Elaborate below. Target date: 2014

Elaborate on Remedy Projections: EPA has requested that the MEW parties work to optimize performance of the groundwater remedy with respect to mass removal.

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 Remedy Optimization Elaborate below. Target date: 2014

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 Remedy Optimization Elaborate below. Target date: 2014

2012 Annual Report Remedy Performance Checklist

Elaborate on Remedy Projections: EPA has requested that the MEW parties work to optimize performance of the groundwater remedy with respect to mass removal.

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 2012

(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: Eric Suchomel, Ph.D., P.E.
Geosyntec Consultants

FROM: Trish Eliasson, P.E.
Weiss Associates

DATE: March 21, 2013

RE: **2012 DATA QUALITY ASSURANCE/QUALITY CONTROL SUMMARY**
Middlefield-Ellis-Whisman Area
Mountain View, California

This memorandum summarizes Weiss Associates' (Weiss) review of data quality for water samples collected in 2012 at the Middlefield-Ellis-Whisman (MEW) Area. Our review was conducted in general accordance with the Quality Assurance Project Plan (QAPP)[1] and the U.S. Environmental Protection Agency (USEPA) data review guidelines.[2,3] The data reviewed herein include field and laboratory data quality assurance/quality control (QA/QC) results for the following events:

- A supplemental well sampling of eight Regional Groundwater Remediation Program (RGRP) wells conducted by Weiss on June 22, 2012.[4]
- The annual sampling conducted by Weiss of MEW monitoring and extraction wells that occurred generally in September and October 2012 for the RGRP and Former Fairchild Buildings (Fairchild). This data evaluation also includes sample results for 29 RGRP wells that were sampled by Locus Technologies (Locus). After sampling, Locus relinquished the samples to Weiss, and Weiss submitted the samples to an analytical laboratory.
- Well sampling using alternate methods that was conducted by Weiss during the annual sampling event, which involved using passive diffusion bags (PDBs) and Hydrasleeve™ samplers as proposed in the *Work Plan for Sampling Methods Evaluation.*[5]
- Monthly water sampling conducted by Weiss at the RGRP North-101 (N101) and South-101 (S101) treatment systems and Fairchild Systems 1, 3, and 19.

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[1] The QAPP includes the following: *Quality Assurance Project Plan, Middlefield-Ellis-Whisman Site, Mountain View, California,* prepared by Canonie Environmental Services Corporation, submitted on May 3, 1991 and approved in part by USEPA on July 22, 1991; modifications as presented in *Revision 1.0, Quality Assurance Project Plan, Middlefield-Ellis-Whisman Site, Mountain View, California,* prepared by Canonie, submitted on August 16, 1991; and the *Transmittal of Addendum to the Unified Quality Assurance Project Plan,* submitted on December 2, 1992 and approved by the USEPA on February 3, 1993.

[2] *National Functional Guidelines for Superfund Organic Methods Data Review,* prepared by the USEPA Contract Laboratory Program, OSWER 9240.1-48 USEPA-540-R-08-01, June 2008.

[3] *National Functional Guidelines for Inorganic Superfund Methods Data Review,* prepared by the USEPA Contract Laboratory Program, OSWER 9240.1-51 USEPA-540-R-10-011, January 2010.

[4] *Results of Supplemental Well Sampling,* letter prepared by Weiss Associates, July 12, 2012.

[5] *Work Plan for Sampling Methods Evaluation, Middlefield-Ellis-Whisman, Regional Groundwater Remediation Program,* prepared by Geosyntec Consultants, September 12, 2012.

FIELD QA/QC SAMPLE REQUIREMENTS

Per the QAPP, the following field QA/QC samples were collected:

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

Rinseate blank – Rinseate blanks are collected to evaluate whether sampling equipment may be causing cross-contamination between sample locations. The blanks consist of reagent water collected from a final rinse of sampling equipment after the decontamination procedure has been performed. Rinseate blank sampling is not necessary for locations that have dedicated sample collection, such as at groundwater extraction and treatment system (GWETS) sample ports or where PDBs or Hydrasleeves are used. Following equipment decontamination, deionized/organic-free water used for the final rinse is collected in appropriate bottles. Rinseate samples are specified at a frequency of 1 for every 20 field samples that are collected using reusable sample collection equipment.

Equipment blank – Equipment blanks are collected to assess if the sampler materials (e.g., plastics, laboratory-provided water) may be contributing contamination to the samples. Equipment blanks were collected from PDBs and Hydrasleeves. PDB equipment blanks were collected from the laboratory-supplied water in PDBs that were not deployed in wells. Hydrasleeve equipment blanks were prepared by rinsing unused Hydrasleeves with deionized/organic-free water and collecting the subsequent rinseate. Two PDB and two Hydrasleeve equipment blanks were collected.

Field blank – Field blanks are collected to assess if source water used onsite for decontamination may affect the samples. The decontamination source water is de-ionized and organic-free. Field blanks are collected at a frequency of 5% of the samples collected.

Trip blank – Trip blanks assist in evaluating whether the exposure of a sample to site conditions, storage, and shipment may cause contamination. These samples consist of volatile organic analysis vials (VOAs) filled with deionized/organic-free water and preserved with hydrochloric acid. These pre-filled VOAs are supplied by the laboratory and accompany other samples in the field and to the laboratory. One trip blank accompanies each volatile organic compound (VOC) sample shipment to the laboratory.

LABORATORY DATA QUALITY REVIEW PARAMETERS

Per the QAPP, Weiss verified that the sample results met the QAPP Level 2 and Level 4 requirements for completeness. A Level 2 data review includes reviewing the following parameters:

- Holding time;
- Detection and reporting limits;
- Surrogate recovery (VOC methods only);
- Laboratory control sample recovery;

- MS/MSD recovery;
- Method blank results;
- Trip blank results (VOC methods only);
- Field, rinseate and equipment blank results; and
- Field duplicate results.

Weiss performed a Level 4 data validation review for ten percent of the samples 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 VOC and 1,4-dioxane 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 metal data includes:

- 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.

REVIEW FINDINGS

Supplemental and Annual Well Sampling

Field Sampling Data

A total of 332 groundwater monitoring and extraction wells were sampled this year. The supplemental sampling, annual sampling and alternative sampling method evaluation resulted in 463 laboratory analyses of primary samples. The total numbers of primary analyses for each test method are summarized below.

Analytes	Laboratory Method	Number of Primary Samples Analyzed
Volatile organic compounds	USEPA Method 8260B	395
1,4-Dioxane	USEPA Method 8270C	56
Metals	USEPA Method 6010B or 6020A	12

The groundwater sample data were imported into the database as 19,811 individual results. No data were rejected during the validation process, and "J" qualification was applied to select sampling results as discussed in the following sections. A J-qualifier, as defined by the USEPA, applies when an analyte is positively identified and the associated numerical value is qualified as an approximate concentration of the analyte in the sample.

Weiss checked all chain-of-custody forms for completeness and accuracy before the samples were transported to the laboratories. The laboratories reported no significant sample quality concerns. Cooler temperatures were acceptable for sample preservation, no significant headspace volumes were observed in VOAs, and sample containers were properly preserved. The sample collected from well 54B2 on October 1, 2012 was relinquished to the laboratory but not analyzed. The sample could not be located, and thus, the well was resampled on January 10, 2013.

Field duplicates. A total of 23 duplicates for VOCs, 4 duplicates for 1,4-dioxane and 2 duplicates for metals were collected. The required frequency of 1 for every 20 field samples collected was satisfied as specified in the QAPP. Table 1a reports the relative percent difference (RPD) in concentrations for each of the duplicate sample pairs, the average RPD, the upper confidence level (UCL), as specified in the QAPP, and the precision acceptance limits for 1,4-dioxane, tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC). RPDs and UCLs were not calculated for metals because no metals were detected above method detection limits in the duplicate pairs.

Table 1a shows that the RPDs for these analytes were less than their respective precision acceptance limits, except for TCE and cis-1,2-DCE in one duplicate pair. The respective RPDs were 56% and 57% in the samples from well R31A, collected on September 6, 2012. Thus, only these results were J-flagged.

Matrix spike/Matrix spike duplicates. A total of 55 MS/MSD samples were analyzed for VOCs, 1,4-dioxane and metals. The required frequency of 1 for every 20 field samples collected was met. The RPDs for these MS/MSD samples were below the 35% limit as specified in the QAPP, except for TCE in one sample. The RPD for MS/MSD samples collected from well 51B2 (sample 1012-207) was 86%. The MS recovery for TCE in this sample was above the recovery limit criteria. However, because the MSD recovery and laboratory control spike recovery were within limits, no qualifications were applied.

Rinseate and equipment blanks. A total of 28 rinseate and equipment blank samples were collected. The required frequency of 1 rinseate blank for every 20 field samples collected was met, and 2 PDB and 2 Hydrasleeve equipment blanks were collected as required by the *Work Plan for Sampling Methods Evaluation*. As shown in Table 1b, no VOCs, 1,4-dioxane or metals were detected in the rinseate or equipment blanks except for cis-1,2-DCE and TCE in rinseate blank 0912-038, collected from a bladder pump on September 25, 2012. Per the *National Functional Guidelines*, qualifiers based on blank contamination should be determined by professional judgment. Because the cis-1,2-DCE and TCE concentrations in this sample were more than 10 times less than the cis-1,2-DCE and TCE concentrations detected in other samples collected with the same pump on the same day, no qualifiers were applied.

Field blanks. A total of 26 field blanks were collected during the supplemental and annual sampling event. As required by the QAPP, at least 1 blank was collected for every 20 samples. No VOCs, 1,4-dioxane or metals were detected in the field blanks.

Trip blanks. A total of 78 trip blanks were analyzed for VOCs. One blank was collected per shipping container. No analytes were detected above method detection limits in any of the trip blanks.

