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April 15, 2016

Alana Lee
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Subject: **2015 Annual Progress Report – Former Fairchild Buildings 1-4, 9, and 18**
Middlefield-Ellis-Whisman ("MEW") Area
Mountain View, California

Dear Ms. Lee:

Attached please find the 2015 Annual Progress Report for Former Fairchild Buildings 1-4, 9, and 18, 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 2015 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
100 Gillingham Lane
Sugar Land, Texas 77478

2015 ANNUAL PROGRESS REPORT
FORMER FAIRCHILD
BUILDINGS 1-4, 9, and 18
MIDDLEFIELD-ELLIS-WHISMAN AREA
MOUNTAIN VIEW, CALIFORNIA

Prepared by

Geosyntec consultants

engineers | scientists | innovators

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Project Number: WR1133D

15 April 2016

2015 Annual Progress Report
Former Fairchild Buildings 1-4, 9, and 18
Middlefield-Ellis-Whisman Area
Mountain View, California

Prepared by

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Project Number: WR1133D
15 April 2016

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
106 Order	Section XV of the *1990 Administrative Order for Remedial Design and Remedial Action*
bgs	below ground surface
Buildings 1 and 2	Former Fairchild facilities located at 515 and 545 Whisman Road
Buildings 3 and 4	Former Fairchild facilities located at 313 and 323 Fairchild Drive
Building 9	Former Fairchild facilities located at 401 National Avenue
Building 18	Former Fairchild facilities located at 644 National Avenue
Building 20	Former Fairchild facilities located at 464 Ellis Street
cis-1,2-DCE	*cis*-1,2-dichloroethene
EPA	United States Environmental Protection Agency
Fairchild	Fairchild Semiconductor Corporation
ft	feet
ft/day	feet per day
ft2/day	square feet per day
GAC	granular activated carbon
GETS	groundwater extraction and treatment system
Geosyntec	Geosyntec Consultants
gpm	gallons per minute
GSLIB	Geostatistical Software Library
HLA	Harding Lawson Associates, Inc.
ISCO	*in situ* chemical oxidation
ISCO Pilot Study	*in situ* chemical oxidation pilot study at 401 National Avenue (Former Fairchild Building 9)

K	hydraulic conductivity
Locus	Locus Technologies
MCLs	maximum contaminant levels
MEW	Middlefield-Ellis-Whisman
NAP	National Avenue Partners, LLC
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
PCE	tetrachloroethene
PLC	programmable logic controller
PRB	permeable reactive barrier
PRPs	potentially responsible parties
QA/QC	quality assurance/quality control
RAO	remedial action objective
RGRP	Regional Groundwater Remediation Program
ROD	*Record of Decision*
RRW	regional recovery extraction well
SCADA	supervisory control and data acquisition
Schlumberger	Schlumberger Technology Corporation
SCRWs	source control recovery extraction wells
SCVWD	Santa Clara Valley Water District
Smith	Smith Technology Corporation
SUMCO	SUMCO Phoenix Corporation
SVE	soil vapor extraction
System 1	Groundwater treatment system located at 515 Whisman Road
System 3	Groundwater treatment located at 313 Fairchild Drive

TCE	trichloroethene
VC	vinyl chloride
Vishay	Vishay GSI, Inc.
VOCs	volatile organic compounds
Water Board	California Regional Water Quality Control Board – San Francisco Bay Region
WDRs	Waste Discharge Requirements
Weiss	Weiss Associates
Work Plan	Final Work Plan for In Situ Chemical Oxidation Pilot Study
ZVI	zero valent iron

1. INTRODUCTION

This 2015 Annual Progress Report was prepared by Geosyntec Consultants, Inc. (Geosyntec) with assistance from Weiss Associates (Weiss) on behalf of Schlumberger Technology Corporation (Schlumberger) for the former Fairchild Semiconductor Corporation (Fairchild) facilities located at 515 and 545 Whisman Road (Buildings 1 and 2), 313 and 323 Fairchild Drive (Buildings 3 and 4), and 401 and 644 National Avenue (Buildings 9 and 18), in Mountain View, California (Figures 1 through 3). The former 401 National Avenue property is part of a joint source control responsibility. An annual progress report that includes the area of the former 401 National Avenue property outside of the Former Fairchild Building 9 slurry wall is submitted under separate cover (AMEC Foster Wheeler, 2016).

This report summarizes activities performed at the Former Fairchild Buildings 1-4, 9, and 18 remediation areas (Buildings 1-4, 9, and 18 Sites) from 1 January to 31 December 2015, and provides 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 subsequent EPA correspondence prescribing Annual Report contents (EPA, 1990a, 2005, and 2011).

1.1 Site Background

The Buildings 1-4, 9, and 18 Sites lie within the Middlefield-Ellis-Whisman (MEW) study area, an approximate one-quarter square mile area bounded by Middlefield Road on the south, Ellis Street on the east, Whisman Road on the west, and California Highway 101 on the north, in Mountain View, California (Figures 1 and 2).

The primary constituents of concern at the Buildings 1-4, 9, and 18 Sites are trichloroethene (TCE) and its reductive dechlorination breakdown products, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC). Remedial actions for the MEW study area, including the Buildings 1-4, 9, and 18 Sites, are specified in a 1989 *Record of Decision* (ROD) issued by the EPA and two subsequent *Explanations of Significant Difference* (EPA, 1989, 1990b, 1996). Remedial actions within the MEW study area include facility-specific activities by the individual potentially responsible parties (PRPs) and a Regional Groundwater Remediation Program (RGRP) that addresses areas

of commingled volatile organic compounds (VOCs) that have migrated beyond the facility-specific areas and cannot be attributed to a single source.

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, groundwater extraction wells were installed at the Buildings 1-4, 9, and 18 Sites between 1982 and 1986. In 1986, soil-bentonite slurry walls were constructed at the Buildings 1-4 and 9 Sites from the ground surface to the A/B Aquitard. A description of the remedy for each site is provided in Section 1.3. Site-specific background information is provided in the following sections.

1.1.1 Buildings 1-4

From the early 1960s to 1989, Former Fairchild Buildings 1-4 operated as facilities for chemical mixing and silicon wafer manufacturing at Fairchild's Linear Division. The buildings were demolished in the 1990s, and new commercial/research offices were constructed and completed by September 2000 (Jay Paul Company, 2010). The previous and current addresses of Former Fairchild Buildings 1-4 are provided below:

Previous Address	Current Address
Buildings 1 and 2 515/545 North Whisman Road	515/545 North Whisman Road
Buildings 3 and 4 313 Fairchild Drive	313/323 Fairchild Drive

1.1.2 Building 9

From 1966 to 1987, Former Fairchild Building 9 operated as a facility for receiving, mixing, and delivering chemicals for Fairchild. In 2013 the 401 National Avenue property was purchased by National Avenue Partners, LLC (NAP) and in May 2014 redevelopment of 401 National Avenue was approved by the City of Mountain View in conjunction with three properties to the north. As part of the redevelopment, 401 National Avenue and the properties located to the immediate north (620 through 640

[1] The soil cleanup goals have been met at MEW (EPA, 2004). Soil cleanup actions were completed by 1996 and included soil vapor extraction (SVE) with treatment by vapor-phase granular activated carbon (GAC) and soil excavation with treatment by aeration.

National Avenue) have been consolidated into a single address: 600 National Avenue (Figure 2).

Redevelopment activities include the construction of a two-story parking garage over most of the former 401 National Avenue property and construction of a four-story office building to the north. The former Building 9 was demolished in November 2014 as part of redevelopment activities and the construction of the parking garage was ongoing through 2015. Construction activities at the Site are expected to be completed in 2016.

1.1.3 Building 18

From 1966 to 1984, Former Fairchild Building 18 operated as an electroplating facility for Fairchild.

The original Fairchild Building 18 structure was located at 644 National Avenue. The property was purchased by Carr America National Avenue, LLC in 2007. Redevelopment of the property began in 2012 and was completed in 2013. Redevelopment included demolishing the former Fairchild Building 18 and construction of a surface parking lot on the former Fairchild Building 18 Site. As part of the redevelopment, the former Fairchild Building 18 property was consolidated with properties to the north, and the new address is 331 Fairchild Drive (Figure 2).

1.2 Local Hydrogeology

The MEW study area is located in 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 is subdivided into two water-bearing zones: 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 further 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 MEW study area.

The water-bearing zones defined at the Buildings 1-4, 9, and 18 Sites are summarized below.

Water-Bearing Zones	Approximate Depth Interval
A Zone	15 to 40 feet bgs
B1 Zone	45 to 75 feet bgs
B2 Zone	75 to 105 feet bgs

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 MEW study area is generally towards the north in the A and B Zones under 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 Zone to the A Zone but is locally downward in some areas of the Buildings 1-4, 9, and 18 Sites

[2] Estimates from pumping tests conducted at the MEW study area from 1986 through 2005 (Canonie, 1986a, 1986b, 1987, 1988; Geomatrix, 2004; HLA, 1986, 1987; Locus, 1998; PRC, 1991; Navy, 2005; and Weiss, 1995, 2005)

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

1.3 Description of the Remedy

As specified in the ROD, the current remedies consist of slurry wall containment and/or groundwater extraction and treatment.

The groundwater extraction and treatment systems are 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 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 in the MEW study area is such that achieving the cleanup goal for TCE will result in cleanup of the other chemicals to at least their respective federal maximum contaminant levels (MCLs).

Extraction well networks are used to remove groundwater at the Buildings 1-4, 9, and 18 Sites (Tables 1a through 1c). Through November 2015, extracted groundwater was pumped through conveyance piping to treatment facilities located at 515 North Whisman Road (System 1) or 313 Fairchild Drive (System 3). Beginning in November 2015 following realignment of the Systems 1 and 3 piping networks, extracted groundwater from the networks was conveyed to a consolidated treatment plant at the location of the RGRP South of 101 groundwater extraction and treatment system (RGRP South of 101 GETS). Details on pipeline realignment and system consolidation are provided in Section 2.1.3. The treated water is monitored and sampled in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit, then discharged to the storm water sewer. Soil-bentonite slurry walls were constructed in the A Zone at the Buildings 1-4 and Building 9 sites to prevent VOC migration from the source zones.

[3] The objectives of the groundwater remedy design are described in the ROD and the Feasibility Study for the MEW study area (Canonie, 1988).
[4] Groundwater cleanup goals are presented in the ROD.

Effectiveness of the Buildings 1-4, 9, and 18 remedies is evaluated using a network of monitoring wells. Construction summaries for these wells are provided in Tables 1a, 1b, and 1c. The wells are monitored according to the schedules provided in Tables 2a, 2b, and 2c, respectively. On 13 February 2015, Geosyntec submitted the letter titled *Request for Reduction in Groundwater Monitoring Frequency* to EPA, which presented an evaluation of historical monitoring data at the Sites and a request to reduce the groundwater monitoring frequency at the former Fairchild facilities to an annual basis (water level gauging) or biennial basis (VOC sampling) (Geosyntec, 2015c). In a letter dated 16 March 2016, EPA conditionally approved a trial reduction of groundwater monitoring and sampling frequency at the MEW study area (EPA, 2016). Accordingly, Fairchild monitoring wells were not sampled in 2015 so groundwater sampling on a biennial basis can be evaluated as part of the 2016 Annual Progress Report.[5] The next planned groundwater sampling event will be in September 2016.

1.4 Summary of 2015 Site Activities and Deliverables

Tables 2a through 2c provide the 2015 monitoring and reporting schedule for the Buildings 1-4, 9, and 18 Sites Groundwater Remediation Programs. Ongoing activities include:

- Groundwater monitoring and reporting, including annual sampling and semiannual water level gauging;
- Groundwater extraction and treatment at Buildings 1-4 (Systems 1 and 3, through October 2015) or Building 18 (Consolidated RGRP South of 101 GETS, beginning November 2015);
- Operation and maintenance (O&M) of treatment systems at Buildings 1-4 or Building 18;
- Sampling the treatment systems monthly in compliance with the General Waste Discharge Requirements (WDRs) issued by the California Regional Water Quality Control Board – San Francisco Bay Region (Water Board) for discharge or reuse of extracted and treated groundwater resulting from cleanup of

[5] As required by EPA's conditional approval, groundwater monitoring that is required as part of the *in situ* chemical oxidation (ISCO) pilot study at the former Fairchild Building 9 is being conducted in accordance with the EPA approved work plan for the pilot study (Section 3.3).

groundwater polluted by VOCs (NPDES Permit No. CAG912002 and Order No. R2-2012-0012);

- Assessment of remedial progress;
- Optimization of the groundwater remedies, as directed by EPA (Sections 3.3 and 6); and
- Planning for future remedial activities.

Specific activities and deliverables by month in 2015 are listed below:

January 2015

- 16 January – Submitted the *Addendum to the Final Work Plan for In Situ Chemical Oxidation* (ISCO) *Pilot Study* (ISCO Pilot Study, Section 6) for the former Fairchild Building 9 to EPA (Geosyntec, 2015a).
- 28 January to 11 February – Installation and development of monitoring and injection wells for the ISCO Pilot Study at the former Fairchild Building 9.
- 30 January – Submitted the *Zero-Valent Iron* (ZVI) *Permeable Reactive Barrier* (PRB) *Evaluation and Treatability Study Work Plan* for the former Fairchild Building 9 to EPA (Geosyntec, 2015b).

February 2015

- 11 February – Submitted the *Fourth Quarter and Annual 2014 NPDES Self-Monitoring Reports for Systems 1 and* 3 (Weiss, 2015a; 2015b).
- 11 February to 13 February – Conducted baseline sampling for the ISCO Pilot Study at the former Fairchild Building 9.
- 13 February – Submitted the letter *Request for Reduction in Groundwater Monitoring Frequency* to EPA, which presented an evaluation of historical monitoring data and a request to reduce the groundwater monitoring frequency at the former Fairchild facilities (Geosyntec, 2015c).
- 17 February to 2 March – Implemented the first round of ISCO Pilot Study injections at former Fairchild Building 9.

March 2015

- 2, 16, and 25 March – Transmitted email updates to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 3, 6, 9, 16-18, 24, and 31 March – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.[6]
- 19 March – Collected semiannual groundwater elevation measurements in monitoring and extraction wells at the Buildings 1-4, 9, and 18 Sites and collected quarterly groundwater elevation measurements in slurry wall well pairs at the Buildings 1-4 and 9 sites.

April 2015

- 2 and 16 April – Transmitted email updates to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 1, 7, 14-15, 21-22, and 28-30 April – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.
- 15 April – Submitted the 2014 Annual Progress Report for Former Fairchild Buildings 1-4, 9, and 18 to the EPA and other parties in accordance with the MEW distribution list (Geosyntec, 2015d).

May 2015

- 1 and 15 May – Transmitted email updates to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 7-8, 13-14, 19-20 and 26-27 May – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.
- 11 May – Submitted the *First Quarter 2015 NPDES Self-Monitoring Reports for Systems 1 and 3* (Weiss, 2015c; 2015d).
- 15 May – Collected quarterly groundwater elevation measurements in slurry wall well pairs at the Buildings 1-4 and 9 Sites.

[6] Monitoring was conducted in accordance with the approved Pilot Study *Work Plan* and *Addendum* (Geosyntec, 2014b, 2015a) and data is provided in Appendix E.

- 27 May – Destroyed six temporary ISCO Pilot Study injection wells at the Former Fairchild Building 9.[7]

June 2015

- 2 June – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 2, 9, 17, 23 and 30 June – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.

July 2015

- 2 July – Destroyed one temporary ISCO Pilot Study injection well at the Former Fairchild Building 9.
- 2 July – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 1-2, 7, 14, 21 and 28-30 July – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.
- 31 July – Submitted a letter notifying EPA of planned treatment pad upgrades at the RGRP South of 101 GETS (Geosyntec, 2015f).

August 2015

- 4, 11, 25-27 August – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.
- 5 August – Submitted a letter notifying EPA of planned pipeline realignments to the System 1 and System 3 extraction well networks such that groundwater from the networks would discharge to the RGRP South of 101 GETS for aboveground treatment and discharge (Geosyntec, 2015g).
- 14 August – Submitted the *Second Quarter 2015 NPDES Self-Monitoring Reports for Systems 1 and 3* (Weiss, 2015e; 2015f).

[7] Some ISCO Pilot Study temporary injection wells were destroyed in May and July 2015 due to their proximity to footers for the parking garage being constructed at the former 401 National Avenue property.

- 17 August – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 25 August through 28 August – Conducted potholing work to confirm the planned realignment of the System 1 and System 3 extraction well networks.
- 27 August – Submitted the *Work Plan for Monitoring Well 126A Destruction and Replacement*, *401-600 National Avenue, Mountain View, California* to EPA (Geosyntec, 2015h).

September 2015

- 3 September – Destroyed monitoring well 126A at the former 401 National Avenue property.[8]
- 8 September through 31 October – Implemented the planned System 1 and 3 extraction well pipeline realignments and the RGRP South of 101 GETS pad upgrades.
- 19 September – Collected semiannual groundwater elevation measurements from monitoring and extraction wells located at the Buildings 1-4, 9, and 18 Sites, and collected quarterly groundwater elevation measurements in slurry wall well pairs at the Buildings 1-4 and 9 sites.
- 21 September – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 29-30 September – Conducted groundwater sampling for the Former Fairchild Building 9 ISCO Pilot Study.

October 2015

- 26 October – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.
- 1, 27-29 October – Conducted groundwater sampling for the Former Fairchild Building 9 ISCO Pilot Study.

[8] Well 126A was destroyed at the request of NAP because the well was underlying the planned post-development location of the 401/405 National Avenue Shared Treatment System. EPA approved the well destruction on 2 September 2015 (EPA, 2015c). Well 126A will be relocated and replaced in 2016.

November 2015

- 5 November – Transmitted a Notification Letter to EPA regarding the second ISCO injection event planned at the Former Fairchild Building 9 Site (Geosyntec, 2015i).
- 11 November – Submitted the *Third Quarter 2015 NPDES Self-Monitoring Reports for Systems 1 and 3* (Weiss, 2015g; 2015h).
- 12 November – Collected quarterly groundwater elevation measurements in slurry wall well pairs at the Buildings 1-4 and 9 sites.
- 18-20 November – Conducted groundwater sampling for the Former Fairchild Building 9 ISCO Pilot Study.
- 19 November – Transmitted an email notifying EPA of the completion of the RGRP South of 101 GETS upgrade work and System 1 and 3 pipeline realignment and informing EPA that, moving forward, groundwater from the RGRP South of 101, System 1, and System 3 extraction well networks will flow to and be treated by the upgraded system located at the RGRP South of 101 treatment pad.
- 23 to 25 November – Implemented the second round of ISCO Pilot Study injections at the Former Fairchild Building 9.
- 23 November – Transmitted an email to EPA and other stakeholders summarizing the second ISCO Pilot Study injection event at the Former Fairchild Building 9.

December 2015

- 4, 9, 17, 21, 29-30 December – Collected monitoring data and/or groundwater samples for the Former Fairchild Building 9 ISCO Pilot Study.
- 31 December – Transmitted an email update to EPA and other stakeholders regarding the progress of the Former Fairchild Building 9 ISCO Pilot Study.

The 2015 Annual Report Remedy Performance Checklist is provided in Appendix A.

2. GROUNDWATER EXTRACTION AND TREATMENT

2.1 Extraction and Treatment System Description

Components of the groundwater extraction and treatment systems that were operational during 2015 are described in the following sections.

2.1.1 Treatment System 1

During 2015, System 1 included the following extraction and treatment components:

- Groundwater extraction from (Tables 3 and 4):
  - Four active source control recovery extraction wells (SCRWs); and
  - One active regional recovery extraction well (RRW);
- Double-contained groundwater conveyance piping and well vaults;
- One pad sump and sump pump;
- Two sediment filters in parallel;
- Three 5,000-pound liquid-phase granular active carbon (GAC) vessels in series; and
- Electrical distribution and control panels including:
  - A programmable logic controller (PLC); and
  - An auto-dialer.

The discharge of treated groundwater from the treatment system to the storm sewer is authorized by NPDES Permit CAG912002, Order No. R2-2012-0012.

2.1.2 Treatment System 3

During 2015, System 3 included the following extraction and treatment components:

- Groundwater extraction from (Tables 5 and 6):
  - Seven active SCRWs; and
  - Three active RRWs;

- Double-contained groundwater conveyance piping and well vaults;
- One pad sump and sump pump;
- Two sediment filters in parallel;
- Three 5,000-pound liquid-phase GAC vessels in series; and
- Electrical distribution and control panels including:
    - A PLC; and
    - An auto-dialer.

The discharge of treated groundwater from the treatment system to the storm sewer is authorized by NPDES Permit CAG912002, Order No. R2-2012-0012.

2.1.3 Consolidated RGRP South of 101 GETS

Beginning in November 2015, groundwater extracted from the Buildings 1-4, 9, and 18 Sites is treated at the upgraded RGRP South of 101 GETS (Section 3.3). Electrical distribution and controls for wells associated with Systems 1 and 3 extraction networks remain at the System 1 and System 3 enclosures. Current groundwater extraction and treatment components for the consolidated RGRP South of 101 GETS are as follows:

- Groundwater extraction from:
    - 11 active SCRWs; and
    - 14 active RRWs;
- Double-contained conveyance piping and well vaults;
- Infrastructure located at System 1 treatment pad:
    - Electrical distribution and control panels for extraction wells in System 1 well network, including a PLC and an auto-dialer.
- Infrastructure located at System 3 treatment pad:
    - Electrical distribution and control panels for extraction wells in System 3 network, including a PLC and an auto-dialer.
- Infrastructure located at the consolidated RGRP South of 101 GETS:
    - One 4,000-gallon atmospheric tank;

- Two groundwater transfer pumps;
- Four sediment filters in parallel;
- Three 10,000-pound liquid-phase GAC vessels in series; and
- Electrical distribution and control panels for extraction wells in the South of 101 network including:
  - A PLC;
  - An auto-dialer; and
  - A supervisory control and data acquisition (SCADA) computer.

2.1.4 Extraction Wells

Table 3 and Table 5 list the 2015 monthly and annual average flow rates for the fifteen operating and eleven offline extraction wells associated with the Systems 1 and 3 collection networks. Twenty-five of the extraction wells associated with the Systems 1 and 3 collection networks are located on the Buildings 1-4, 9, and 18 Sites and one extraction well (38B2) is located offsite.[9] A breakdown of the extraction wells and operations for each remediation program is as follows:

- **Buildings 1-4**: There are twenty SCRWs associated with the Buildings 1-4 Sites. Thirteen of the SCRWs operated in 2015, and the remaining seven wells are shut off with EPA approval (RMT, 2000; EPA, 2007; Geosyntec, 2010).
- **Building 9**: There are four SCRWs located inside of the slurry wall (AE/RW-9-1, AE/RW-9-2, RW-20A, and RW-21A) at the Building 9 Site. All four SCRWs were turned off in February 2015 with EPA approval as part of the ongoing ISCO pilot study at the Former Building 9 (Section 6). These wells will remain off until the pilot study concludes.

  Outside of the slurry wall, there are currently three SCRWs (one in each of the A, B1, and B2 Zones) associated with the Former Building 9 Site. The existing offsite SCRWs are located approximately 200 feet downgradient (north) of the

[9] Well 38B2 is associated with the RGRP, but because this well is connected to the System 1 extraction network, data related to the operation and maintenance of this well is provided in this report. Further discussion of 38B2 is provided in the RGRP 2015 *Annual Progress Report* (Geosyntec, 2016a).

Site and primarily provide Site containment. The location of the offsite SCRWs (GSF-1A, GSF-1B1, and GSF-1B2) are shown in Figure 3. Schlumberger and Vishay GSI, Inc. (Vishay)/SUMCO Phoenix Corporation (SUMCO) jointly operate wells GSF-1A, GSF-1B1, and GSF-1B2 by agreement as part of the source control measures for both 401 National Avenue and the adjacent 405 National Avenue property. These wells (referred to as the Shared SCRWs) are connected to the 401/405 National Shared Treatment Plant (also referred to as the Vishay/SUMCO treatment facility) that is located at the Former Building 9 Site. The Shared SCRWs provides containment of groundwater for site areas outside and below the slurry wall. Additional details related to the Shared SCRWs are provided in the Annual Progress Report for 405 National Avenue (AMEC Foster Wheeler, 2016).

- **Building 18**: There is one active SCRW (RW-25A) in the A Zone. Groundwater was also extracted from the Site in 2015 from RRWs REG-12A, REG-1B(1) and REG-1(B2).[10]

2.2 Extraction and Treatment System Operation and Maintenance

From 1 January through 12 November 2015, System 1 ran 96% of the time[11] and System 3 ran 90% of the time.[12] Beginning on 12 November 2015, flow from the System 1 and 3 extraction networks was directed to the consolidated RGRP South of 101 GETS. From 12 November 2015 through 31 December 2015, the consolidated RGRP South of 101 GETS ran 96% of the time.[13] A combined total of approximately 27.7 million gallons of groundwater were treated and 392 pounds of VOCs were removed by treatment Systems 1 and 3 during this reporting period (1 January through 12 November 2015; Weiss, 2016a,b). In November and December 2015, a total of approximately 9.1 million gallons of groundwater were treated and 107 pounds of VOCs were removed by the consolidated RGRP South 101 GETS (Geosyntec, 2016a).

As required by the NPDES Permit CAG912002, Order R2-2012-0012, extraction well and treatment system flow readings are recorded weekly, and the treatment systems are

[10] The groundwater extracted by the RRWs is treated at the RGRP South of 101 treatment system. Further discussion of the RRWs is provided in the *RGRP 2015 Annual Progress Report* (Geosyntec, 2016a)
[11] Of the System 1 downtime, approximately 55% was due to planned system shutdowns.
[12] Of the System 3 downtime, approximately 78% was due to planned system shutdowns.
[13] Of the RGRP South of 101 system downtime, approximately 7% was due to planned system shutdowns.

sampled monthly. Results are reported quarterly to the Water Board (Weiss 2015c-h, Weiss 2016a,b).

Flow rates for each well associated with the System 1 and 3 extraction networks were calculated on a monthly basis.[14] Monthly and annual average flow rates and extraction totals for wells in the System 1 extraction network are provided in Table 3 and 4, respectively. Monthly average flow rates and extraction totals for wells in the System 3 extraction network are provided in Tables 5 and 6, respectively. The combined average pumping rates for the Fairchild wells in the System 1 and 3 extraction networks totaled 34.9 and 54.0 gallons per minute (gpm) in 2015.

Analytical results for treatment system sampling at System 1 and System 3 are provided in Tables 7a and 7b (System 1) and 8a and 8b (System 3). Analytical results for treatment system sampling at the consolidated RGRP South of 101 GETS in November and December 2015 are provided in the RGRP 2015 *Annual Progress Report* (Geosyntec, 2016a). The laboratory analytical reports for Systems 1 and 3 are provided in Appendix B, and a quality assurance/quality control (QA/QC) evaluation for samples collected at the Buildings 1-4, 9, and 18 Sites during 2015 is provided in Appendix C. Discharges from Systems 1, 3, and the consolidated RGRP South of 101 GETS were within effluent limits established by NPDES Permit CAG912002, Order R2-2012-0012 (Weiss, 2015c-h, 2016a,b; Geosyntec, 2016a).

Tables 9 and 10 present VOC mass removal summaries for Systems 1 and 3 based on the quarterly NPDES Self-Monitoring Reports prepared by Weiss (Weiss, 2015c-h and 2016a,b). During 2015, System 1 extracted approximately 8.2 million gallons of groundwater and removed 140 pounds of VOCs, and System 3 extracted approximately 19.4 million gallons of groundwater and removed 252 pounds of VOCs. Cumulative groundwater extracted and VOC mass removed by Systems 1 and 3 are illustrated in Figures 4 and 5, respectively.

A summary of non-routine maintenance or operational activities performed at Systems 1 and 3 during 2015 is provided in Tables 11 and 12. The EPA and Water Board require notification of extraction well and system downtime events as follows:

[14] As part of routine system operations, target flow rates based on historical operational information and groundwater capture requirements are established for each SCRW and RRW and used to evaluate potential operational issues and well maintenance requirements by the system operators throughout the year.