Field audit. Weiss performed an audit of Weiss sampling activities on September 11, 2012 and periodically throughout the sampling event as required by the QAPP. The audit consisted of observing sampling activities, reviewing shipping and chain of custody procedures for consistency with the QAPP and project operation and maintenance manuals, conducting split samples and submitting them blind for chemical analyses, and reviewing field forms for completeness and accuracy. The audit findings were that the sampling activities were in general accordance with the QAPP and Weiss standard operating procedures as appropriate.

Laboratory Data

The samples were analyzed by the following analytical laboratories, each certified by the California Department of Public Health Environmental Laboratory Accreditation Program for the analyses they conducted:

- Curtis & Tompkins, Ltd. (C&T), Berkeley, California; and
- TestAmerica Laboratories, Inc., Pleasanton, California.

Weiss reviewed the Level 2 and Level 4 QA/QC analysis results produced by these laboratories for the well sample analyses. Our review confirmed that all samples were analyzed per the requested laboratory analyses and that all method holding times were met. No significant deviations from the required reporting limits were identified and no data were rejected. One analyte, trans-1,2-dichloroethene, was J-flagged due to low matrix spike and matrix spike duplicate recovery in the results for the sample from well 156A. Weiss verified that the samples met the QAPP Level 2 and Level 4 requirements for completeness.

Groundwater Extraction and Treatment Systems

Field Sampling Data

A total of 230 system samples and 56 field duplicates were collected from RGRP N101 and S101 and from Fairchild Systems 1, 3 and 19 throughout the year. The following laboratory analyses were conducted:

Analyte	Laboratory Method	Number of Primary Samples Analyzed
Volatile Organic Compounds	U.S. EPA Method 8260B	172
1,4-Dioxane	U.S. EPA Method 8270C	32
Metals	U.S. EPA Method 200.8	11
Mercury	U.S. EPA Method E1631	5
Hexavalent Chromium	U.S. EPA Method SW7199	5
Cyanide	SM20-4500	5

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. The treatment system samples were imported into the database as 8,684 individual results. No data were rejected during the validation process, and "J" qualification was applied to 138 sample results.

Field duplicates. A total of 24 duplicates for VOCs, 21 duplicates for 1,4-dioxane, 5 duplicates for select metals, 2 duplicates for hexavalent chromium, 2 duplicates for mercury, and 2 duplicates for cyanide were collected. The required frequency of 1 for every 20 field samples collected was satisfied as specified in the QAPP. Table 2a reports the RPD in concentrations for each of the duplicate sample pairs, average RPDs, resultant UCLs and precision acceptance limits for 1,4-dioxane, PCE, TCE, cis-1,2-DCE and VC. All RPDs were less than the precision acceptance limits, except for the RPD of 1,4-dioxane concentrations in one pair of samples identified as T3-E. This sample pair was collected from the effluent of Fairchild System 3 on July 5, 2012. The 1,4-dioxane results for these samples were J-flagged. Table 2b reports the RPD in concentrations for each of the duplicate sample pairs for antimony, arsenic, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, zinc and cyanide. All RPDs for concentrations of these metals and cyanide were below the precision acceptance limit.

Trip blanks. Sixty trip blanks, one for each GWETS sample shipment to the laboratories, were analyzed for VOCs. As indicated in Table 2c, no VOCs were detected in the trip blanks except for chloroform in six blanks and methylene chloride in three blanks. These analytes were not detected in primary samples that accompanied the blanks, so no data qualifiers were necessary.

Laboratory Data

The samples were analyzed by the following analytical laboratories, each certified by the California Department of Public Health Environmental Laboratory Accreditation Program for the analyses they conducted:

- Curtis & Tompkins, Ltd. (C&T), Berkeley, California; and
- TestAmerica Laboratories, Inc., Pleasanton, California.

Per the QAPP, Weiss verified that the samples from the treatment systems met the QAPP Level 2 requirements for completeness. Our review confirmed that all samples were analyzed per the requested laboratory analyses and that all method holding times were met. No significant deviations from the required reporting limits were identified, and no data were rejected. J-qualifiers were applied to 136 sample results based on the Level 2 QA/QC analysis.

COMPLETENESS STATEMENT

No laboratory data were invalidated. Therefore, valid data constitutes 100% of the total data collected, exceeding the QAPP requirement of 90%.

TABLES

Table 1a: Summary of Results for Duplicate Samples Collected During the Supplemental and Annual Sampling Events

Table 1b: Summary of Detections for Rinseate and Equipment Blanks Collected During the Supplemental and Annual Sampling Events

Table 2a: Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected During Treatment System Sampling Events

Table 2b: Summary of Results for Metal and Cyanide Duplicate Samples Collected During Treatment System Sampling Events

Table 2c: Summary of Detections for Travel Blanks Collected During Treatment System Sampling Events

Table 1a. Summary of Results for Duplicate Samples Collected During the Supplemental and Annual Sampling Events

Well ID	Well Owner	Sampling Consultant	Sample Date	cis-1,2-DCE (µg/L)	cis-1,2-DCE RPD	PCE (µg/L)	PCE RPD	TCE (µg/L)	TCE RPD	Vinyl chloride (µg/L)	Vinyl Chloride RPD	1,4-Dioxane (µg/L)	1,4-Dioxane RPD
140A	Fairchild	Weiss	6/22/2012	8.5		0.2		78		<0.5		---	
140A (DUP)	Fairchild	Weiss	6/22/2012	9.1	7	0.3	40	80	3	<0.5	NC	---	---
R31A	Raytheon	Locus	9/6/2012	56 J		<0.50		82 J		<0.50		---	
R31A (DUP)	Raytheon	Locus	9/6/2012	31 J	**57**	<0.50	NC	46 J	**56**	<0.50	NC	---	---
R41B2	Raytheon	Locus	9/8/2012	1.6		<0.50		63		<0.50		---	
R41B2 (DUP)	Raytheon	Locus	9/8/2012	1.6	0	<0.50	NC	63	0	<0.50	NC	---	---
122A	Fairchild	Weiss	9/26/2012	100		<0.50		210		<0.50		---	
122A (DUP)	Fairchild	Weiss	9/26/2012	100	0	<0.50	NC	230	9	<0.50	NC	---	---
123B2	Fairchild	Weiss	9/28/2012	<0.50		<0.50		<0.50		<0.50		---	
123B2 (DUP)	Fairchild	Weiss	9/28/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
132B2	Fairchild	Weiss	9/10/2012	<0.50		<0.50		<0.50		<0.50		---	
132B2 (DUP)	Fairchild	Weiss	9/10/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
146B2	Fairchild	Weiss	10/24/2012	300		<0.50		5.0		<0.50		---	
146B2 (DUP)	Fairchild	Weiss	10/24/2012	300	0	<0.50	NC	4.8	4	<0.50	NC	---	---
147A	Fairchild	Weiss	10/24/2012	14		0.70		140		<0.50		---	
147A (DUP)	Fairchild	Weiss	10/24/2012	12	15	0.64	9	130	7	<0.50	NC	---	---
152A	Fairchild	Weiss	9/19/2012	130		<0.50		270		2.5		---	
152A (DUP)	Fairchild	Weiss	9/19/2012	130	0	<0.50	NC	270	0	2.6	4	---	---
156A	Fairchild	Weiss	10/19/2012	1,600		<0.50		45		<0.50		2.0	
156A (DUP)	Fairchild	Weiss	10/19/2012	1,600	0	<0.50	NC	46	2	<0.50	NC	2.1	5
160A	Fairchild	Weiss	10/23/2012	420		0.75		650		0.87		---	
160A (DUP)	Fairchild	Weiss	10/23/2012	430	2	0.79	5	660	2	0.86	1	---	---
175A	Fairchild	Weiss	10/15/2012	19		0.51		95		<0.50		1.1	
175A (DUP)	Fairchild	Weiss	10/15/2012	19	0	0.54	6	97	2	<0.50	NC	0.97	13
22A	Fairchild	Weiss	10/19/2012	25		<0.50		120		<0.50		<1.1	
22A (DUP)	Fairchild	Weiss	10/19/2012	23	8	<0.50	NC	120	0	<0.50	NC	<1.1	NC
33B1	Fairchild	Weiss	9/12/2012	<0.50		<0.50		28		<0.50		---	
33B1 (DUP)	Fairchild	Weiss	9/12/2012	<0.50	NC	<0.50	NC	26	7	<0.50	NC	---	---
44B3	Fairchild	Weiss	10/24/2012	<0.50		<0.50		<0.50		<0.50		---	
44B3 (DUP)	Fairchild	Weiss	10/24/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
46A	Fairchild	Weiss	10/23/2012	0.69		<0.50		15		<0.50		---	
46A (DUP)	Fairchild	Weiss	10/23/2012	0.55	23	<0.50	NC	13	14	<0.50	NC	---	---
65A	Fairchild	Weiss	10/3/2012	130		<5.0		520		<5.0		---	
65A (DUP)	Fairchild	Weiss	10/3/2012	110	17	0.52	131	510	2	1.2	70	---	---
93A	Fairchild	Weiss	10/29/2012	11		<0.50		2.2		<0.50		---	
93A (DUP)	Fairchild	Weiss	10/29/2012	11	0	<0.50	NC	2.4	9	<0.50	NC	---	---
DW3-551	Fairchild	Weiss	9/27/2012	<0.50		<0.50		<0.50		<0.50		---	
DW3-551 (DUP)	Fairchild	Weiss	9/27/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
REG-9A	RGRP	Weiss	9/21/2012	39		<0.50		84		0.52		---	
REG-9A (DUP)	RGRP	Weiss	9/21/2012	36	8	<0.50	NC	80	5	<0.50	70	---	---

Table 1a. Summary of Results for Duplicate Samples Collected During the Supplemental and Annual Sampling Events

Well ID	Well Owner	Sampling Consultant	Sample Date	cis-1,2-DCE (µg/L)	cis-1,2-DCE RPD	PCE (µg/L)	PCE RPD	TCE (µg/L)	TCE RPD	Vinyl chloride (µg/L)	Vinyl Chloride RPD	1,4-Dioxane (µg/L)	1,4-Dioxane RPD
RW-3A	Fairchild	Weiss	9/24/2012	11		<0.50		51		<0.50		---	
RW-3A (DUP)	Fairchild	Weiss	9/24/2012	11	0	<0.50	NC	52	2	<0.50	NC	---	---
RW-5(B2)	Fairchild	Weiss	9/24/2012	<0.50		<0.50		<0.50		<0.50		---	
RW-5(B2) (DUP)	Fairchild	Weiss	9/24/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
SIL12A	Siltec	Weiss	10/22/2012	350		1.4		750		4.6		1.1	
SIL12A (DUP)	Siltec	Weiss	10/22/2012	360	3	1.4	0	750	0	4.9	6	1.1	0
Average RPD					8		32		7		30		6
Upper Confidence Level (three standard deviations)					42		139		38		98		16
Precision Acceptance Limit					**50**		**171**		**45**		**128**		**21**

Notes:

For duplicate pairs where one analyte was detected in one sample but not the other, half the reporting limit was used as the concentration for the sample with no analyte detected.