1. **EPA**: The owner and/or operator of the treatment system will make a best effort to notify the EPA orally within 24 hours of a well or system shutdown that occurs for more than 72 consecutive hours.
2. **Water Board**: If the treatment system is shut down for more than 120 consecutive hours, 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.

Downtime events for System 1 and System 3 are listed in Tables 11 and 12, including notifications of well or system shutdowns that were required during 2015. As part of the former Building 9 ISCO pilot study, Geosyntec notified EPA of the planned manual shutdown of four extraction wells connected to System 1 (AE/RW-9-1, AE/RW-9-2, WR20A, and RW21A) on 29 January 2015. A Notice of Intent (NOI) for the proposed consolidation of extracted groundwater flow from the System 1, System 3, and RGRP South of 101 extraction networks to the consolidated RGRP South of 101 GETS for treatment was approved by the Water Board on 21 October 2015 (CRWQCB, 2015). On 12 November 2015, groundwater from the System 1 and 3 extractions networks began flowing to the consolidated RGRP South of 101 GETS for treatment.

At System 1, a total of 10 tons of spent carbon were generated and disposed of as non-hazardous waste. At System 3, a total of 10 tons of spent carbon were generated and disposed of as non-hazardous waste. The spent carbon was shipped to Norit America's regeneration facility in Pryor, Oklahoma for reactivation. Spent sediment filters generated at Systems 1 and 3 during 2015 were disposed of as hazardous waste at the Clean Harbors facility in Aragonite, Utah.

2.3 Groundwater Level Monitoring

Groundwater levels were measured semi-annually for the purpose of monitoring the hydraulic performance of the groundwater remedy at the Buildings 1-4, 9, and 18 Sites. Tables 1a, 1b, and 1c summarize the construction details for the monitoring and extraction wells.

During this reporting period, groundwater levels were measured in monitoring and extraction wells on 19 March and 17 September 2015 (Tables 13a-c). In addition, water levels were measured quarterly on 19 March, 18 May, 17 September, and 12 November

2015 in 11 slurry wall well pairs (22 wells) at the Buildings 1-4 Site and 4 slurry wall well pairs (8 wells) at the Building 9 Site. Water levels measured in the slurry wall well pairs between January 2011 and December 2015 are included in Tables 14a and 14b.

Hydrographs of Buildings 1-4 slurry wall well pairs are provided in Figures 6, 7, and 8. Figures 6 and 7 include hydrographs of A Zone slurry wall well pairs showing the inward or outward horizontal gradients across the slurry wall. Figure 8 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 is screened below the slurry wall in the B1 Zone to illustrate vertical gradients between the two zones.

Hydrographs of Building 9 slurry wall well pairs are provided in Figure 9. Figure 9 includes three hydrographs of A Zone slurry wall well pairs showing the inward or outward horizontal gradients across the slurry wall and one hydrograph of a slurry wall well pair in which one well is screened inside the slurry wall in the A Zone and the adjacent well is screened below the slurry wall in the B1 Zone to illustrate the vertical gradient between the two zones.

Groundwater elevation contour maps for the A Zone, B1 Zone, and B2 Zone underlying the Buildings 1-4, 9, and 18 Sites are provided in Figures 10a through 12b and are based on facility-specific and regional data as presented in the MEW *RGRP Annual Report* (Geosyntec, 2016a). The groundwater elevation contour maps were created using the geostatistical software package KT3D_H2O version 3.4 (Tonkin and Larson, 2002).[15] 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 the transition from linear to logarithmic kriging. A spherical variogram was specified with grid spacing of 30 feet.

In recent years, water levels have declined in the A Zone, B1 Zone, and B2 Zone both at the Buildings 1-4, 9, and 18 Sites and throughout the southern portion of the MEW study area. Figures 6 through 8 illustrate the decline in water levels that has been ongoing for the last three years, with water levels measured in 2015 approximately 2 to

[15] 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 (Deutsch and Journal, 1998; Tonkin and Larson, 2002).

4 feet lower than water levels prior to 2013. Water levels remain significantly higher than historical levels observed in the early 1990s and groundwater elevation contour maps from March and September show that while there are minor seasonal fluctuations in groundwater elevations, there is no significant seasonal change in groundwater flow or extraction well capture across the Buildings 1-4, 9, and 18 Sites.

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 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 wells located at the Building 1-4, 9 and 18 Sites, consideration was given to the EPA guidance document, *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems* (EPA, 2008). The following steps were used to perform the hydraulic evaluation of the groundwater remedy.

- The conceptual site 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 2015 were interpolated to generate groundwater elevation contour maps as described in Section 2.3 and the MEW *RGRP Annual Progress Report* (Geosyntec, 2016a);
- 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).

2.4.2 Estimated Extraction Well Capture

Estimated capture zones for A Zone, B1 Zone, and B2 Zone recovery wells associated with the Buildings 1-4, 9, and 18 Sites in March and September 2015 are shown in Figures 10a through 12b. 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 the TransientTracker module 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 Buildings 1-4, 9, and 18 Sites. 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 presented in Figures 10a through 12b 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 site-specific recovery wells 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 10a through 12b was developed by using the combined 2015 groundwater extraction rates to estimate the total capture width in each zone (A, B1, B2) at each of the Buildings 1-4, 9, and 18 Sites. The estimated capture widths were then compared to the distribution of TCE in groundwater (Section 2.5.1, Figures 13a, 14a, and 15a) within the site boundaries, measured in map view for each zone.

At the Buildings 1-4 Site, 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.

Capture zones were not developed for the Former Building 9 Site as all four SCRWs associated with the Site were turned off in February 2015 as part of the EPA approved ISCO pilot study (Section 6). The wells will remain off until the conclusion of the pilot study.

The site remedy for Building 18 is one A Zone SCRW (RW-25A) that is designed to capture A Zone groundwater. The target hydraulic capture area for RW-25A is the modeled capture zone depicted in the final remedial design document for the MEW area South of Highway 101 (Canonie, 1994; Smith, 1996). As shown in Figures 10a and 10b, the estimated capture from RW-25A exceeds the target capture zone. Additional groundwater capture at Building 18 is provided by regional well REG-12A, which is located directly east of RW-25A.

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 15. 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 Buildings 1-4, 9, and 18 Sites, thereby providing an additional line of evidence that hydraulic containment is achieved.[16]

2.4.4 Horizontal and Vertical Gradients

Slurry wall well pairs are used to evaluate:

- The direction of horizontal gradient across the slurry wall by comparing water levels in wells located inside the slurry wall boundary with water levels in adjacent wells outside the slurry wall boundary; and
- The direction of vertical gradient across the A/B Aquitard by comparing water levels in wells located inside the slurry wall boundary (in the A Zone) with water levels in wells located below the slurry wall (in the B1 Zone).

[16] Combined flow rate analysis for the Building 9 Site was conducted to evaluate pumping conditions in January 2015 only. All four Building 9 SCRWs were turned off in February 2015 with EPA approval as part of the ISCO pilot study (Section 6). The wells will remain off until the conclusion of the ISCO Pilot Study.

2.4.4.1 Buildings 1-4

Figures 6 through 8 illustrate hydraulic head differences between the Buildings 1-4 Site slurry wall well pairs. The well pairs in Figures 6 and 7 are used to evaluate the direction of horizontal gradient across the Buildings 1-4 slurry wall. The well pairs in Figure 8 are used to evaluate the direction of vertical gradient across the A/B Aquitard. Groundwater elevations were recorded quarterly in March, May, September, and November 2015 for the slurry wall well pairs listed in Table 14a. The well locations are shown in Figures 3, 6, 7, and 8.

Results of the well pair analysis at the Buildings 1-4 slurry wall indicate the following:

- Horizontal gradients were generally inward on the upgradient (south) and trans-gradient (west and east) sides of the slurry wall, and outward on the downgradient (north) side of the slurry wall.
- Inside the slurry wall, vertical gradients between the B1 Zone and A Zone were consistently upward in well pairs 115B1/124A and 119B1/133A, and downward in well pairs 20B1/33A and 60B1/118A.

2.4.4.2 Building 9

Figure 9 illustrates hydraulic head differences between the Building 9 Site slurry wall well pairs at the Site. Groundwater elevations were recorded quarterly in March, May, September, and November 2015 for the Building 9 slurry wall well pairs listed in Table 14b. The well locations are shown in Figures 3 and 9.

Results of the well pair analysis at the Building 9 slurry wall indicate the following:

- **Horizontal Gradients:** During this reporting period, inward gradients were consistently observed at well pair 123A/122A located on the upgradient side of the slurry wall, and outward gradients were observed at well pair 138A/137A located on the eastern cross gradient side of the slurry wall and well pair 126A/35A located on the western downgradient side of the slurry wall.
- **Vertical Gradients:** During this reporting period, a downward gradient was observed between the A and B1 Zones at well pair 69B1/37A.

With the exception of gradients observed in well pair 123A/122A, the horizontal and vertical gradients changed direction during this reporting period due to the EPA-approved shut down of the four SCRWS within the former Building 9 slurry wall as part of the ISCO pilot study. The four SCRWs will remain off for the duration of the pilot study.

2.4.4.3 Building 18

The horizontal component of groundwater flow at the Site is towards the north-northwest. Hydraulic gradients are affected by groundwater extraction, and locally range from approximately 0.002 to 0.008. The vertical component of groundwater flow is mainly downward as indicated by measured groundwater elevations in well pairs 147A/143B1 and 80A/32B1 located at the Site. Both well pairs demonstrated downward gradients in March 2015 and September 2015, as shown in Table 14c. The downward hydraulic gradients at the Site are attributed to B Zone extraction at the Site associated with RRWs.

The horizontal and vertical gradients recorded during this reporting period are generally consistent with historical observations. The observed downward gradients do not impact cleanup objectives. Stable to decreasing VOC concentration trends in wells screened below the A Zone provide supporting evidence for plume capture (Section 2.5.2).

2.5 Groundwater Quality Monitoring

Site-wide VOC monitoring data was last collected in 2014, consistent with EPA's 16 March 2016 conditional approval of a trial reduction of groundwater monitoring and sampling frequency at the MEW study area (EPA, 2016). The next groundwater sampling event will occur in fall 2016, and the effectiveness of biennial VOC monitoring will be evaluated as part of the 2016 *Annual Progress Report*.

Chemical analytical results for the previous five years (2011 through 2015) are presented in Tables 16a, 16b, and 16c. VOC (TCE, cis-1,2-DCE, and VC) versus time graphs for selected monitoring wells are included in Appendix D.

2.5.1 Isoconcentration Contour Maps

Because groundwater quality sampling was not conducted in 2015, TCE, cis-1,2-DCE, VC, and tetrachloroethene (PCE) isoconcentration contour maps from the most recent

annual sampling event in 2014 are presented for the A Zone, B1 Zone, and B2 Zone in Figures 13a through 15d. These maps are based on isoconcentration contouring performed for the 2014 MEW *RGRP Annual Progress Report* (Geosyntec, 2015d) that includes all wells in the MEW study area sampled for VOCs in 2014. The 2014 contour maps were based on the previous 2013 isoconcentration contour maps (Geosyntec, 2014a) with contours modified to reflect decreases or increases in TCE concentrations between 2013 and 2014. An exception to this is the Former Building 9 Site, where the isoconcentration contours have been updated to incorporate monitoring data generated in 2015 as part of the ongoing ISCO pilot study (Figures 13a – 13d).

2.5.2 Remedy Performance

In conjunction with the hydraulic analysis described in Section 2.4, VOC monitoring data provides an additional line of evidence for assessing remedy performance. VOC monitoring data was last collected in 2014 and VOC concentration trends were evaluated as part of the *2014 Annual Progress Report for Former Buildings 1-4, 9, and 18* (Geosyntec, 2015e) by reviewing time series graphs (Appendix D) and performing Mann-Kendall statistical analysis (Table 17). The 2014 evaluation of VOC concentration trends concluded the following:

- **Buildings 1-4:**
    - All sampled wells had TCE concentrations within or below historical ranges.
    - Since 2005, TCE concentrations have been decreasing, stable, non-detect[17] or have no statistically significant trend in all the Buildings 1-4 Site wells evaluated. Approximately 40% of Site wells display decreasing TCE concentration trends, 58% show no trend or are stable, and TCE has not been detected above laboratory reporting limits in one well (RW-5(B2)).
- **Building 9**:
    - All sampled wells had TCE concentrations within or below historical ranges.

[17] Non-detect is defined as sample concentrations having been below method detection limits in all samples from the last 10 sampling years.

- Since 2005, TCE concentrations have been decreasing, stable, or have no statistically significant trend in all but two of the Building 9 Site wells evaluated (wells AE/RW-9-2 and 138A). Approximately 31% of Site wells display decreasing TCE concentration trends and 54% show no trend or are stable.

- **Building 18**:
  - All sampled wells had TCE concentrations within or below historical ranges.
  - Since 2005, TCE concentrations have been decreasing, stable, or have no statistically significant trend in all the Building 18 Site wells evaluated. Approximately 71% of Site wells display decreasing TCE concentration trends and 29% show no trend or are stable.

The spatial distribution of monitoring data can also be used to assess remedy performance. Figures 13a, 14a, and 15a present 2014 TCE isoconcentration contour maps of the A Zone, B1 Zone, and B2 Zone, respectively, with the March 2015 hydraulic capture zones (Section 2.4) overlain on the maps.[18] These figures illustrate complete hydraulic capture for the Fairchild remedy wells within the Buildings 1-4 Site boundary and complete hydraulic capture of the target capture zone established for the Building 18 remedy. While the ISCO pilot study is ongoing at the Building 9 Site hydraulic capture will be maintained through the operation of the shared SCRWs (GSF-1A, GSF-1B1 and GSF-1B2).

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

2.6 Compliance

The treatment systems operated within the effluent limits established by the NPDES permits throughout 2015 (Weiss, 2016a,b; Geosyntec, 2016a).

[18] These figures show depictions of the capture for extraction wells within a given zone and do not depict the vertical capture across zones. As discussed in the 2008 *Optimization Evaluation* (Geosyntec et al., 2008) there is a vertical component to the groundwater flow throughout most of the MEW study area, which often results in capture that crosses between zones.

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 the EPA and local entities to implement the ROD amendment during 2015. 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, 2016c).

3.2 Building 20 Remediation

No potential sources of VOCs were identified on the premises of Fairchild's former Buildings 20/20A at 464 Ellis Street (Building 20). Therefore, there is no facility-specific remedy for the Site. EPA approved the discontinuation of a facility-specific report for this Site in 2012 (EPA, 2012) with the condition that a summary of annual Site activities would be provided in this report. A summary of the extraction wells located on the former Buildings 20/20A Site and activities performed at the Site in 2015 is provided in Table 18. Additional information regarding wells located on the former Buildings 20/20A Site is provided in the Raytheon annual report (Locus, 2016) and the *2015 Annual Progress Report* for the RGRP (Geosyntec, 2016a).

3.3 Consolidation of Groundwater Treatment

In 2015, upgrades were made to the RGRP South of 101 GETS and the piping networks for Systems 1 and System 3 were realigned such that groundwater from those networks discharges to the RGRP South of 101 GETS for aboveground treatment and discharge. The work was completed for the following reasons:

- Consolidation of treatment represented an opportunity for significant streamlining of project O&M, resulting in less impact to property owners, tenants, and other stakeholders;
- The RGRP South of 101 GETS is significantly newer (constructed in 1997) than Systems 1 and 3 (constructed in 1985) and therefore operates with fewer O&M requirements; and

- There are fewer access and space limitations at the RGRP South of 101 GETS, allowing for capital improvements and other maintenance upgrades at that system that cannot be implemented at Systems 1 and 3.

A timeline of notification and construction activities related to the consolidation of groundwater treatment is provided below.

- 31 July 2015 – Submittal of a letter notifying EPA of planned upgrades to the RGRP South of 101 GETS (Geosyntec, 2015f);
- 5 August 2015 – Submittal of a letter notifying EPA of planned realignment of the System 1 and 3 extraction networks to allow discharge of groundwater to the RGRP South of 101 GETS for aboveground treatment (Geosyntec, 2015g);
- 25 through 28 August 2015 – Completion of initial construction activities, including potholing and utility locating to confirm planned pipeline realignments;
- 2 September 2015 – EPA email approval of planned RGRP South of 101 GETS upgrade work and realignment of System 1 and 3 extraction networks;
- 8 September through 31 October 2015 – Construction activities associated with consolidation of groundwater treatment, including:
    - Saw cutting and soil excavation from System 1 and 3 pipeline routes;
    - Construction of new pipeline alignments and tie-ins to the existing piping networks;
    - Pressure testing new pipelines following construction;
    - Backfilling and surface restoration of new pipeline trenches;
    - Constructing concrete leveling pads for the new atmospheric tank and transfer pumps at the RGRP South of 101 GETS;
    - Installation of new atmospheric tanks, transfer pumps, and associated aboveground piping;
    - Repair of existing fiber optic lines connecting Systems 1 and 3 to the RGRP South of 101 GETS; and
    - Electrical and controls updates.

- 1 November through 12 November 2015 – Testing and troubleshooting of the consolidated RGRP South of 101 GETS;
- 12 November 2015 – Completed troubleshooting and began discharge of groundwater from the System 1 and 3 extraction networks to the RGRP South of 101 GETS for aboveground treatment; and
- 19 November 2015 – Transmitted an email notifying EPA of the completion of the RGRP South of 101 GETS upgrade work and System 1 and 3 pipeline realignment and informing EPA that, moving forward, groundwater from the RGRP South of 101, System 1, and System 3 extraction well networks will flow to and be treated by the upgraded system located at the RGRP South of 101 treatment pad.

4. PROBLEMS ENCOUNTERED

Tables 11 and 12 provide a summary of all non-routine O&M events that occurred at Systems 1 and System 3. No other problems related to the Building 1-4, 9, and 18 Sites were encountered (Weiss, 2016a,b).

5. TECHNICAL ASSESSMENT

The following assessment of the groundwater remedy performance was made based on data collected through 2015.

- **The remedy is functioning as intended.** Based on the data reviewed, the groundwater remedy is functioning as intended. The 2015 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 extraction wells associated with the Buildings 1-4, 9, and 18 Sites are achieving adequate horizontal and vertical capture.
- **VOC concentrations are steady to decreasing over time.** Since 2005, over 85% of wells at each of the Buildings 1-4, 9, and 18 Sites have decreasing, stable, or no statistically significant trend in TCE concentration over time (Table 17, Appendix D).

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

6. OPTIMIZATION PROGRESS

In 2014, EPA requested that the MEW PRPs proceed with the optimization of existing facility-specific and regional groundwater remedies. EPA's stated objective for remedy optimization is to increase the rate of VOC mass removal from the individual MEW sites. Optimization of the remedy at the former Fairchild Building 9 Site began in 2013 and includes an ISCO pilot study within the slurry wall boundary. Optimization programs for the former Fairchild Buildings 1-4 and Building 18 Sites are expected to include adjustments to the groundwater extraction remedies to increase the rate of VOC mass removal following the completion of a groundwater extraction optimization pilot study at the Former Fairchild Building 19 Site (Geosyntec, 2016b).

6.1 Building 9 Optimization

Remedy optimization at the former Building 9 Site includes implementation of an ongoing ISCO pilot study. In 2015, two rounds of ISCO injections and associated monitoring were completed inside the Building 9 slurry wall boundary. The ISCO pilot study is being conducted in accordance with the *Final Work Plan for In Situ Chemical Oxidation Pilot Study* (Geosyntec, 2014b) and *Addendum* (Geosyntec, 2015a), and the *Notification of Second Injection Event, In Situ Chemical Oxidation Pilot Study* letter (Geosyntec, 2015i).[19] The ongoing pilot study is evaluating the effectiveness of injecting oxidant into the subsurface to reduce the concentration of VOCs in groundwater.

The first ISCO injection event was performed between 18 February and 2 March 2015. Following the injection event, Geosyntec conducted monitoring in accordance with the approved Work Plan to assess the effectiveness of the injections. Based on the results of the monitoring, a second round of ISCO injections was completed between 23 and 25 November 2015. The second round of injections were conducted in accordance with the approved Work Plan but modified from the first event to decrease the injection rate and volume. Monitoring to assess the effectiveness of the second injection event is ongoing.

[19] EPA conditionally approved the Work Plan on 2 January 2015 (EPA, 2015a). EPA approved the addendum on 30 January 2015 (EPA, 2015b). EPA concurred with the notification letter in an email dated 13 November 2015 (EPA, 2015d).

In accordance with the Work Plan Addendum, Geosyntec has provided EPA with monthly pilot study updates, including data summary tables. Monitoring data collected in 2015 as part of the pilot study are provided as tables in Appendix E.

A third ISCO injection is planned for spring 2016. An implementation report summarizing the ISCO pilot study results through the third injection event and presenting recommendations for future pilot study activities will be submitted to EPA in 2016 following the third ISCO injection.

7. CONCLUSIONS AND RECOMMENDATIONS

Approximately 27.7 million gallons of groundwater were treated, and 392 pounds of VOCs were removed by treatment Systems 1 and 3 during 2015. In November and December 2015, approximately 9.1 million gallons of groundwater were treated and 107 pounds of VOCs removed by the consolidated RGRP South of 101 GETS. From 1 January through 12 November 2015, Systems 1 and 3 both had operational uptimes exceeding 90%. The consolidated RGRP South of 101 GETS had an operational uptime exceeding 95% from 12 November through 31 December 2015. No significant problems related to system operations were noted in 2015.

The remedy is performing as intended. The estimated capture zones from March and September 2015 meet or exceed target capture areas based on converging lines of evidence, including graphical flow net analysis and VOC concentration trends.

Optimization of the groundwater remedies at the Buildings 1-4, 9, and 18 Sites was ongoing in 2015, including implementation of the ISCO pilot study at the former Building 9 Site. Participation in the groundwater remedy optimization process will continue in 2016.

The reductions in groundwater gauging and sampling frequency that were requested in February 2015 will be evaluated as part of the *2016 Annual Progress Report*. Groundwater elevations measurements in 2016 will only be collected in September in order to evaluate a potential reduction in gauging from a semi-annual to annual basis. Groundwater samples will be collect in September 2016 and compared to the 2014 sampling results to evaluate a potential reduction in sampling from an annual to biennial basis. Based on the analyses previously presented in the *Request for Reduction in Groundwater Monitoring Frequency* (Geosyntec, 2015c), it is anticipated that the evaluation will conclude that monitoring at a reduced frequency is adequate to demonstrate remedy effectiveness.

8. UPCOMING WORK IN 2016 AND PLANNED FUTURE ACTIVITIES

January	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES)[20] • ISCO pilot study monitoring
February	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Fourth Quarter and Annual NPDES reports • ISCO pilot study monitoring
March	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Notices of Termination for System 1 and 3 NPDES permits. Wells will pump to the consolidated RGRP South of 101 GETS and operate under its NPDES permit. • Slurry wall well pair groundwater level measurements • ISCO pilot study monitoring[21]
April	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Annual Progress Report to EPA • ISCO pilot study monitoring
May	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit First Quarter NPDES report • Slurry wall well pair groundwater level measurements • ISCO pilot study monitoring • Third ISCO pilot study injection at former Building 9[22] • Decommissioning of aboveground piping and treatment vessels at Systems 1 and 3
June	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • ISCO pilot study monitoring
July	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit ISCO Pilot Study Implementation Report

[20] Monthly effluent sampling for the consolidated RGRP South of 101 GETS.
[21] ISCO pilot study monitoring was planned, but was unable to be completed due to site construction activities.
[22] Exact date for the injections will be determined based on 600 National Avenue redevelopment schedule.

August	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Second Quarter NPDES report
September	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Slurry wall well pair groundwater level measurements • Annual groundwater sampling • Groundwater level measurements
October	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Annual groundwater sampling
November	• Pump and Treat System O&M • Monthly system effluent sampling (NPDES) • Submit Third 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 1a
Buildings 1-4 Extraction and Monitoring Well Construction Summary
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
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 Screen Interval (ft btoc)	Top of Sand Pack (ft btoc)	Bottom of Sand Pack (ft btoc)	Well Type
A Zone									
33A	1982	43.74	2	34	14	34	14	34	Mon
46A	1982	42.10	2	34	14	34	14	34	Mon
51A	1982	44.22	2	34	14	34	12	34	Mon
57A	1982	39.21	2	35	15	35	12	35	Mon
59A	1982	39.56	2	30	15	30	12	30	Mon
61A	1982	37.18	2	31	16	31	10	31	Mon
62A (RGRP)	1982	37.88	2	30	10	30	10	30	Mon
67A	1982	39.77	4	31	21	31	10	31	Mon
68A	1982	43.26	4	31	21	31	10	31	Mon
76A	1985	40.08	4	20	10	20	7.5	22	Mon
84A	1985	43.38	4	28	18	28	15	30	Mon
118A	1986	39.78	4	20.5	10.5	20.5	6	21	Mon
121A	1986	41.82	4	36	26	36	12	38	Mon
124A	1986	38.86	4	24	14	24	19	26	Mon
127A	1986	43.81	4	20	15	20	13	22	Mon
128A	1986	43.38	4	28	18	28	16	30	Mon
129A	1986	43.75	4	38	26	36	12	38	Mon
130A	1986	41.60	4	29	14	29	11	31	Mon
133A	1986	43.75	4	30	15	30	13	32	Mon
136A	1986	43.30	4	30	25	30	22	32	Mon
156A	1993	40.22	4	29.5	19.5	29.5	37	55	Mon
157A	1993	40.50	4	29.5	19.5	29.5	15	30	Mon
REG-MW-2A (RGRP)	---	38.11	---	---	18.5	15	25	---	Mon
RW-3A	1985	43.34	6	30.5	19.6	29.6	11	32	Ext
RW-4A	1986	42.61	6	29	18	28	11	32	Ext
RW-5A	1985	36.86	6	30.5	19.5	29.5	11	32	Ext
RW-7A	1985	36.29	6	36	15	35	11	37	Ext
RW-9A (RGRP)	1985	37.83	6	25	13	23	10	25	Ext
RW-16A	1988	43.89	8	33	22	32	11	33.5	Ext
RW-18A	1987	37.53	6	36	25	35	11	37	Ext
RW-27A	1997	38.41	6	25	15	25	12	27.5	Ext
RW-28A	2000	42.33	6	28	18	28	15	31	Ext
B1 Zone									
2B1	1982	43.43	4	59	47	59	47	60	Mon
20B1	1985	43.89	4	67	57	67	55	68	Mon
60B1	1985	39.64	4	73	63	73	60	75	Mon
115B1	1986	38.76	4	64	59	64	57.5	65	Mon
119B1 (RGRP)	1986	42.96	4	62	52	62	50	34	Mon
147B1	1995	37.82	6	61	50	60	47	62	Mon
RW-3(B1)	1985	43.28	6	57	46	56	41	59	Ext
RW-4(B1)	1985	42.66	6	61	50	60	49	63	Ext
RW-5(B1)	1985	37.87	6	59	0	0	40	62	Ext
RW-7(B1)	1985	38.76	6	66	55	65	45	67	Ext

Table 1a
Buildings 1-4 Extraction and Monitoring Well Construction Summary
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
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 Screen Interval (ft btoc)	Top of Sand Pack (ft btoc)	Bottom of Sand Pack (ft btoc)	Well Type
RW-9(B1)R (RGRP)	1986	38.59	6	69	59	69	58	72	Ext
RW-12(B1)	1995	40.51	6	62	52	62	49	63	Ext
B2 Zone									
10B2	1985	43.90	2	90	85	90	83	95	Mon
11B2	1985	37.19	2	92	87	92	85	92	Mon
113B2 (RGRP)	1986	39.01	4	86	69	84	67	86	Mon
118B2	1986	43.21	4	89	84	89	81	91	Mon
148B2	1995	37.72	6	86	75	85	72	87	Mon
RW-3(B2)	1985	42.96	6	92	76	91	69	94	Ext
RW-4(B2)	1985	41.79	6	90.5	74.5	89.5	72	93	Ext
RW-5(B2)	1985	37.98	6	95	84	94	67	97.5	Ext
RW-7(B2)	1986	37.18	6	90	80	90	76	93	Ext
RW-9(B2) (RGRP)	1985	37.88	6	92.6	82.6	92.6	80	95	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).