Volatile Organic Compounds analyzed by U.S. EPA Method 8260B

1,4-Dioxane analyzed by U.S. EPA Method 8270C

Per the 1991 MEW Quality Assurance Project Plan:

RPD = (X1-X2) /((X1+X2) / 2))*100 where X1 is the concentration in sample 1 and X2 is the concentration in sample 2.

UCL = 3*s where s is the standard deviation of the RPDs for that analyte.

Precision Acceptance Limit = average RPD + UCL

Abbreviations:

--- = not analyzed
< # = analyte not detected above the reporting limit of "#"
cis-1,2-DCE = cis-1,2-dichloroethene
DUP = duplicate sample collected at indicated well
J = the associated numerical value is the qualified as an approximate concentration of the analyte in the sample
NC = not calculated
PCE = Tetrachloroethene
RPD = Relative Percent Difference
TCE = Trichloroethene
UCL = Upper Confidence Level
µg/L = micrograms per liter
BOLD = RPD exceeds the Precision Acceptance Limit

Table 1b. Summary of Detections for Rinseate and Equipment Blanks Collected During the Supplemental and Annual Sampling Events

Sample Name	Well Owner	Sampling Consultant	Sampling Method	Sample Date	Lab/Method	Detections
0912-038	Fairchild	Weiss	Micropurge	9/25/2012	TA/8260	0.89 µg/L cis-1,2-DCE 0.76 µg/L TCE

Notes:

No volatile organic compounds detected above the reporting limits in 20 other rinseate/equipment blanks analyzed by EPA Method 8260B.

No semi-volatile organic compounds detected above the reporting limits in 4 rinseate/equipment blanks analyzed by EPA Method 8270C.

No metals detected above the reporting limits in 3 rinseate/equipment blanks analyzed by EPA Method 6020.

Abbreviations:

cis-1,2-DCE = cis-1,2-dichloroethene

EPA = US Environmental Protection Agency

TA = TestAmerica

TCE = Trichloroethene

µg/L = micrograms per liter

Table 1c. Summary of Detections for Field Blanks Collected During the Supplemental and Annual Sampling Events

Sample Name	Well Owner	Sampling Consultant	Sample Date	Lab/Method	Detections
240NEC-5353	NEC	Locus	10/9/2012	CT/8260	14 µg/L cis-1,2-DCE 2.2 µg/L trans-1,2-DCE 0.8 µg/L PCE 53 µg/L TCE
FIELD BLANK	Intel	Weiss	10/24/2012	CT/8260	0.7 µg/L TCE

Notes:

No volatile organic compounds detected above the reporting limits in 26 other field blanks analyzed by EPA Method 8260B.

No semi-volatile organic compounds detected above the reporting limits in 3 field blanks analyzed by EPA Method 8270C.

No metals detected above the reporting limits in 1 field blank analyzed by EPA Method 6020.

Abbreviations:

cis-1,2-DCE = cis-1,2-dichloroethene

CT = Curtis and Tompkins

EPA = US Environmental Protection Agency

PCE = tetrachloroethene

TCE = Trichloroethene

trans-1,2-DCE = trans-1,2-dichloroethene

µg/L = micrograms per liter

Table 2a. Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected During Treatment System Sampling Events

Sample Name	Treatment System Owner	Sample Date	cis-1,2-DCE (µg/L)	cis-1,2-DCE RPD	PCE (µg/L)	PCE RPD	TCE (µg/L)	TCE RPD	Vinyl Chloride (µg/L)	Vinyl Chloride RPD	1,4-Dioxane (µg/L)	1,4-Dioxane RPD
N101-E	RGRP	1/4/2012	<0.5		<0.5		<0.5		<0.5		2.8	
N101-E (DUP)	RGRP	1/4/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	3.0	7
N101-E	RGRP	2/1/2012	<0.5		<0.5		<0.5		<0.5		2.7	
N101-E (DUP)	RGRP	2/1/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.6	4
N101-E	RGRP	3/7/2012	<0.5		<0.5		<0.5		<0.5		2.1	
N101-E (DUP)	RGRP	3/7/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.3	9
N101-E	RGRP	4/4/2012	<0.5		<0.5		<0.5		<0.5		2.2	
N101-E (DUP)	RGRP	4/4/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.0	10
N101-E	RGRP	5/2/2012	<0.5		<0.5		<0.5		<0.5		2.6	
N101-E (DUP)	RGRP	5/2/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.0	26
N101-E	RGRP	6/6/2012	0.4 J		<0.5		<0.5		<0.5		2.2	
N101-E (DUP)	RGRP	6/6/2012	0.4 J	0	<0.5	NC	<0.5	NC	<0.5	NC	2.2	0
N101-E	RGRP	7/3/2012	<0.50		<0.50		<0.50		<0.50		2.1 J	
N101-E (DUP)	RGRP	7/3/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	2.5 J	17
N101-E	RGRP	7/25/2012	---		---		---		---		1.9	
N101-E (DUP)	RGRP	7/25/2012	---	---	---	---	---	---	---	---	1.8	5
N101-E	RGRP	8/22/2012	<0.50		<0.50		<0.50		<0.50		---	
N101-E (DUP)	RGRP	8/22/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
N101-E	RGRP	9/6/2012	<0.50		<0.50		<0.50		<0.50		---	
N101-E (DUP)	RGRP	9/6/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
N101-E	RGRP	10/17/2012	<0.50		<0.50		<0.50		<0.50		---	
N101-E (DUP)	RGRP	10/17/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	---	---
N101-E	RGRP	11/12/2012	<0.50		<0.50		<0.50		<0.50		2.7	
N101-E (DUP)	RGRP	11/12/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	3.0	11
N101-E	RGRP	12/6/2012	0.17 J		<0.50		<0.50		<0.50		---	
N101-E (DUP)	RGRP	12/6/2012	0.10 J	52	<0.50	NC	<0.50	NC	<0.50	NC	---	---
T3-E	Fairchild	1/5/2012	<0.5		<0.5		<0.5		<0.5		3.1	
T3-E (DUP)	Fairchild	1/5/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	3.1	0
T3-E	Fairchild	2/2/2012	<0.5		<0.5		<0.5		<0.5		<0.93	
T3-E (DUP)	Fairchild	2/2/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	<0.93	NC
T3-E	Fairchild	3/1/2012	<0.5		<0.5		<0.5		<0.5		2.4	
T3-E (DUP)	Fairchild	3/1/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.3	4
T3-E	Fairchild	4/13/2012	<0.5		<0.5		<0.5		<0.5		<1.0	
T3-E (DUP)	Fairchild	4/13/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	<1.0	NC
T3-E	Fairchild	5/3/2012	<0.5		<0.5		<0.5		<0.5		<1.0	
T3-E (DUP)	Fairchild	5/3/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	<1.0	NC
T3-E	Fairchild	6/7/2012	<0.5		<0.5		<0.5		<0.5		2.2	
T3-E (DUP)	Fairchild	6/7/2012	<0.5	NC	<0.5	NC	<0.5	NC	<0.5	NC	2.3	4

Table 2a. Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected During Treatment System Sampling Events

Sample Name	Treatment System Owner	Sample Date	cis-1,2-DCE (µg/L)	cis-1,2-DCE RPD	PCE (µg/L)	PCE RPD	TCE (µg/L)	TCE RPD	Vinyl Chloride (µg/L)	Vinyl Chloride RPD	1,4-Dioxane (µg/L)	1,4-Dioxane RPD
T3-E	Fairchild	7/5/2012	<0.50		<0.50		<0.50		<0.50		<1.0 UJ	
T3-E (DUP)	Fairchild	7/5/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	1.2 J	**82**
T3-E	Fairchild	8/16/2012	<0.50		<0.50		<0.50		<0.50		1.7	
T3-E (DUP)	Fairchild	8/16/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	2.8	49
T3-E	Fairchild	9/6/2012	<0.50		<0.50		<0.50		<0.50		2.6	
T3-E (DUP)	Fairchild	9/6/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	2.5	4
T3-E	Fairchild	10/17/2012	<0.50		<0.50		<0.50		<0.50		0.30 J	
T3-E (DUP)	Fairchild	10/17/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	0.31 J	3
T3-E	Fairchild	11/13/2012	<0.50		<0.50		<0.50		<0.50		3.1	
T3-E (DUP)	Fairchild	11/13/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	3.2	3
T3-E	Fairchild	12/13/2012	<0.50		<0.50		<0.50		<0.50		<1.0	
T3-E (DUP)	Fairchild	12/13/2012	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC	<1.0	NC
Average RPD				26		NC		NC		NC		14
Upper Confidence Level (three standard deviations)				78		NC		NC		NC		62
Precision Acceptance Limit				**104**		**NC**		**NC**		**NC**		**76**

Notes:

For duplicate pairs where one analyte was detected in one sample but not the other, half the reporting limit was used as the concentration for the sample with no analyte detected.