--- = data not available

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 associated with the Former Fairchild Buildings 1-4 site. Additional discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

Table 1b
Building 9 Extraction and Monitoring Well Construction Summary
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
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									
31A	1985	34.09	4	30.5	14.5	30	10	30	Mon
35A	1982	42.67	2	37	12	37	12	37	Mon
36A	1982	42.32	2	40	35	40	15	40	Mon
37A	1982	43.21	2	30	15	30	12	30	Mon
39A	1982	43.50	2	35	15	35	12	35	Mon
40A	1982	43.44	2	27	11.5	27	12	27	Mon
41A	1982	42.40	2	25	13	25	13	25	Mon
42A	1982	42.97	2	35	10	35	12	35	Mon
43A	1982	43.38	2	27	15	27	15	27	Mon
44A	1982	43.13	2	28	13.5	28	13.5	28	Mon
122A	1986	44.23	4	38	28	38	18	39	Mon
123A	1986	44.37	4	38	28	38	18	39	Mon
126A	1986	42.85	4	38	23	38	18	40	Mon
137A	1986	43.68	4	36	34	36	32	38	Mon
138A	1986	43.60	4	37	34	37	32	38	Mon
AE/RW-9-1	1995	43.15	6	33	8	33	6	36	Ext
AE/RW-9-2	1995	43.85	6	37	8	37	6	38	Ext
B9-1A	2015	--	2	24	18	23	17	24	Mon
B9-2A	2015	--	2	24	18.5	23.5	17.5	24	Mon
B9-3A	2015	--	2	22.5	18	22	17	22.5	Mon
B9-4A	2015	--	2	23.5	19	23	18	23.5	Mon
B9-5A	2015	--	2	23	18.5	23	17.5	23	Mon
RW-20A	1987	43.57	8	37.5	26.5	36.5	11	38	Ext
RW-21A	1987	43.16	6	37	21	36	11	38	Ext
B1 Zone									
69B1	1985	42.62	4	59	54	59	50	61	Mon

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
-- = no established reference elevation

Table 1c
Building 18 Extraction and Monitoring Well Construction Summary
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
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									
129A	1986	40.40	4	38	26	36	12	38	Mon
147A	1988	39.13	4	30	10	30	7	31	Mon
151A	1991	40.02	4	31.5	16.5	31.5	13.5	32	Mon
152A	1991	39.53	4	34.5	14.50	34.5	12.5	34.5	Mon
54A	1982	40.17	2	40	14	40	14	40	Mon
58A	1982	38.20	4	30	10	30	10	30	Mon
80A	1985	38.09	4	33	23	31	21	33	Mon
RW-25A	1995	38.38	6	32	21	31	18	32	Ext
B1 Zone									
32B1 (RGRP)	1985	38.03	4	76	64	74	59	76	Mon
143B1 (RGRP)	1986	38.88	4	70	60	70	56	76	Mon

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 used for monitoring of vertical gradients at the Former Fairchild Building 18 Site. Additional discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

Table 2a
Buildings 1-4 Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Monitoring and Sampling		
Well	**Sample Frequency[1]**	**Water Level Gauging Frequency[2]**
A Zone		
33A	Every 5 Years (Last sampled 2012)	Quarterly
46A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
51A	Every 5 Years (Last sampled 2012)	Semiannually (March, September)
57A	Every 5 Years (Last sampled 2012)	Semiannually (March, September)
59A	Every 5 Years (Last sampled 2012)	Quarterly
61A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
62A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
67A	Every 5 Years (Last sampled 2012)	Semiannually (March, September)
68A	Every 5 Years (Last sampled 2012)	Semiannually (March, September)
76A	Annually (September or October, last sampled 2014)	Quarterly
84A	Every 5 Years (Last sampled 2012)	Quarterly
118A	Annually (September or October, last sampled 2014)	Quarterly
121A	Every 5 Years (Last sampled 2012)	Quarterly
124A	Every 5 Years (Last sampled 2012)	Quarterly
127A	Annually (September or October, last sampled 2014)	Quarterly
128A		Quarterly
129A		Quarterly
130A	Annually (September or October, last sampled 2014)	Quarterly
133A	Every 5 Years (Last sampled 2012)	Quarterly
136A (RGRP)		Quarterly
156A	Annually (September or October, last sampled 2014)	Quarterly
157A	Annually (September or October, last sampled 2014)	Quarterly
REG-MW-2A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-3A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-4A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-5A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-7A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-9A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-16A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-18A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-27A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-28A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B1 Zone		
2B1	Annually (September or October, last sampled 2014)	Semiannually (March, September)
20B1	Annually (September or October, last sampled 2014)	Quarterly
60B1	Annually (September or October, last sampled 2014)	Quarterly
115B1	Annually (September or October, last sampled 2014)	Quarterly
119B1 (RGRP)	Annually (September or October, last sampled 2014)	Quarterly
147B1	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-3(B1)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-4(B1)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-5(B1)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-7(B1)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-9(B1)R (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-12(B1)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B2 Zone		
10B2	Annually (September or October, last sampled 2014)	Semiannually (March, September)
11B2	Annually (September or October, last sampled 2014)	Semiannually (March, September)
113B2 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
118B2	Annually (September or October, last sampled 2014)	Semiannually (March, September)
148B2	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-3(B2)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-4(B2)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-5(B2)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-7(B2)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-9(B2) (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)

Table 2a
Buildings 1-4 Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Monitoring and Sampling		
Well	**Sample Frequency[1]**	**Water Level Gauging Frequency[2]**
Monitoring and Sampling - System 1		
System Component		
System 1 Influent	Quarterly	
System 1 Midpoint	Monthly	
System 1 Effluent	Monthly	
Monitoring and Sampling - System 3		
System Component		
System 3 Influent	Quarterly	
System 3 Midpoint	Monthly	
System 3 Effluent	Monthly	
Reporting		
Report	**Due Date**	
Quarterly NPDES	February 15, May 15, August 15, November 15	
EPA Annual Progress Report	April 15	

Notes:

1. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells were not sampled in 2015 in order to evaluate the proposed reduction in sampling frequency to a biennial basis. The wells will be sampled in 2016 and the proposed reduction in sampling frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

2. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells will not be gauged in March 2016 in order to evaluate the proposed reduction in gauging frequency to an annual basis. The wells will be gauged in September 2016 and the proposed reduction in frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

Wells shown in **bold** are located onsite and associated with the Fairchild Operation & Maintenance program (RMT, 2003).

(RGRP) = Regional Groundwater Remediation Program well. Additional discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

EPA = United States Environmental Protection Agency

NPDES = National Pollutant Discharge Elimination System

RGRP = Regional Groundwater Remediation Program

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

Table 2b
Building 9 Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Monitoring and Sampling		
Well	**Sample Frequency[1]**	**Water Level Gauging Frequency[2]**
A Zone		
35A	Every 5 Years (Last sampled 2012)	Quarterly
36A		Semiannually (March, September)
37A	Annually (September or October, last sampled 2014)	Quarterly
40A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
41A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
42A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
43A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
44A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
122A	Every 5 Years (Last sampled 2012)	Quarterly
123A		Quarterly
126A		Quarterly
137A	Annually (September or October, last sampled 2014)	Quarterly
138A	Annually (September or October, last sampled 2014)	Quarterly
AE/RW-9-1	Annually (September or October, last sampled 2014)	Quarterly
AE/RW-9-2	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B9-1A	According to ISCO Pilot Study monitoring program (Geosyntec, 2015a)	
B9-2A	According to ISCO Pilot Study monitoring program (Geosyntec, 2015a)	
B9-3A	According to ISCO Pilot Study monitoring program (Geosyntec, 2015a)	
B9-4A	According to ISCO Pilot Study monitoring program (Geosyntec, 2015a)	
B9-5A	According to ISCO Pilot Study monitoring program (Geosyntec, 2015a)	
RW-20A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-21A	Annually (September or October)	Semiannually (March, September)
B1 Zone		
69B1		Quarterly

Reporting	
Report	**Due Date**
EPA Annual Progress Report	April 15

Notes:

1. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells were not sampled in 2015 in order to evaluate the proposed reduction in sampling frequency to a biennial basis. The wells will be sampled in 2016 and the proposed reduction in sampling frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

2. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells will not be gauged in March 2016 in order to evaluate the proposed reduction in gauging frequency to an annual basis. The wells will be gauged in September 2016 and the proposed reduction in frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

Wells shown in **bold** are located onsite and associated with the Fairchild Operation & Maintenance program (RMT, 2003).

EPA = United States Environmental Protection Agency

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

Table 2c
Building 18 Monitoring and Reporting Schedule
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Monitoring and Sampling		
Well	**Sample Frequency[1]**	**Water Level Gauging Frequency[2]**
A Zone		
54A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
58A		Semiannually (March, September)
80A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
147A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
151A		Semiannually (March, September)
152A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
RW-25A	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B1 Zone		
32B1 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
143B1 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)

Reporting	
Report	**Due Date**
EPA Annual Progress Report	April 15

Notes:

1. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells were not sampled in 2015 in order to evaluate the proposed reduction in sampling frequency to a biennial basis. The wells will be sampled in 2016 and the proposed reduction in sampling frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

2. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells will not be gauged in March 2016 in order to evaluate the proposed reduction in gauging frequency to an annual basis. The wells will be gauged in September 2016 and the proposed reduction in frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

Wells shown in **bold** are located onsite and associated with the Fairchild Operation & Maintenance program (RMT, 2003).

(RGRP) = Regional Groundwater Remediation Program well used for monitoring of vertical gradients at the Former Fairchild Building 18 Site. Additional discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

EPA = United States Environmental Protection Agency

Table 3
2015 Average Recovery Well Flow Rates, System 1 Extraction Network
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Extraction Well	Remediation Program	2015 Average Monthly Flowrate[1] (gpm)												2015 Average Annual Flow Rate[2] (gpm)
		January	February	March	April	May	June	July	August	September	October	November	December	
A Zone														
AE/RW-9-1[3]	9	4.49	0.76	--	--	0.59	--	--	--	--	--	--	--	4.49
AE/RW-9-2[3]	9	0.78	0.23	--	--	--	--	--	--	--	--	--	--	0.78
RW-3A[4]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-4A	1-4	4.24	3.75	2.94	3.39	3.36	3.22	3.56	3.54	3.59	2.84	2.73	3.30	3.37
RW-16A[4]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-20A[3]	9	5.42	1.98	--	--	--	--	--	--	--	--	--	--	5.42
RW-21A[3]	9	7.09	1.45	--	--	--	--	--	--	--	--	--	--	7.09
RW-25A	18	8.05	7.37	8.04	8.22	7.81	6.59	6.91	6.73	6.83	5.04	4.78	5.63	6.85
RW-28A[4]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
B1 Zone														
RW-3(B1)[4]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-4(B1)	1-4	5.55	5.82	6.77	6.72	5.67	5.71	3.81	3.15	3.17	3.70	6.45	7.73	5.35
B2 Zone														
RW-3(B2)[4]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-4(B2)	1-4	0.32	0.31	0.37	0.61	0.73	0.82	0.81	0.76	0.81	0.59	0.52	0.59	0.60
38B2 (RGRP)	RGRP	4.72	4.33	4.80	4.88	4.62	4.34	4.58	4.47	4.43	3.42	3.55	4.31	4.38
Total		40.66	26.00	22.91	23.82	22.77	20.68	19.67	18.65	18.82	15.59	18.02	21.55	38.34

Notes:

1. Monthly average extraction well flow rates were calculated by dividing the volume of groundwater extracted at each well by the time (minutes) between the effluent totalizer readings (generally taken last Wednesday of each month).
2. Average 2015 flow rates were calculated by dividing the total volume of groundwater recovered by the time in minutes between the totalizer readings. System totalizer readings were recorded on 30 December 2014 and 30 December 2015. For wells AE/RW-9-1, AE/RW-9-2, RW-20A, and RW-21A January flow rates are reported.
3. Wells were turned off with EPA approval (EPA, 2015) for the ISCO pilot study at the Former Building 9 (Geosyntec, 2014b). Wells operated intermittently in 2015 as part of ISCO injection activities.
4. Well is offline with EPA approval (RMT, 2000; Geosyntec, 2010).

(RGRP) = Regional Groundwater Remediation Program well connected to System 1 for treatment. Further discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)
-- = well was off this month
EPA = United States Environmental Protection Agency
gpm = gallons per minute
ISCO = in situ chemical oxidation

Table 4
2015 Monthly Extraction Totals, System 1 Extraction Network
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Extraction Well	Remediation Program	2015 Monthly Volume Extracted[1] (gallons)											
		January	February	March	April	May	June	July	August	September	October	November	December
A Zone													
AE/RW-9-1[2]	9	187,686	30,472	--	--	27,833	14	--	1	--	--	--	--
AE/RW-9-2[2]	9	32,552	9,292	--	--	11	1	4	6	--	--	--	--
RW-3A[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-4A	1-4	177,071	151,312	139,886	146,323	159,668	101,982	189,580	142,684	165,582	122,723	109,907	161,511
RW-16A[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-20A[2]	9	226,361	80,021	--	--	--	73	--	--	--	--	--	--
RW-21A[2]	9	296,004	58,607	--	--	--	52	--	--	--	--	--	--
RW-25A	18	336,193	297,086	381,993	355,288	371,255	208,705	368,051	271,183	314,553	217,824	192,559	275,492
RW-28A[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
B1 Zone													
RW-3(B1)[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-4(B1)	1-4	231,641	234,563	321,494	290,209	269,242	180,852	203,258	127,173	146,096	160,018	260,122	378,413
B2 Zone													
RW-3(B2)[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-4(B2)	1-4	13,322	12,529	17,672	26,296	34,573	26,082	43,175	30,601	37,200	25,458	20,775	28,891
38B2 (RGRP)	RGRP	197,250	174,498	227,874	210,795	219,569	137,468	244,175	180,317	204,000	147,611	143,068	210,889
Total[4]		1,698,080	1,048,380	1,088,919	1,028,911	1,082,151	655,229	1,048,243	751,965	867,431	673,634	726,431	1,055,196

Notes:

1. Monthly volumes of groundwater extracted are based on effluent totalizer readings at each well (generally taken last Wednesday of each month).

2. Wells were turned off with EPA approval (EPA, 2015) for the ISCO pilot study at the Former Building 9 (Geosyntec, 2014b). Wells operated intermittently in 2015 as part of ISCO injection activities.

3. Well is offline with EPA approval (RMT, 2000; Geosyntec, 2010).

4. Total values are calculated from the system effluent totalizer, therefore the sum of the well extraction totals may not be equal to the total value reported. This discrepancy is attributed to inherent errors associated with comparing these two independently measured totalizer values.

(RGRP) = Regional Groundwater Remediation Program well connected to System 1 for treatment. Further discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

-- = well was off this month

EPA = United States Environmental Protection Agency

Table 5
2015 Average Recovery Well Flow Rates, System 3 Extraction Network
MEW Former Fairchild Buildings 1-4, 9 and 18 Groundwater Remediation Programs
Mountain View, California

Extraction Well	Remediation Program	2015 Average Monthly Flowrate[1] (gpm)												2015 Average Annual Flow Rate[2] (gpm)
		January	February	March	April	May	June	July	August	September	October	November	December	
A Zone														
RW-5A	1-4	3.23	2.76	3.24	3.14	3.14	3.24	3.23	2.20	1.83	2.02	2.76	2.97	2.82
RW-7A	1-4	13.07	10.82	13.04	12.86	13.11	13.60	13.16	13.29	7.35	8.16	12.44	14.14	12.08
RW-9A (RGRP)	1-4 & RGRP	6.92	5.76	6.92	6.83	6.76	7.04	7.00	7.22	4.19	4.89	7.53	8.30	6.62
RW-18A	1-4	4.78	3.76	3.88	3.39	2.67	2.40	2.51	2.60	1.38	2.05	2.81	2.57	2.89
RW-27A	1-4	6.05	4.97	5.85	5.34	5.37	5.25	5.10	4.69	2.56	2.96	3.64	3.43	4.59
B1 Zone														
RW-5(B1)	1-4	5.19	4.22	5.10	5.05	4.59	4.83	4.74	4.76	2.73	3.09	4.69	5.02	4.50
RW-7(B1)	1-4	2.62	2.24	2.71	2.62	2.45	2.56	2.52	2.32	1.33	1.55	2.15	2.14	2.26
RW-9(B1)R (RGRP)	1-4 & RGRP	6.35	5.30	6.66	6.39	6.85	6.17	6.78	6.50	3.57	4.14	5.65	5.30	5.81
RW-12(B1)	1-4	6.59	4.95	5.95	5.54	6.21	6.55	6.32	6.25	3.59	4.73	6.82	7.40	5.90
B2 Zone														
RW-5(B2)[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-7(B2)[3]	1-4	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-9(B2) (RGRP)	1-4 & RGRP	3.52	3.00	3.72	3.66	3.58	3.56	3.43	3.35	1.77	1.96	2.56	2.58	3.05
Total		58.32	47.78	57.06	54.82	54.72	55.19	54.81	53.18	30.28	35.55	51.06	53.86	50.52

Notes:

1. Monthly average extraction well flow rates were calculated by dividing the volume of groundwater extracted at each well by the time (minutes) between the effluent totalizer readings (generally taken last Wednesday of each month).
2. Average 2015 flow rates were calculated by dividing the total volume of groundwater recovered by the time in minutes between the totalizer readings. System totalizer readings were recorded on 30 December 2014 and 30 December 2015.
3. Well is offline with EPA approval (RMT, 2000).
(RGRP) = Regional Groundwater Remediation Program well connected to System 3 for treatment. Further discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)
-- = well was off this month
gpm = gallons per minute

Table 6
2015 Monthly Extraction Totals, System 3 Extraction Network
MEW Former Fairchild Buildings 1-4, 9 and 18 Groundwater Remediation Programs
Mountain View, California

Extraction Well	Remediation Program	2015 Monthly Volume Extracted[1] (gallons)											
		January	February	March	April	May	June	July	August	September	October	November	December
A Zone													
RW-5A	1-4	135,002	111,420	154,013	135,785	149,217	102,576	172,341	88,901	84,104	87,320	111,477	145,604
RW-7A	1-4	545,634	436,324	619,619	555,518	622,787	430,878	701,176	535,990	338,465	352,499	501,781	692,391
RW-9A (RGRP)	1-4 & RGRP	288,821	232,219	328,807	295,249	321,038	222,912	373,030	291,232	193,002	211,424	303,689	406,388
RW-18A	1-4	199,440	151,440	184,188	146,603	126,652	76,038	133,802	104,758	63,645	88,489	113,387	125,982
RW-27A	1-4	252,586	200,510	277,951	230,581	255,390	166,249	271,519	189,231	117,847	127,690	146,707	167,918
B1 Zone													
RW-5(B1)	1-4	216,937	169,958	242,541	218,233	218,291	153,044	252,755	191,825	125,692	133,324	189,075	245,997
RW-7(B1)	1-4	109,556	90,349	128,586	113,300	116,576	80,959	134,297	93,354	61,415	67,077	86,607	104,653
RW-9(B1)R (RGRP)	1-4 & RGRP	265,197	213,889	316,444	275,901	325,419	195,580	361,481	261,914	164,294	179,009	227,971	259,550
RW-12(B1)	1-4	275,277	199,593	282,541	239,150	295,049	207,478	336,788	251,955	165,279	204,533	274,811	362,249
B2 Zone													
RW-5(B2)[2]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-7(B2)[2]	1-4	--	--	--	--	--	--	--	--	--	--	--	--
RW-9(B2) (RGRP)	1-4 & RGRP	147,183	120,867	176,722	158,090	170,110	112,626	183,009	135,195	81,419	84,504	103,312	126,445
Total[3]		2,435,633	1,926,569	2,711,412	2,368,410	2,600,529	1,748,340	2,920,198	2,144,355	1,395,162	1,535,869	2,058,817	2,637,177

Notes:

1. Monthly volumes of groundwater extracted are based on effluent totalizer readings at each well (generally taken last Wednesday of each month).

2. Well is offline with EPA approval (RMT, 2000; Geosyntec, 2010).

3. Total values are calculated from the system effluent totalizer, therefore the sum of the well extraction totals may not be equal to the total value reported. This discrepancy is attributed to inherent errors associated with comparing these two independently measured values.

(RGRP) = Regional Groundwater Remediation Program well connected to System 3 for treatment. Further discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a).

-- = well was off this month

EPA = United States Environmental Protection Agency

Table 7a

VOC Sampling Results Summary, System 1

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1/15/2015	<20	**14**	<10	**7.8**	**910**	**17**	9.2	**5.5**	**1200**	<10	**4.4**	NA
Influent	2/19/2015	<20	<10	<10	**6.8**	**1000**	**27**	5.4	<10	**1700**	<10	**5.3**	NA
Influent	3/16/2015	<20	<10	<10	**4.1**	**290**	**28**	6.4	<10	**760**	<10	<10	NA
Influent	4/10/2015	<20	<10	<10	**5.6**	**390**	**25**	5.9	<10	**980**	<10	<10	NA
Influent (D)	4/10/2015	<20	<10	<10	**5.2**	**420**	**26**	6.9	<10	**1000**	<10	<10	NA
Influent	5/21/2015	<20	<10	<10	**11**	**1100**	**31**	8.2	<10	**1800**	<10	**6.5**	NA
Influent	6/25/2015	<20	<10	<10	**8.3**	**880**	**30**	7.8	<10	**1500**	<10	<10	NA
Influent	7/24/2015	<20	**2.2**	<10	<10	**330**	**8.3**	7.8	<10	**770**	<10	<10	NA
Influent (D)	7/24/2015	<1.0	**2.4**	<0.50	**3.7**	**330**	**7.8**	7.3	**2.0**	**780**	**1.7**	**2.6**	NA
Influent	8/21/2015	<20	<10	<10	**7.6**	**1300**	**14**	8.3	<10	**1700**	<10	<10	**0.42**
Influent	9/2/2015	<20	<10	<10	**4.4**	**430**	**8.4**	11	<10	**990**	<10	<10	NA
Influent	10/2/2015	<20	**3.2**	<10	**5.3**	**730**	**28**	9.6	<10	**1400**	<10	<10	NA
Midpoint 1	1/15/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**3.1**	NA
Midpoint 1 (D)	1/15/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**3.0**	NA
Midpoint 1	2/19/2015	<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	3/16/2015	<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	4/10/2015	<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	5/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.35**	NA
Midpoint 1	6/25/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**2.2**	NA
Midpoint 1 (D)	6/25/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**2.3**	NA
Midpoint 1	7/24/2015	<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	8/21/2015	<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	9/2/2015	<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	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.51**	NA
Midpoint 1 (D)	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.83**	NA
Midpoint 2	1/15/2015	<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	2/19/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.32**	<0.50	<0.50	NA
Midpoint 2	3/16/2015	<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	4/10/2015	<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	5/21/2015	<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	6/25/2015	<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	7/24/2015	<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*	*1.6*	*0.5*	*NE*

Table 7a

VOC Sampling Results Summary, System 1

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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]
Midpoint 2	8/21/2015	<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	9/2/2015	<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	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	1/15/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	2/19/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	3/16/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
Effluent (D)	3/16/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
Effluent	4/10/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	5/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	6/25/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	7/24/2015	<1.0	<0.50	<0.50	<0.50	**0.090**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	8/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
Effluent (D)	8/21/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
Effluent	9/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	10/2/2015	<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	1/15/2015	<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	2/19/2015	<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	3/16/2015	<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	4/10/2015	<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	5/21/2015	<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	6/25/2015	<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	7/24/2015	<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	8/21/2015	<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	9/2/2015	<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	10/2/2015	<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*	*1.6*	*0.5*	*NE*

Table 7a

VOC Sampling Results Summary, System 1

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

Mountain View, California

Notes:
All parameters are within effluent limits specified in NPDES permit order no. R2-2012-0012, and NPDES permit no. CAG912002.
The NPDES permit requires semiannual sampling of 1,4-Dioxane when the chemical is known to be in the influent, and biweekly sampling if the effluent concentrations exceed the trigger limit. In August 2013, 1,4-Dioxane was detected at 14 micrograms per liter (µg/L) in the influent, but the effluent concentrations have remained below the trigger limit of 3 µg/L. Therefore, only semiannual effluent sampling for 1,4-Dioxane is 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. R2-2012-0012, and VOC General NPDES Permit No. CAG912002.

(D) = Duplicate
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
Freon 113 = trichlorotrifluoroethane
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 was not 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
VOC = Volatile Organic Compound

Table 7b
Inorganic Sampling Results Summary, System 1
MEW Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	pH	Temp (°C)	Conductivity (µS/cm)	Turbidity[1] (NTU)	Selenium[2] (µg/L)	Rainbow Trout Acute Toxicity[3] (% survival)	
							Three sample moving median	Single sample
Influent	01/15/15	7.24	18.3	666	---	---	---	---
Influent	02/19/15	7.29	18.0	680	---	---	---	---
Influent	03/16/15	6.89	19.3	979	---	---	---	---
Influent	04/10/15	6.70	19.7	1016	---	---	---	---
Influent	05/21/15	7.04	19.5	883	---	---	---	---
Influent	06/25/15	7.11	20.9	706	---	---	---	---
Influent	07/24/15	7.20	20.3	624	---	---	---	---
Influent	08/21/15	7.13	20.8	826	---	---	---	---
Influent	09/02/15	7.08	21.6	1108	---	---	---	---
Influent	10/02/15	6.76	19.9	675	---	---	---	---
Midpoint 1	01/15/15	7.24	18.5	669	---	---	---	---
Midpoint 1	02/19/15	7.33	18.6	690	---	---	---	---
Midpoint 1	03/16/15	6.93	19.0	977	---	---	---	---
Midpoint 1	04/10/15	6.75	19.4	1015	---	---	---	---
Midpoint 1	05/21/15	6.98	19.5	898	---	---	---	---
Midpoint 1	06/25/15	7.08	20.6	722	---	---	---	---
Midpoint 1	07/24/15	7.19	20.1	620	---	---	---	---
Midpoint 1	08/21/15	7.04	20.9	852	---	---	---	---
Midpoint 1	09/02/15	7.13	21.7	1091	---	---	---	---
Midpoint 1	10/02/15	6.75	18.7	682	---	---	---	---
Midpoint 2	01/15/15	7.23	18.3	669	---	---	---	---
Midpoint 2	02/19/15	7.54	18.3	715	---	---	---	---
Midpoint 2	03/16/15	6.96	19.0	982	---	---	---	---
Midpoint 2	04/10/15	6.95	19.1	1006	---	---	---	---
Midpoint 2	05/21/15	7.00	19.4	900	---	---	---	---
Midpoint 2	06/25/15	7.14	20.2	721	---	---	---	---
Midpoint 2	07/24/15	7.34	19.7	627	---	---	---	---
Midpoint 2	08/21/15	7.06	20.8	854	---	---	---	---
Midpoint 2	09/02/15	7.11	21.6	1097	---	---	---	---
Midpoint 2	10/02/15	6.68	19.5	671	---	---	---	---
Effluent	01/15/15	7.25	18.2	668	---	---	---	---
Effluent	02/19/15	7.79	17.7	741	---	10.0	---	---
Effluent	03/16/15	7.02	18.8	994	---	---	---	---
Effluent	04/10/15	7.48	19.2	894	---	---	---	---
Effluent	05/21/15	7.03	19.3	927	---	2.4	---	---
Effluent	06/25/15	7.14	19.4	719	---	---	---	---
Effluent	07/24/15	7.43	19.5	635	---	---	---	---
Effluent	08/21/15	7.17	20.3	858	---	8.4	---	---
Effluent	09/02/15	7.17	21.6	1098	---	---	---	---
Effluent	10/02/15	6.68	19.1	723	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	5	NE	NE
Effluent Limitations:[4]		6.5 to 8.5	NE	NE	NE	NE	90	70