Volatile Organic Compounds analyzed by U.S. EPA Method 8260B

1,4-Dioxane analzyed by U.S. EPA Method 8270C

Per the 1991 MEW Quality Assurance Project Plan:

RPD = (X1-X2) /((X1+X2) / 2))*100 where X1 is the concentration in sample 1 and X2 is the concentration in sample 2.

UCL = 3*s where s is the standard deviation of the RPDs for that analyte.

Precision Acceptance Limit = average RPD + UCL

Abbreviations:

--- = not analyzed

< # = analyte not detected above the reporting limit of "#"

cis-1,2-DCE = cis-1,2-dichloroethene

DUP = duplicate sample collected at indicated location

J = the associated numerical value is the qualified as an approximate concentration of the analyte in the sample

NC = not calculated

PCE = Tetrachloroethene

RPD = Relative Percent Difference

TCE = Trichloroethene

UCL = Upper Confidence Level

UJ = the analyte was not detected at a level greater than or equal to the reporting limit. However, the reported reporting limit is approximate and may be inaccurate or imprecise.

µg/L = micrograms per liter

VOCs = volatile organic compounds

BOLD = RPD exceeds the Precision Acceptance Limit

Table 2b. Summary of Results for Metal and Cyanide Duplicate Samples Collected During Treatment System Sampling Events

Sample Location	Treatment System	Treatment System Owner	Sample Date	Antimony (µg/L)	Antimony RPD	Arsenic (µg/L)	Arsenic RPD	Chromium (µg/L)	Chromium RPD	Chromium, Hexavalent (µg/L)	Chromium, Hexavalent RPD	Copper (µg/L)	Copper RPD	Lead (µg/L)	Lead RPD	Mercury (µg/L)	Mercury RPD	Nickel (µg/L)	Nickel RPD	Selenium (µg/L)	Selenium RPD	Zinc (µg/L)	Zinc RPD	Cyanide (µg/L)	Cynaide RPD
N101-E	N101	RGRP	2/1/2012	--		--		--		--		1.2 J		--		--		--		5.3		--		--	
N101-E (DUP)	N101	RGRP	2/1/2012	--	--	--	--	--	--	--	--	2.3 J	63	--	--	--	--	--	--	4.4	19	--	--	--	--
N101-E	N101	RGRP	5/2/2012	--		--		--		--		<2.3		--		--		--		6.4		--		--	
N101-E (DUP)	N101	RGRP	5/2/2012	--	--	--	--	--	--	--	--	<2.3	NC	--	--	--	--	--	--	6.8	6	--	--	--	--
N101-E	N101	RGRP	8/22/2012	--		--		--		--		--		--		--		--		7.2		--		--	
N101-E (DUP)	N101	RGRP	8/22/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.9	4	--	--	--	--
N101-E	N101	RGRP	11/12/2012	<0.50		0.74		0.28 J		0.25 J		0.39 J		<0.25		0.00032 J		0.84		5.1		1.6		<1	
N101-E (DUP)	N101	RGRP	11/12/2012	0.06 J	123	0.76	3	0.28 J	0	0.22 J	13	0.40 J	3	<0.25	NC	0.00046 J	36	0.81	4	4.7	8	1.7	6	<1	NC
T3-E	System 3	Fairchild	11/13/2012	0.05 J		0.64		<0.50		0.088 J		0.67		0.09		<0.0005		0.43 J		4.3		5.7		<1	
T3-E (DUP)	System 3	Fairchild	11/13/2012	0.06 J	18	0.64	0	<0.50	NC	0.11 J	22	0.68	1	0.09	0	<0.0005	NC	0.39 J	10	4.6	7	5.5	4	<1	NC
Average RPD					70		1		0		17		22		0		36		7		9		5		NC
Upper Confidence Level (three standard deviations)					157		4		NC		14		86		NC		NC		10		15		4		NC
Precision Acceptance Limit					**227**		**5**		**NC**		**31**		**108**		**NC**		**NC**		**16**		**24**		**9**		**NC**

Notes:

For duplicate pairs where one analyte was detected in one sample but not the other, half the reporting limit was used as the concentration for the sample with no analyte detected.

Mercury analyzed by USEPA Method E1631

Hexavalent chromium analyzed by USEPA Method 7199

Other metals analyzed by USEPA Method 200.8

Per the 1991 MEW Quality Assurance Project Plan:

RPD = (X1-X2) /((X1+X2) / 2))*100 where X1 is the concentration in sample 1 and X2 is the concentration in sample 2.

UCL = 3*s where s is the standard deviation of the RPDs for that analyte.

Precision Acceptance Limit = average RPD + UCL

Abbreviations:

< # = analyte not detected above the reporting limit of "#"

-- = not analyzed

DUP = duplicate sample collected at indicated location

J = the associated numerical value is the qualified as an approximate concentration of the analyte in the sample

NC = not calculated

RPD = Relative Percent Difference

UCL = Upper Confidence Level

µg/L = micrograms per liter

BOLD = RPD exceeds the Precision Acceptance Limit

Table 2c. Summary of Detections for Travel Blanks Collected During Treatment System Sampling Events

Sample Name	Treatment System Owner	Treatment System	Sample Date	Lab/Method	Detections
TB-03-120301	Fairchild	System 3	3/1/2012	CT/8260	0.1 µg/L chloroform
TB-03-120405	Fairchild	System 3	4/13/2012	CT/8260	0.1 µg/L chloroform
TB-03-120503	Fairchild	System 3	5/3/2012	CT/8260	0.1 µg/L chloroform
TB-03-120607	Fairchild	System 3	6/7/2012	CT/8260	0.2 µg/L methylene chloride
TB-19-120503	Fairchild	System 19	5/3/2012	CT/8260	0.1 µg/L chloroform
TB-19-120607	Fairchild	System 19	6/7/2012	CT/8260	0.1 µg/L methylene chloride
TB-S1-120301	RGRP	South 101	3/1/2012	CT/8260	0.1 µg/L chloroform
TB-S1-120503	RGRP	South 101	5/3/2012	CT/8260	0.1 µg/L chloroform
TB-S1-120607	RGRP	South 101	6/7/2012	CT/8260	0.2 µg/L methylene chloride

Notes:

No volatile organic compounds detected above method detection limits in 51 other travel blank samples analyzed by EPA Method 8260.

Abbreviations:

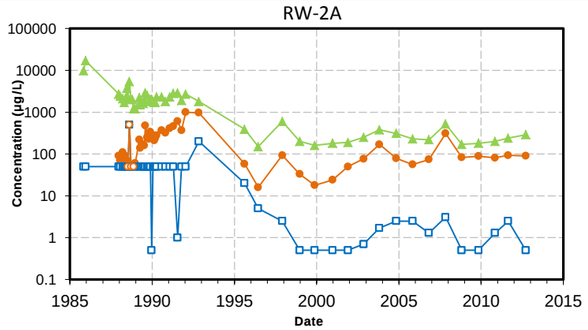
CT = Curtis and Tompkins

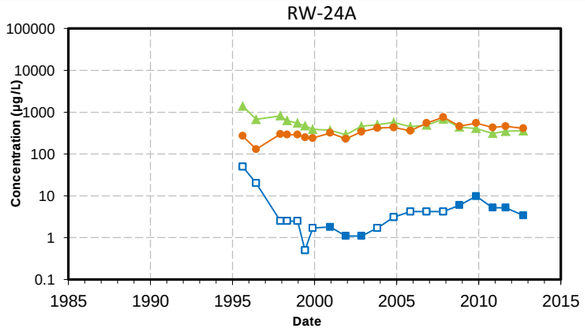
EPA = United States Environmental Protection Agency

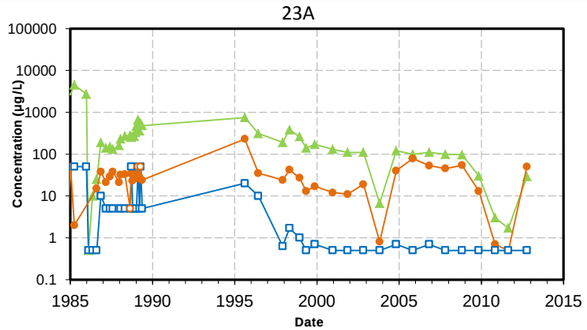
µg/L = micrograms per liter

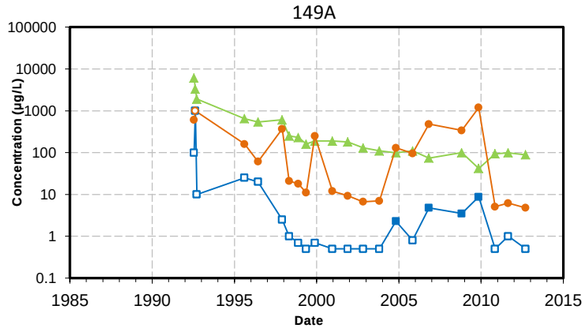
APPENDIX D

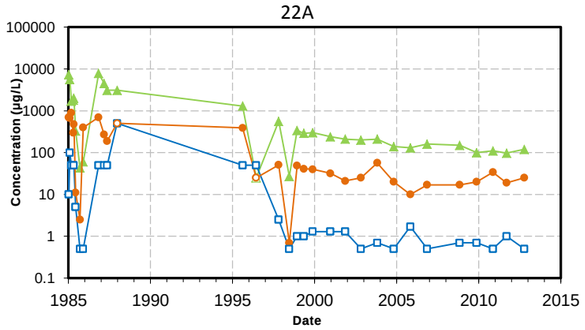
Selected VOC versus Time Graphs

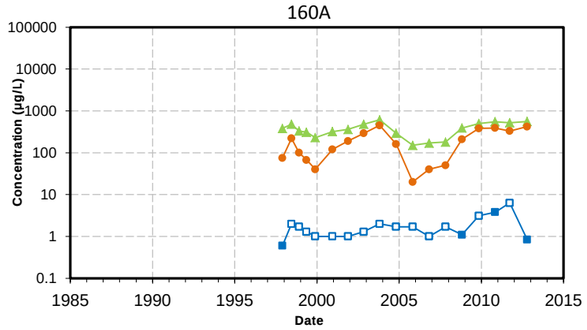


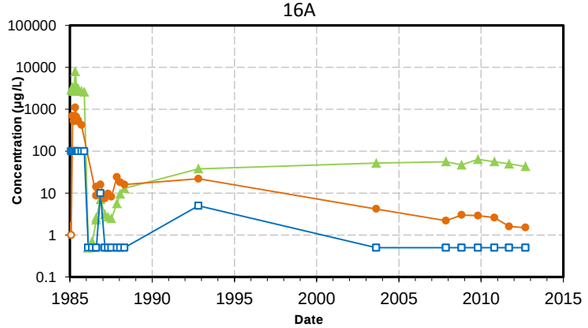


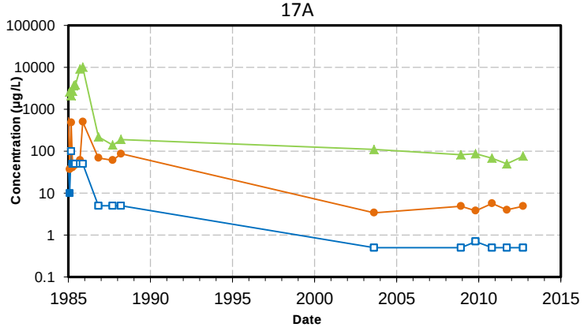


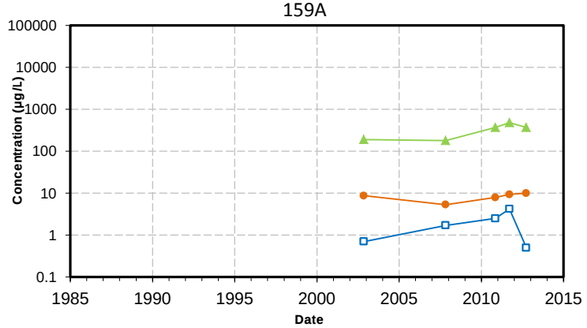


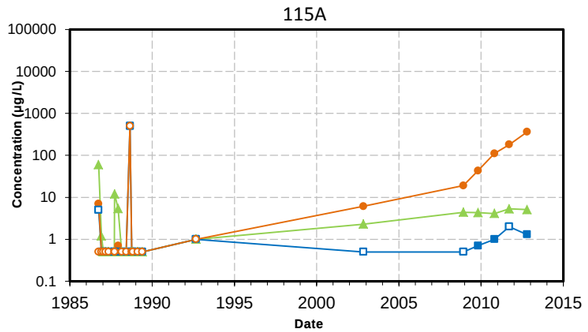


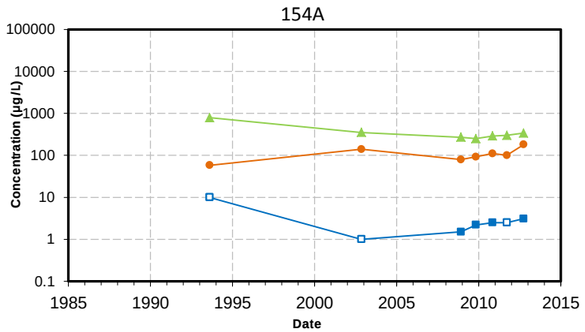


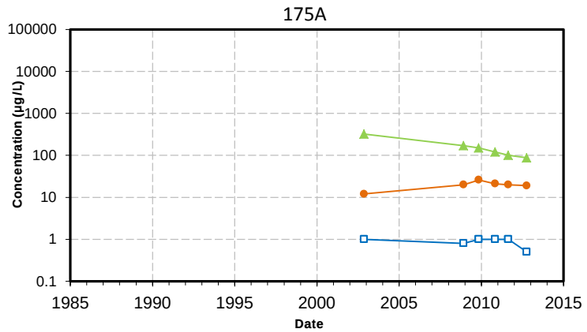






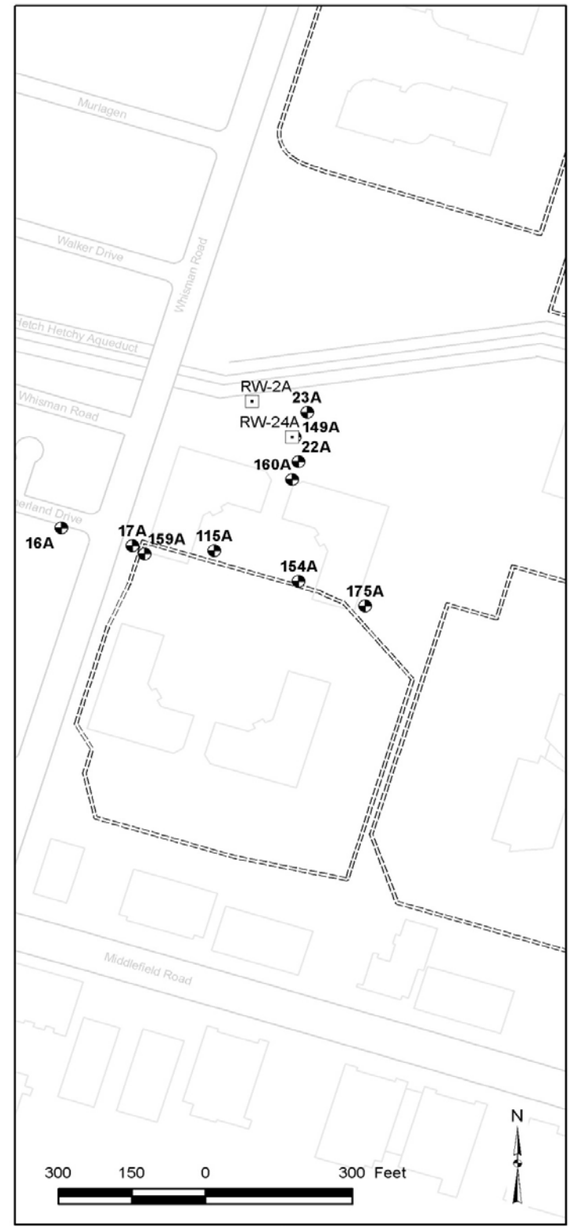






Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols are non-detects, presented at limit of quantification



16A Monitoring Well

RW-2A Extraction Well (On)

Chlorinated Ethenes in Groundwater
A Aquifer Wells

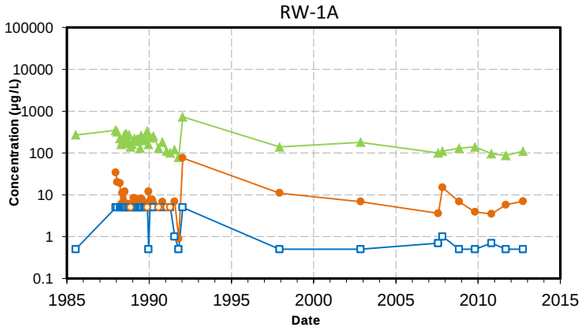
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

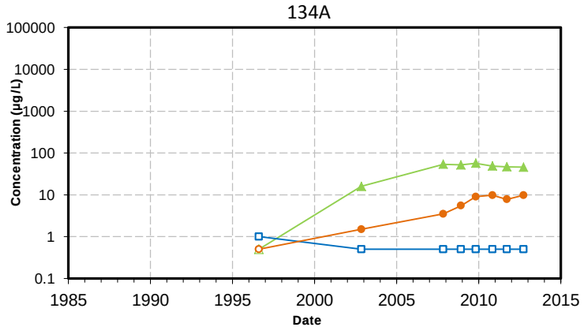
Geosyntec consultants

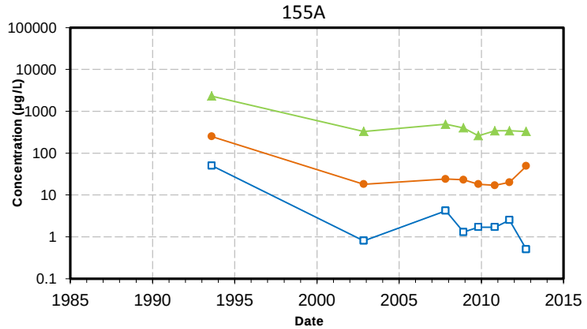
Oakland | April 2013

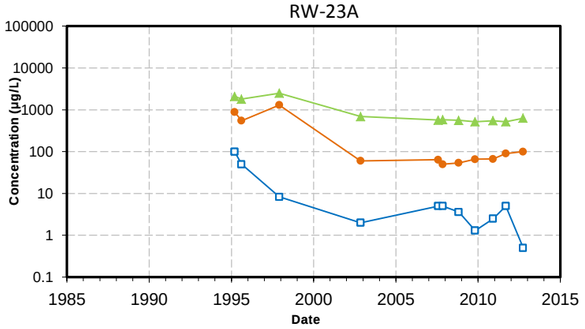
Figure **D-1**

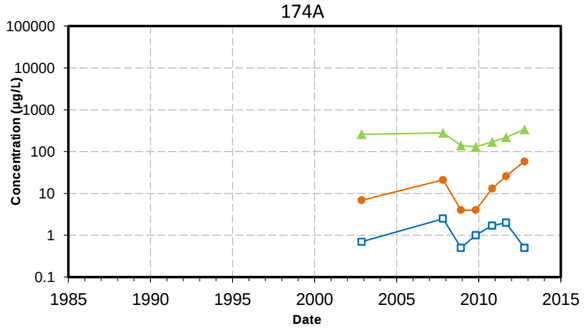
\\Oakland-01\Data\GIS\MEW\Excel\Fairchild\2012_AR\Building19\[FigD-1_TimeSeries.xlsx]