Notes:
All parameters are within effluent limits specified in NPDES permit no. R2-2012-0012, and NPDES permit no. CAG912002.
pH, temperature, electrical conductivity, and turbidity are required to be reported on an annual basis but pH, temperature, and conductivity readings are reported more frequently.
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.
1. As of 12 November 2015, flow to this treatment system was permanently diverted to the RGRP South 101 treatment system. Annual turbidity, fourth quarter selenium and triennial metals, and rainbow trout acute toxicity samples were collected at the South 101 treatment system in November 2015 (Geosyntec, 2016a).
2. Selenium concentrations exceeded the NPDES trigger levels during the October 2009 triennial sampling. The treatment system influent and effluent were sampled three times during the first quarter of 2010, during which time, the trigger level was exceeded again. Selenium is recognized to be in the treatment system effluent primarily due to background concentrations in the extracted groundwater (Fergusun, 2007). As a result, the treatment system effluent was sampled quarterly for selenium (see note 1).
3. Rainbow trout acute toxicity, 96-hr static, percent survival. This analysis is required to be performed annually (see note 1).
4. Effluent limitation in system discharge as specified in Order No. R2-2012-0012, and VOC General NPDES Permit CAG912002.
--- = not applicable, not required
Temp = temperature
°C = degrees Celsius
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
mg/L = milligrams per liter
µS/cm = micro Siemens per centimeter
NTU = nephelometric turbidity unit
NE = not established
NPDES = National Pollutant Discharge Elimination System
VOC = volatile organic compound

Table 8a

VOC Sampling Results Summary, System 3

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1/15/2015	<20	**15**	<10	**14**	**620**	**26**	6.2	**8.3**	**1000**	**12**	<10	NA
Influent	2/19/2015	<20	**7.7**	<10	**9.2**	**570**	**17**	6.6	<10	**960**	**6.9**	<10	**2.2**
Influent (D)	2/19/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.8**
Influent	3/16/2015	<20	**7.2**	<10	**9.1**	**520**	**19**	6.1	<10	**870**	**7.0**	<10	NA
Influent (D)	3/16/2015	<10	**8.7**	<5.0	**9.4**	**680**	**20**	6.6	<5.0	**1100**	**6.9**	<5.0	NA
Influent	4/10/2015	<20	<10	<10	**10**	**520**	**20**	6.6	<10	**970**	**7.6**	<10	NA
Influent	5/21/2015	<20	**7.2**	<10	**12**	**510**	**18**	5.9	<10	**890**	**8.7**	<10	**2.1**
Influent (D)	5/21/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.9**
Influent	6/25/2015	<20	**7.4**	<10	**11**	**520**	**17**	5.9	<10	**910**	**6.4**	<10	NA
Influent	7/24/2015	<10	**6.9**	<5.0	**7.7**	**530**	**15**	4.4	<5.0	**840**	**4.9**	<5.0	NA
Influent	8/21/2015	<10	**7.8**	<5.0	**8.7**	**600**	**17**	5.0	<5.0	**930**	**5.7**	<5.0	**1.3**
Influent (D)	8/21/2015	<10	**7.8**	<5.0	**8.8**	**600**	**17**	5.0	<5.0	**920**	**5.7**	<5.0	NA
Influent	9/2/2015	<10	**6.0**	<5.0	**8.4**	**570**	**17**	5.3	<5.0	**1100**	**6.5**	<5.0	NA
Influent	10/2/2015	<10	**6.5**	<5.0	**8.4**	**510**	**17**	5.7	<5.0	**970**	**6.1**	**3.0**	NA
Midpoint 1	1/15/2015	<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	2/19/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.2**	NA
Midpoint 1	3/16/2015	<1.0	**0.21**	<0.50	<0.50	**1.3**	<0.50	<0.50	<0.50	<0.50	<0.50	**2.4**	NA
Midpoint 1	4/10/2015	<1.0	**0.56**	<0.50	<0.50	**18**	<0.50	<0.50	<0.50	<0.50	<0.50	**2.1**	NA
Midpoint 1	5/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.26**	NA
Midpoint 1	6/25/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.4**	NA
Midpoint 1	7/24/2015	<1.0	**0.55**	<0.50	<0.50	**8.7**	<0.50	<0.50	<0.50	<0.50	<0.50	**2.3**	NA
Midpoint 1	8/21/2015	<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	9/2/2015	<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	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.56**	NA
Midpoint 2	1/15/2015	<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	2/19/2015	<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	3/16/2015	<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	4/10/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.62**	NA
Midpoint 2	5/21/2015	<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*	*1.6*	*0.5*	*NE*

Table 8a

VOC Sampling Results Summary, System 3

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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]
Midpoint 2	6/25/2015	<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	7/24/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.35**	NA
Midpoint 2	8/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.41**	<0.50	<0.50	NA
Midpoint 2	9/2/2015	<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	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Effluent	1/15/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.70**
Effluent (D)	1/15/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.88**
Effluent	2/19/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**2.7**
Effluent	3/16/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.4**
Effluent	4/10/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**2.1**
Effluent (D)	4/10/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.8**
Effluent	5/21/2015	<1.0	<0.50	<0.50	<0.50	**0.28**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
Effluent	6/25/2015	<1.0	<0.50	<0.50	<0.50	**0.16**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.4**
Effluent (D)	6/25/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.0**
Effluent	7/24/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.9**
Effluent (D)	7/24/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.9**
Effluent	8/21/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
Effluent	9/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**33**
Effluent (D)	9/2/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**19**
Effluent	10/2/2015	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.56**
Effluent (D)	10/2/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.43**
Travel Blank	1/15/2015	<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	2/19/2015	<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	3/16/2015	<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	4/10/2015	<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	5/21/2015	<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	6/25/2015	<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	7/24/2015	<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	8/21/2015	<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*	*1.6*	*0.5*	*NE*

Table 8a

VOC Sampling Results Summary, System 3

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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]**
Travel Blank	9/2/2015	<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	10/2/2015	<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*	*1.6*	*0.5*	*NE*

Notes:
All parameters are within effluent limits specified in NPDES permit order no. R2-2012-0012, NPDES permit no. CAG912002.
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. R2-2012-0012, VOC General NPDES Permit No. CAG912002.
Monthly samples of effluent are analyzed for 1,4-dioxane. 1,4-Dioxane results from September 2015 are anomalous based on previous and subsequent sampling results. Excluding the September samples, the mean effluent concentration is 1.4 µg/L, which is below the trigger level of 3 µg/L.

1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
Freon 113 = trichlorotrifluoroethane
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 was not 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
(D) = Duplicate
VOC = Volatile Organic Compound

Table 8b
Inorganic Sampling Results Summary, System 3
MEW Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	pH	Temp (°C)	Conductivity (µS/cm)	Turbidity[1] (NTU)	Rainbow Trout Acute Toxicity[2] (% survival)	
						Three sample moving median	Single sample
Influent	01/15/15	7.31	19.8	704	---	---	---
Influent	02/19/15	7.24	21.1	656	---	---	---
Influent	03/16/15	6.88	19.6	988	---	---	---
Influent	04/10/15	6.58	20.3	1006	---	---	---
Influent	05/21/15	7.11	19.7	890	---	---	---
Influent	06/25/15	7.21	21.1	721	---	---	---
Influent	07/24/15	7.20	20.8	601	---	---	---
Influent	08/21/15	7.10	20.4	847	---	---	---
Influent	09/02/15	7.22	21.3	944	---	---	---
Influent	10/02/15	6.87	19.8	956	---	---	---
Midpoint 1	01/15/15	7.37	19.5	707	---	---	---
Midpoint 1	02/19/15	7.33	21.3	654	---	---	---
Midpoint 1	03/16/15	6.90	19.6	987	---	---	---
Midpoint 1	04/10/15	6.72	20.5	1010	---	---	---
Midpoint 1	05/21/15	7.08	19.7	881	---	---	---
Midpoint 1	06/25/15	7.16	21.2	721	---	---	---
Midpoint 1	07/24/15	7.25	20.9	601	---	---	---
Midpoint 1	08/21/15	7.14	20.9	849	---	---	---
Midpoint 1	09/02/15	7.30	20.9	936	---	---	---
Midpoint 1	10/02/15	6.96	19.9	949	---	---	---
Midpoint 2	01/15/15	7.47	19.6	707	---	---	---
Midpoint 2	02/19/15	7.27	21.8	643	---	---	---
Midpoint 2	03/16/15	6.88	19.6	988	---	---	---
Midpoint 2	04/10/15	6.90	20.5	1021	---	---	---
Midpoint 2	05/21/15	7.06	19.9	894	---	---	---
Midpoint 2	06/25/15	7.16	21.3	716	---	---	---
Midpoint 2	07/24/15	7.13	20.7	600	---	---	---
Midpoint 2	08/21/15	7.25	20.7	871	---	---	---
Midpoint 2	09/02/15	7.28	22.3	943	---	---	---
Midpoint 2	10/02/15	6.94	19.8	952	---	---	---
Effluent	01/15/15	7.49	19.3	716	---	---	---
Effluent	02/19/15	7.21	23.0	636	---	---	---
Effluent	03/16/15	6.97	19.1	994	---	---	---
Effluent	04/10/15	7.57	20.7	1019	---	---	---
Effluent	05/21/15	7.23	19.1	888	---	---	---
Effluent	06/25/15	7.21	20.6	723	---	---	---
Effluent	07/24/15	7.21	20.6	603	---	---	---
Effluent	08/21/15	7.44	20.8	885	---	---	---
Effluent	09/02/15	7.31	22.4	971	---	---	---
Effluent	10/02/15	6.94	19.6	993	---	---	---
NPDES Trigger Levels:		---	---	---	5	NE	NE
Effluent Limitations:[3]		6.5 to 8.5	NE	NE	NE	90	70

Notes:

All parameters are within effluent limits specified in NPDES permit no. R2-2012-0012, and NPDES permit no. CAG912002
pH, temperature, electrical conductivity, and turbidity are required to be reported on an annual basis but pH, temperature, and conductivity readings are reported more frequently. 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 (see note 1).
1. As of 12 November 2015, flow to this treatment system was permanently diverted to the RGRP South 101 treatment system. Annual turbidity, fourth quarter selenium and triennial metals, and rainbow trout acute toxicity samples were collected at the South 101 treatment system in November 2015 (Geosyntec, 2016a).
2. Rainbow trout acute toxicity, 96-hr static, percent survival. This analysis is required to be performed annually (see note 1).
3. Effluent limitation in system discharge as specified in Order No. R2-2012-0012, VOC General NPDES Permit CAG912002.
--- = 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
µS/cm = micro Siemens per centimeter
NTU = nephelometric turbidity unit
NE = not established
NPDES = National Pollutant Discharge Elimination System
VOC = volatile organic compound

Table 9
VOC Mass Removal Summary, System 1
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

	Total Groundwater Extracted[1] (gallons)	Influent VOC Concentration[1] (mg/L)	Total VOC Mass Removed[1] (pounds)
January	1,270,430	2.2	23
February	848,000	2.7	19
March	936,000	1.1	8
April	915,000	1.4	11
May	928,835	3.0	23
June	555,650	2.4	11
July	748,140	1.1	7
August	633,350	3.0	16
September	594,420	1.4	7
October	526,230	2.2	10
November[2,3]	262,610		5
December[2]	--	--	--
2015 Cumulative[1]	8,218,665		140

Notes:

1. Total groundwater extracted, influent VOC concentrations, total VOC mass removed, and 2015 cumulative totals were obtained from the 2015 quarterly NPDES reports (Weiss, 2015c,e,g, and 2016a).

2. As of November 12, 2015, flow to this treatment system was permanently diverted to the RGRP South of 101 Treatment System.

3. October influent VOC concentration was used to estimate the total VOC mass removed in November.

mg/L = milligrams per liter

NPDES = National Pollutant Discharge Elimination System

VOC = Volatile Organic Compound

RGRP = Regional Groundwater Remediation Program

Table 10

VOC Mass Removal Summary, System 3

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

	Total Groundwater Extracted[1] (gallons)	Influent VOC Concentration[1] (mg/L)	Total VOC Mass Removed[1] (pounds)
January	2,131,200	1.7	30
February	1,688,950	1.6	22
March	2,383,900	1.6	33
April	2,074,000	1.5	26
May	2,280,530	1.5	28
June	1,489,560	1.5	18
July	2,355,310	1.4	28
August	1,718,400	1.6	23
September	1,226,100	1.7	18
October	1,335,650	1.5	17
November[2,3]	755,010		10
December[2]	--	--	--
2015 Cumulative[1]	19,438,610		252

Notes:

1. Total groundwater extracted, influent VOC concentrations, total VOC mass removed, and 2015 cumulative totals were obtained from the NPDES quarterly reports (Weiss, 2015d,f,h, and 2016b).
2. As of November 12, 2015, flow to this treatment system was permanently diverted to the RGRP South of 101 Treatment System.
3. October influent VOC concentration was used to estimate the total VOC mass removed in November.

mg/L = milligrams per liter
NPDES = National Pollutant Discharge Elimination System
VOC = Volatile Organic Compound
RGRP = Regional Groundwater Remediation Program