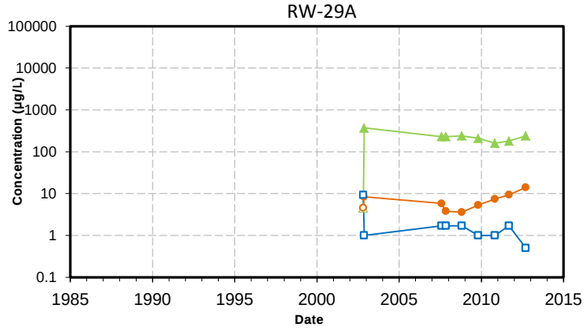


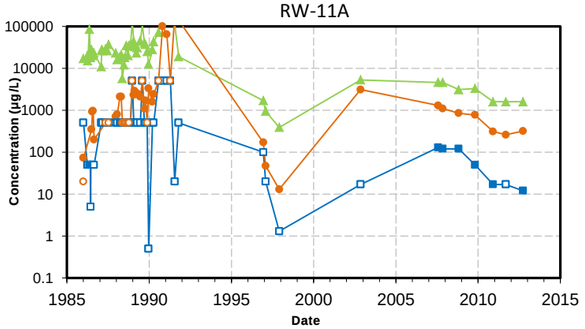


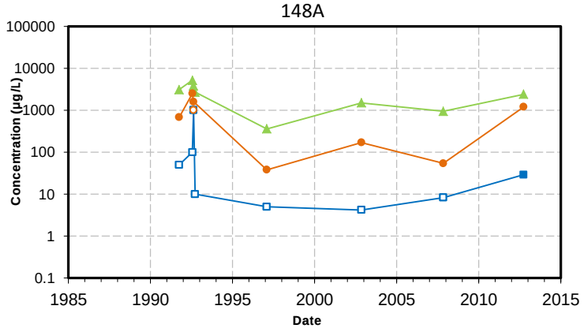


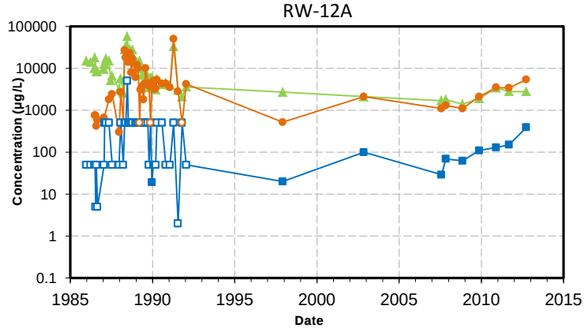


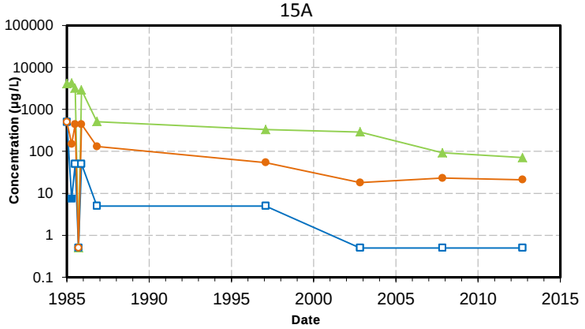


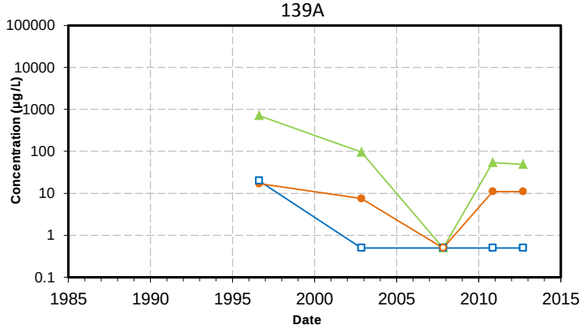


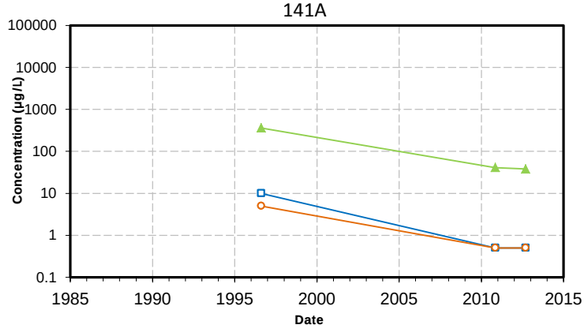






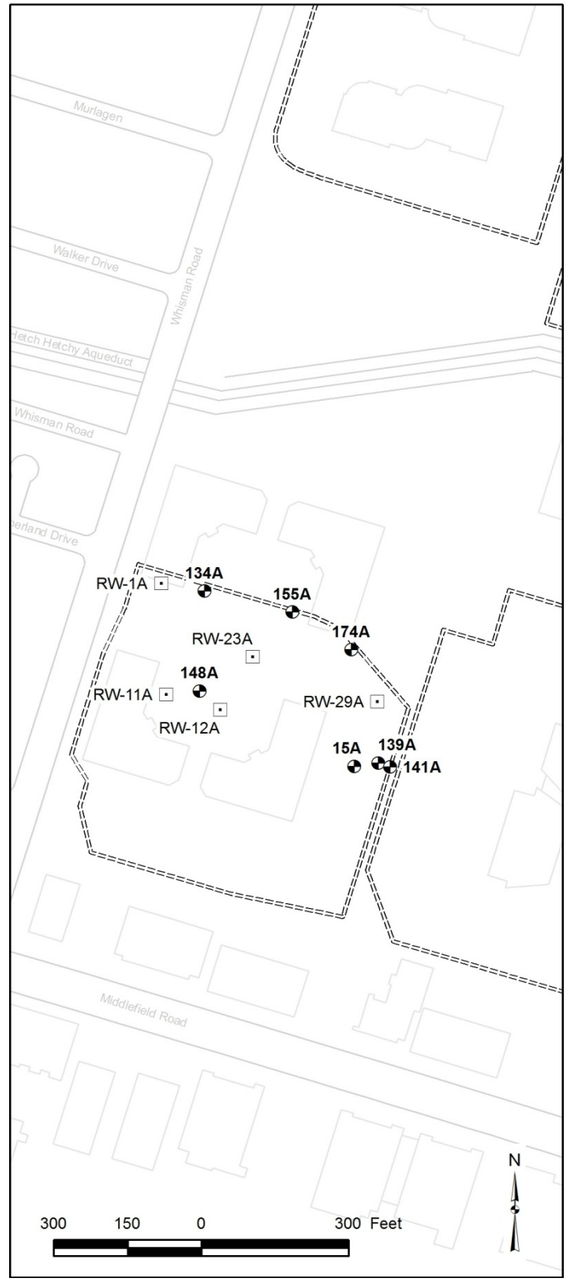






Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols are non-detects,
presented at limit of quantification



148A Monitoring Well

RW-1A Extraction Well (On)

Chlorinated Ethenes in Groundwater
A Aquifer Wells

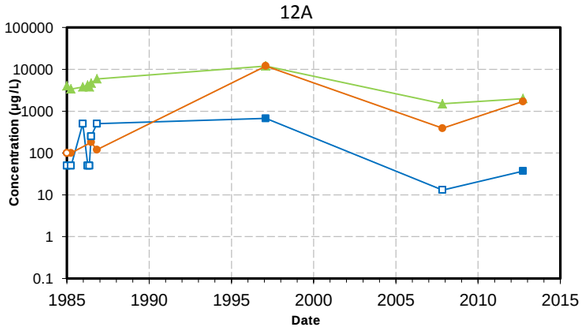
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

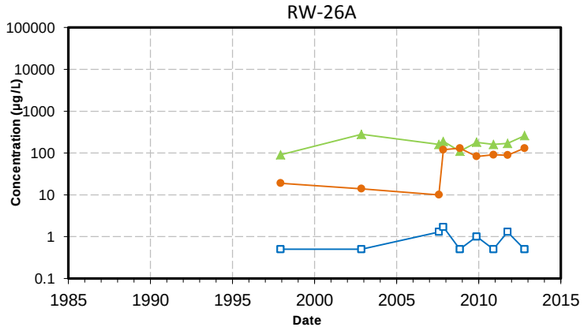
Geosyntec consultants

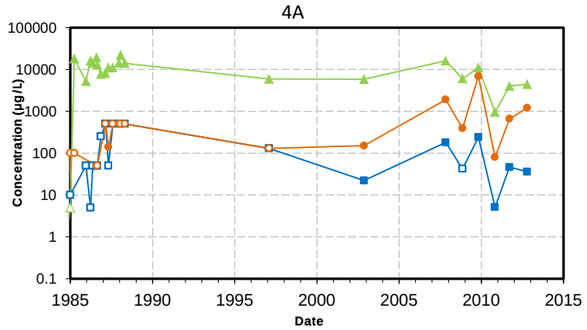
Oakland | April 2013

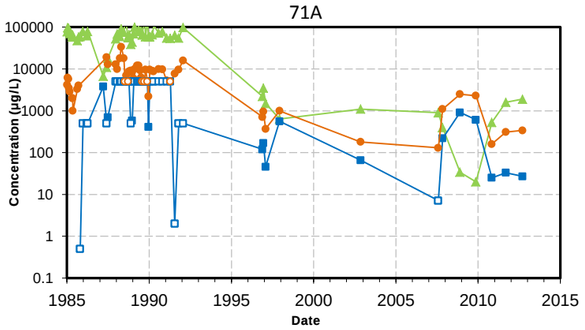
Figure **D-2**

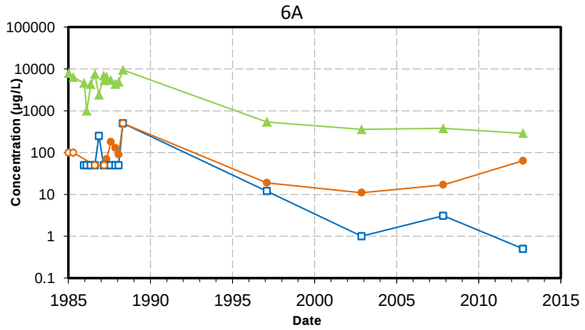
P:\GIS\MEW\Excel\Fairchild\2012_AR\Building19\[FigD-2_TimeSeries.xlsx]

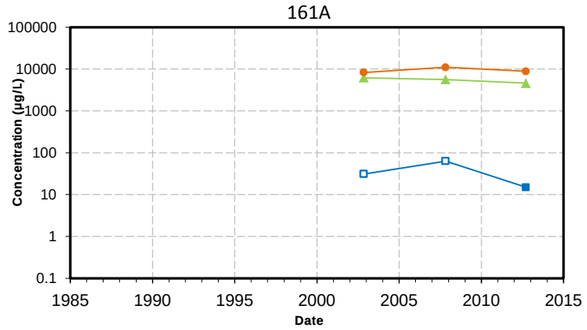


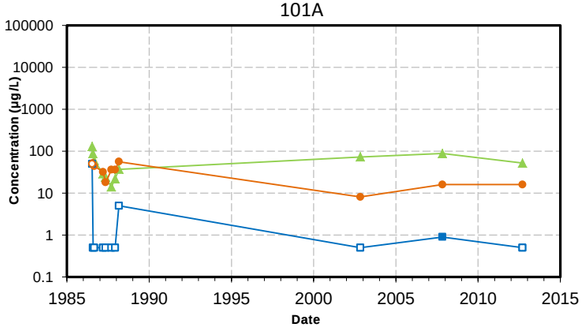


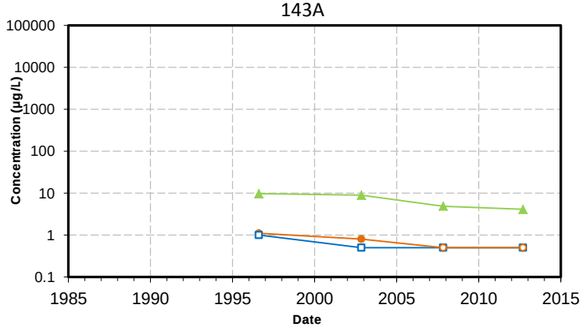


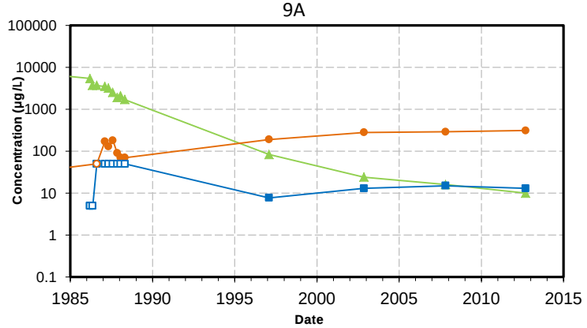


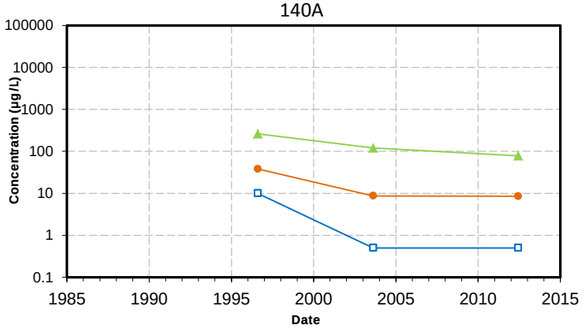












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols are non-detects, presented at limit of quantification

140A Monitoring Well
RW-26A Extraction Well (On)

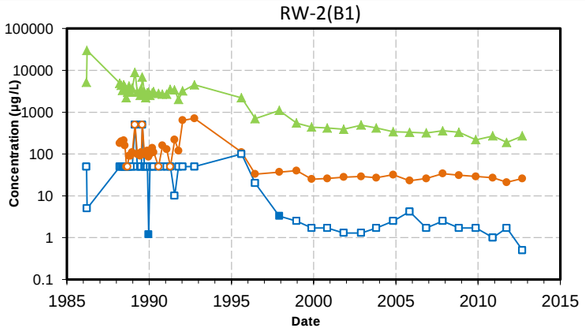
Chlorinated Ethenes in Groundwater
A Aquifer Wells
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

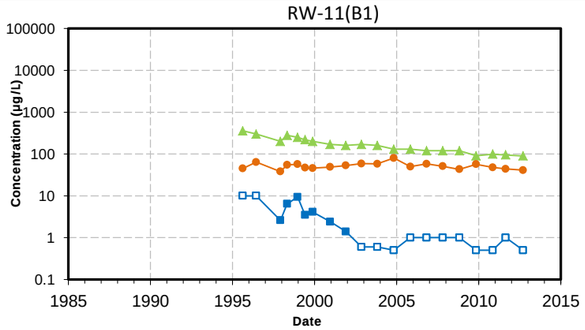
Geosyntec consultants

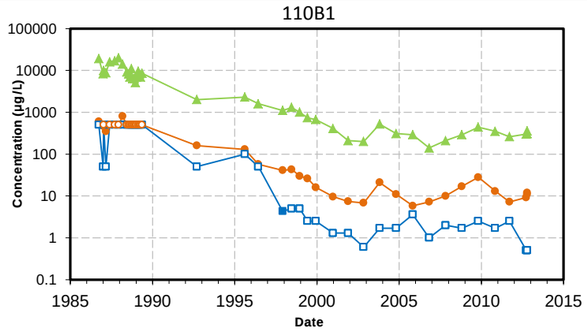
Oakland | April 2013

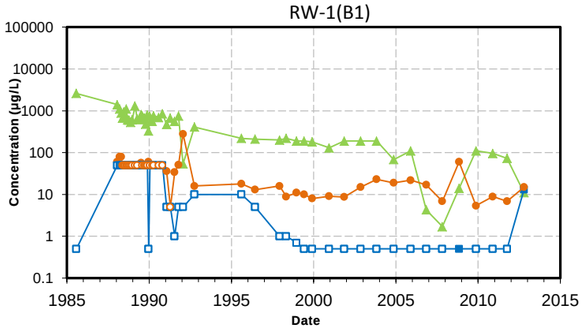
Figure **D-3**

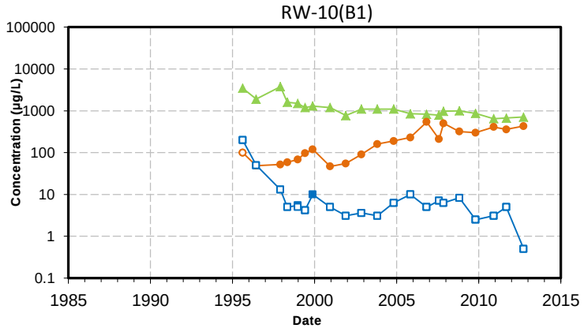
\\Oakland-01\Data\GIS\MEW\Excel\Fairchild\2012_AR\Building19\[FigD-3_TimeSeries.xlsx]

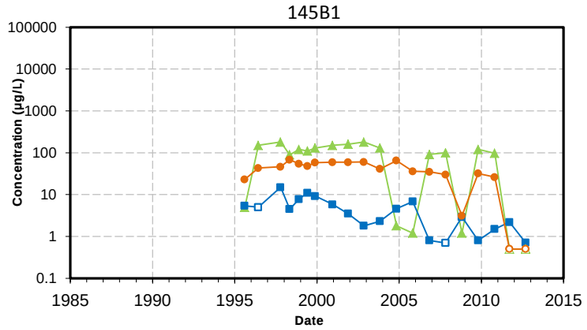


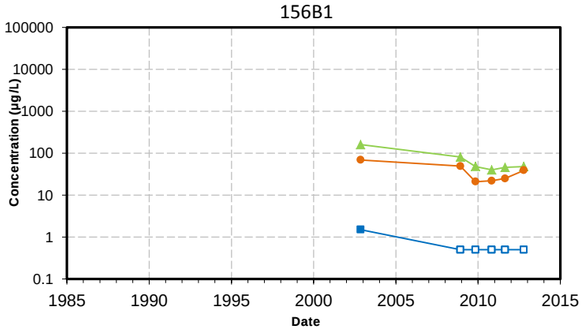


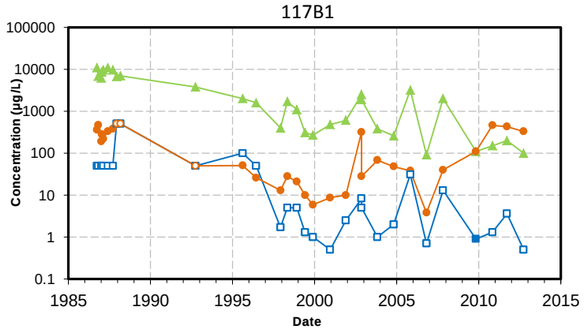


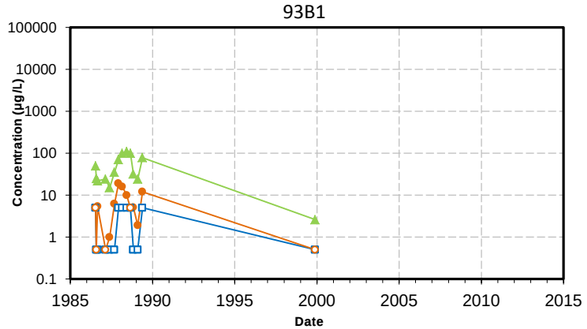


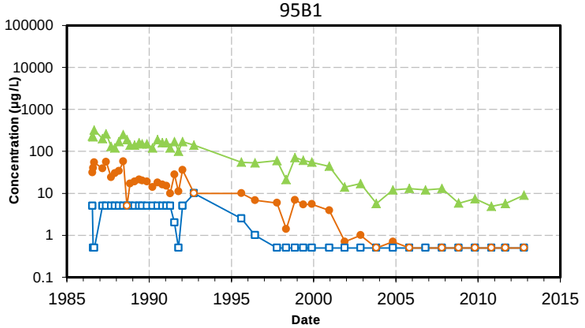


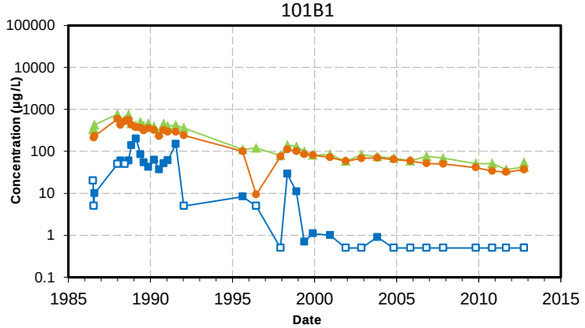






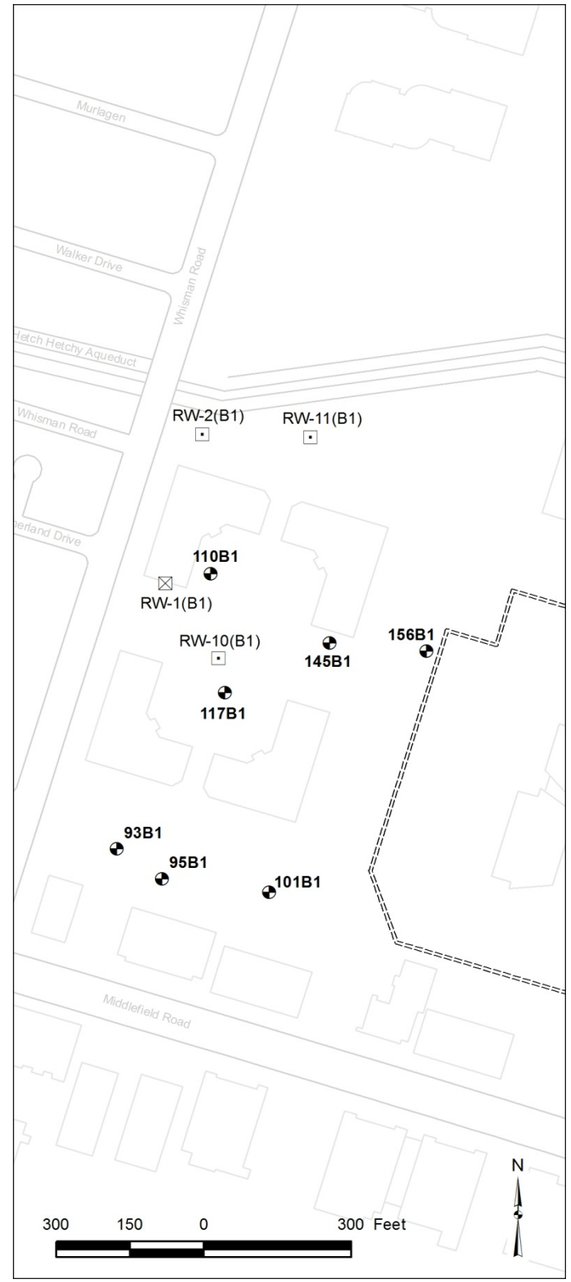






Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols are non-detects, presented at limit of quantification



93B1 Monitoring Well
RW-10(B1) Extraction Well (On)
RW-1(B1) Extraction Well (Off)

Chlorinated Ethenes in Groundwater
B1 Aquifer Wells
MEW Former Fairchild Buildings 13, 19, and 23 Groundwater Remediation Program
Mountain View, California

Geosyntec consultants

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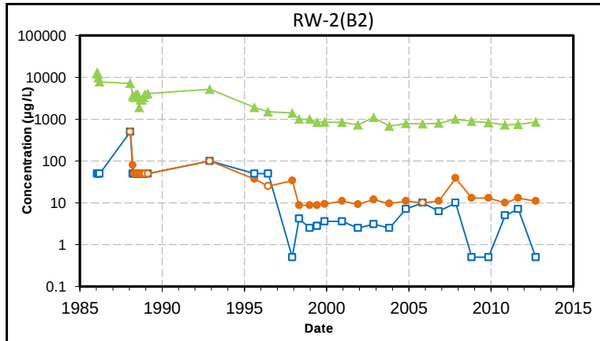
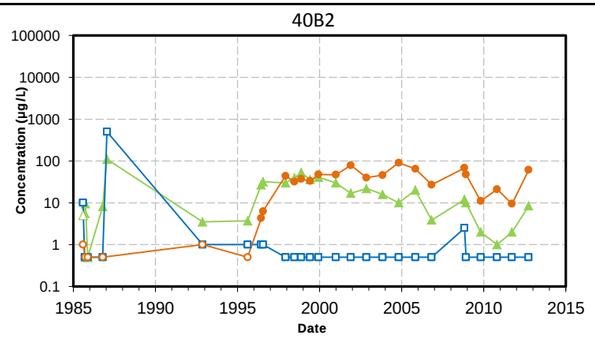
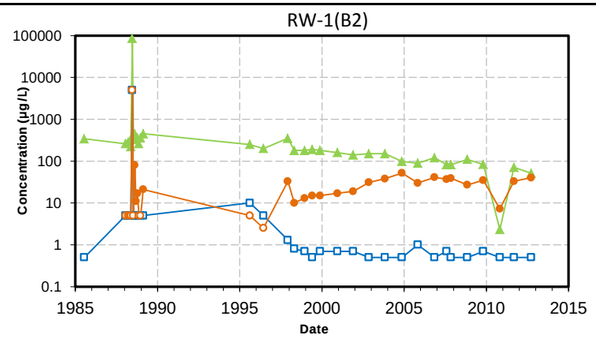
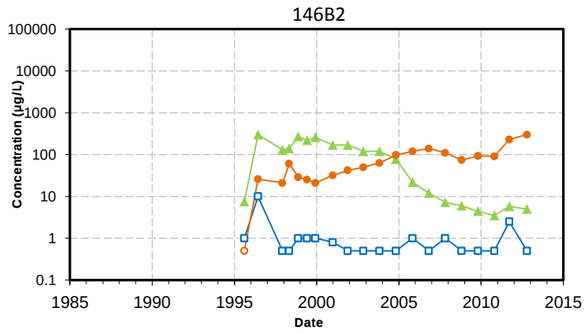
Figure **D-4**

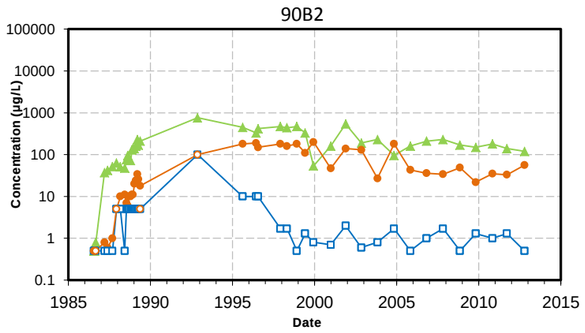
\\Oakland-01\Data\GIS\MEW\Excel\Fairchild\2012_AR\Building19\[FigD-4_TimeSeries.xlsx]

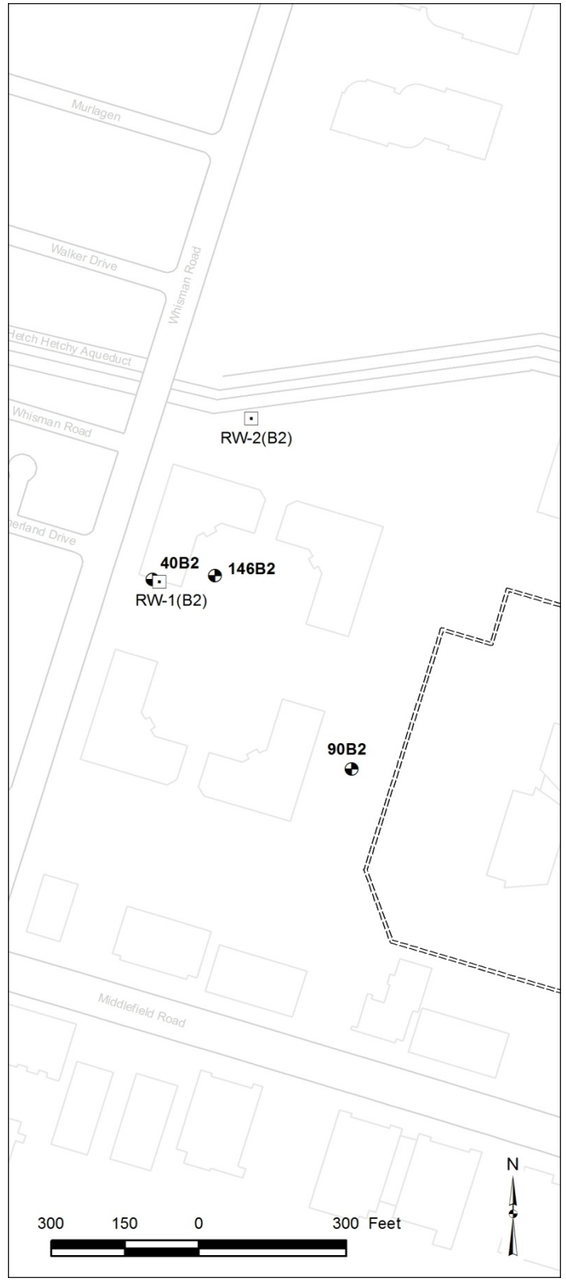












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

Note:
Open symbols are non-detects, presented at limit of quantification

40B2 Monitoring Well

RW-1(B2) Extraction Well (On)

Chlorinated Ethenes in Groundwater
B2 Aquifer Wells

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

Geosyntec consultants

Figure **D-5**

Oakland | April 2013

\\Oakland-01\Data\GIS\MEW\Excel\Fairchild\2012_AR\Building19\[FigD-5_TimeSeries.xlsx]