Table 11
Summary of 2015 Non-Routine Maintenance and Operational Activities, System 1
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Date	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
January 8	AE/RW-9-2	4 hours	Planned manual shutdown	Well was shut down for a pump change. The well was restarted.	Not Required
January 8	RW-21A	4 hours	Planned manual shutdown	Well was shut down for a pump change. The well was restarted.	Not Required
January 15	Treatment System	11 hours	Sump high level alert	The alert was triggered from O&M activities. The alert was cleared and the system was restarted.	Not Required
January 16	Treatment System	<1 hour	Sump high level alert	Switch was triggered while pumping down sump. Alert was reset and the system was restarted.	Not Required
February 2 - December 31	AE/RW-9-1, AE/RW-9-2, RW-20A, RW-21A	---	Planned manual shutdown	Wells were shut down with EPA approval for the ISCO pilot test. Wells operated periodically during the ISCO injections.	Geosyntec notified USEPA on January 29, 2015
February 6 - 9	Treatment System	57 hours	Well vault high level alert	Alert was triggered by heavy rains in the evening of Friday, February 6. The water was pumped out, the alert was reset and the system was restarted in the morning of Monday, February 9.	Not Required
March 2	Treatment System	6 hours	Planned manual shutdown	System was shut down to replace effluent flow meter and mount. System was restarted.	Not Required
March 18	AE/RW-9-2	<1 hour	Low flow alert	Alert was triggered during sampling of well when discharge was redirected into a drum. Alert was reset.	Not Required
April 8	RW-4A	5 hours	Planned manual shutdown	Well was shut down for a pump change; the pump and motor were replaced and the well was restarted.	Not Required
April 23	Treatment System	1 hour	Planned manual shutdown	The system was shut down to perform preventative valve replacement on GAC vessels; the system was restarted.	Not Required
April 26	RW-4(B1)	20 hours	Low flow alert	Alert was caused by a fouled flow meter; the flow meter was cleaned and well was restarted.	Not Required
May 11	RW-4(B1)	21 hours	Low flow alert	Alert was caused by a fouled flow meter; the flow meter was cleaned and well was restarted.	Not Required
June 3	RW-25A	3 hours	Multiple alerts	Alerts were triggered by a loose connection in the flow meter; the connection was repaired and well was restarted.	Not Required
June 15	Treatment System, LDV-05	4 hours	Vault high level alert	Alert was triggered during repair of a damaged underground conduit; the alert was reset and the system was restarted.	Not Required
June 16	Treatment System, AE/RW-9-1, AE/RW-9-2, RW-20A, RW-21A	<1 hour	Multiple alerts	Alerts were triggered during testing of float switches; alerts were reset and the system was restarted.	Not Required
June 18 - 19	Treatment System	23 hours	Planned manual shutdown	System was shut down to pressure test system pipeline; the system was restarted.	Not Required
July 27	Treatment System, RW-21A	<1 hour	Vault high level alert	Alert was triggered during pipeline realignment work. The alert was reset and the system was restarted.	Not Required
August 3	Treatment System	1 hour	Planned manual shutdown	System was shut down to clean air bleed valves. The system was restarted.	Not Required
August 5	RW-25A	5 hours	Planned manual shutdown	Well was shut down to inspect pipeline. The well was restarted.	Not Required
August 18	Treatment System	1 hour	Planned manual shutdown	System was shut down to replace valve on treatment system pipeline. The system was restarted.	Not Required
August 24	Treatment System, AE/RW-9-1	5 hours	Well vault high level alert	Alert was triggered when electrical conduit was cut by others, severing wires. The conduit and wires were replaced, and the system was restarted.	Not Required
August 31	Treatment System, AE/RW-9-2	<1 hour	Multiple alerts	Alerts were triggered when the computer system was restarted. The alerts were cleared and the system was restarted.	Not Required
September 29	RW-4A	14 hours	Low flow alert	Alert was caused by a fouled flow meter. The flow meter was cleaned and the well was restarted.	Not Required
October 1 - 31	Treatment System	164 hours, non-consecutive	Planned manual shutdown	System was shut down for pipeline realignment and consolidation of flow at RGRP South of 101 treatement system. The system was restarted daily when possible. None of the system downtime events exceeded 72 hours.	Not Required
October 31 - November 2	Treatment System	55 hours	Communication Problem	System lost communication with the RGRP South of 101 treatment system and shut down. The system was restarted on 11/2.	Not Required
November 9 - 10	Treatment System, AE/RW-9-1	23 hours	Vault high level alert	Alert was triggered by rain water. The water was pumped out, the alert was cleared, and the system was restarted.	Not Required
November 12	Treatment System	<1 hour	Planned manual shutdown	System was shut down, flow was permanently diverted to RGRP South of 101 Treatment System.	NOI approved by RWQCB on October 21, 2015.

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 = United States Environmental Protection Agency
O&M = operations and maintenance
PLC = programmable logic controller
GAC = granular activated carbon
ISCO = in situ chemical oxidation
NOI = Notice of Intent
RGRP = Regional Groundwater Remediation Program
RWQCB = Regional Water Quality Control Board

Table 12
Summary of 2015 Non-Routine Maintenance and Operational Activities, System 3
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Date	Component	Off-line Time	Event/Alert	Diagnosis and Response	Regulatory Notification[1]
February 6 - 7	Treatment System	27 hours	Well vault high level alert	Alert was caused by heavy rains. The water drained from the vault, the alert was reset, and the system was restarted.	Not Required
February 13 - 16	Treatment System	64 hours	Sump high level alert	The sump pump could not pump against elevated filter pressures. The alert was received in the evening of Friday, February 13. Flow was diverted to the secondary filter housing, and the system was restarted in the morning of Monday, February 16.	Not Required
March 5	RW-12(B1)	<1 hour	Low flow alert	Alert was triggered by a fouled flow meter. The meter was cleaned and the well was restarted.	Not Required
March 13	Treatment System	<1 hour	Multiple alerts	Alerts were triggered during system testing. The alerts were reset and the system was restarted.	Not Required
June 16	RW-9(B2)	5 hours	Pump low flow alert	Alert was triggered by a fouled flow meter. The meter was cleaned and the well was restarted.	Not Required
June 28	Treatment System	14 hours	Sump high level alert	Alert was caused by plugged filters; the filter housing was changed over and the system was restarted.	Not Required
June 29	RW-18A	<1 hour	Pump low flow alert	Alert was triggered by a fouled flow meter. The meter was cleaned and the well was restarted.	Not Required
August 19	Treatment System, RW-9A, RW-9(B1), RW-9(B2)	<1 hour	Multiple alerts	Alerts were triggered during testing of the float switch. The alerts were cleared and the system was restarted.	Not Required
August 20	RW-27A	1 hour	Low flow alert	Alert was caused by a fouled flow meter. The meter was cleaned and the well was restarted.	Not Required
September 1 - 2	Treatment System, LDV-05	13 hours	Multiple alerts	Alerts were triggered by a failed float switch. The switch was replaced and the system was restarted.	Not Required
September 5 - 8	Treatment System	61 hours	Multiple alerts	Alerts were triggered by blown fuses controlling the sump pump. The fuses were replaced and the system was restarted.	Not Required
September 11	RW-18A	<1 hour	Low flow alert	Alert was cleared and the well was restarted.	Not Required
September 14 - 30	Treatment System	379 hours, non-consecutive	Planned manual shutdown	System was shut down for pipeline realignment and consolidation of flow at RGRP South of 101 treatment system. The system was restarted daily when possible. None of the system downtime events exceeded 72 hours.	Not Required
November 8 - 9	RW-12A	34 hours	Low flow alert	Alert was triggered by a fouled flow meter. The flow meter was cleaned and the well was restarted.	Not Required
November 10 - 11	Treatment System	<1 hour	Multiple alerts	Alerts were triggered by entrapped air in sump pump discharge line. The line was cleared and the system was restarted.	Not Required
November 12	Treatment System	<1 hour	Planned manual shutdown	System was shut down, and flow was permanently diverted to RGRP South of 101 Treatment System.	NOI approved by RWQCB on October 21, 2015

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 = United States Environmental Protection Agency

NOI = Notice of Intent

O&M = operations and maintenance

RGRP = Regional Groundwater Remediation Program

RWQCB = Regional Water Quality Control Board

Table 13a

Buildings 1-4 Groundwater Elevations, January through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

Mountain View, California

Well ID	TOC Elevation (ft msl)	19 March 2015		17 September 2015	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
A Zone					
33A	43.74	12.09	31.65	14.19	29.55
46A	42.10	12.75	29.35	14.80	27.30
51A	44.22	19.84	24.38	19.61	24.61
57A	39.21	13.43	25.78	14.98	24.23
59A	39.56	14.25	25.31	15.79	23.77
61A (RGRP)	37.18	11.75	25.43	13.71	23.47
62A (RGRP)	35.3	13.01	22.29	13.18	22.12
67A	39.77	15.96	23.81	17.16	22.61
68A	43.26	14.70	28.56	16.70	26.56
76A	40.08	17.64	22.44	18.85	21.23
84A	43.38	12.46	30.92	14.57	28.81
118A	39.78	16.67	23.11	17.58	22.20
121A	41.82	16.10	25.72	17.56	24.26
124A	38.86	15.84	23.02	16.22	22.64
127A	43.79	11.96	31.83	13.83	29.96
128A	43.38	11.41	31.97	13.89	29.49
129A	41.47	13.92	27.55	16.11	25.36
130A	41.57	15.27	26.30	17.62	23.95
133A	43.75	15.04	28.71	15.96	27.79
156A	40.22	19.58	20.64	20.05	20.17
157A	40.50	18.59	21.91	18.51	21.99
REG-MW-2A (RGRP)	38.11	11.98	26.13	13.88	24.23
RW-3A	43.34	11.85	31.49	13.93	29.41
RW-4A	42.66	16.97	25.69	23.41	19.25
RW-5A	36.86	13.87	22.99	14.66	22.20
RW-7A	37.18	19.28	17.90	20.90	16.28
RW-9A (RGRP)	37.83	18.64	19.19	20.22	17.61
RW-16A	43.89	16.77	27.12	18.68	25.21
RW-18A	37.53	13.11	24.42	14.52	23.01
RW-27A	38.41	27.37	11.04	19.22	19.19
RW-28A	42.33	NM	NA	17.92	24.41
B1 Zone					
2B1	43.43	16.33	27.10	17.72	25.71
20B1	43.89	13.34	30.55	14.44	29.45
60B1	39.64	18.86	20.78	20.52	19.12
115B1	38.76	14.45	24.31	15.87	22.89
119B1 (RGRP)	42.96	13.33	29.63	14.35	28.61
147B1	37.82	12.80	25.02	14.25	23.57
RW-3(B1)	43.28	12.14	31.14	14.12	29.16
RW-4(B1)	42.61	16.50	26.11	16.56	26.05
RW-5(B1)	37.87	13.20	24.67	14.81	23.06
RW-7(B1)	36.29	50.94	-14.65	48.21	-11.92
RW-9(B1)R (RGRP)	38.59	40.54	-1.95	51.78	-13.19
RW-12(B1)	40.51	21.90	18.61	24.74	15.77
B2 Zone					
10B2	43.90	10.21	33.69	12.28	31.62

Table 13a

Buildings 1-4 Groundwater Elevations, January through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

Mountain View, California

Well ID	TOC Elevation (ft msl)	19 March 2015		17 September 2015	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
B2 Zone					
11B2	37.19	9.74	27.45	10.13	27.06
113B2 (RGRP)	39.01	14.38	24.63	16.24	22.77
118B2	43.21	10.46	32.75	12.14	31.07
148B2	37.72	9.68	28.04	10.62	27.10
RW-3(B2)	42.96	9.34	33.62	11.44	31.52
RW-4(B2)	41.79	22.29	19.50	51.70	-9.91
RW-5(B2)	37.98	NM	NA	10.43	27.55
RW-7(B2)	38.76	13.09	25.67	13.17	25.59
RW-9(B2) (RGRP)	37.88	67.35	-29.47	58.08	-20.20

Notes:
ft msl = Feet Mean Sea Level
(RGRP) = Regional Groundwater Remediation Program Well associated with the Fairchild Operation and Maintenance Program (RMT, 2003)
BTOC = Below Top Of Casing
TOC = Top of Casing
NM = Not Measured
NA = Not Available

Table 13b

Building 9 Groundwater Elevations, January through December 2015

MEW Former Fairchild Buildings 1-4, 9,18 Groundwater Remediation Programs

Mountain View, California

Well ID	TOC Elevation (ft msl)	19 March 2015		17 September 2015	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
A Zone					
35A	42.67	11.95	30.72	15.65	28.59
36A	42.32	11.66	30.66	NM	NA
37A	43.21	12.65	30.56	15.82	28.55
40A	43.44	NM	NA	NM	NA
41A	42.40	13.26	29.14	17.70	26.62
42A	42.97	13.82	29.15	NM	NA
43A	43.38	13.78	29.60	18.77	26.68
44A	43.13	13.69	29.44	18.47	26.64
122A	44.23	13.45	30.78	15.64	28.64
123A	44.37	13.16	31.21	16.90	28.70
126A	42.85	13.82	29.03	NM[1]	NA
137A	43.68	12.93	30.75	15.69	28.57
138A	43.60	13.36	30.24	17.04	27.35
AE/RW-9-1	43.15	12.77	30.38	14.69	28.58
AE/RW-9-2	43.85	13.17	30.68	15.42	28.56
RW-20A	43.57	12.79	30.78	15.04	28.64
RW-21A	43.16	12.39	30.77	14.62	28.67
B1 Zone					
69B1	42.62	12.76	29.86	16.47	27.86

Notes:
ft msl = Feet Mean Sea Level
TOC = Top of Casing
BTOC = Below Top Of Casing
NM = Not Measured
NA = Not Available
[1] Well 126A destroyed on 3 September 2015. A replacement well will be installed in 2016.

Table 13c

Building 18 Groundwater Elevations, January through December 2015

MEW Former Fairchild Buildings 1-4, 9, 18 Groundwater Remediation Programs

Mountain View, California

Well ID	TOC Elevation (ft msl)	19 March 2015		17 September 2015	
		Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)	Depth To Water (feet BTOC)	Groundwater Elevation (ft msl)
A Zone					
54A	39.774	12.46	27.31	14.90	24.87
58A	38.132	11.68	26.45	14.42	23.71
80A	38.925	12.42	26.51	18.00	20.93
147A	39.26	11.60	27.66	15.41	23.85
151A	39.829	12.01	27.82	14.90	24.93
152A	38.555	12.09	26.47	13.78	24.78
RW-25A	38.38	13.48	24.90	15.32	23.06
B1 Zone					
32B1 (RGRP)	38.164	13.37	24.79	41.06	-2.90
143B1 (RGRP)	39.29	12.63	26.66	17.82	21.47

Notes:
ft msl = Feet Mean Sea Level
(RGRP) = Regional Groundwater Remediation Program Well associated with the Fairchild Operation and Maintenance Program (RMT, 2003)
BTOC = Below Top Of Casing
TOC = Top of Casing

Table 14a

Buildings 1-4 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Program

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Southern Wall - Upgradient Well Pairs						
3/24/2011	127A	34.93	33A	34.53	0.40	Inward
5/26/2011	127A	33.96	33A	29.73	4.23	Inward
9/15/2011	127A	34.08	33A	33.53	0.55	Inward
11/10/2011	127A	33.82	33A	33.27	0.55	Inward
3/15/2012	127A	33.67	33A	33.09	0.58	Inward
5/24/2012	127A	33.76	33A	33.19	0.57	Inward
9/20/2012	127A	33.20	33A	32.67	0.53	Inward
11/21/2012	127A	33.01	33A	32.49	0.52	Inward
3/21/2013	127A	33.90	33A	33.37	0.53	Inward
5/16/2013	127A	33.96	33A	33.36	0.60	Inward
9/19/2013	127A	33.20	33A	32.68	0.52	Inward
11/25/2013	127A	32.91	33A	32.52	0.39	Inward
3/20/2014	127A	32.63	33A	32.16	0.47	Inward
5/15/2014	127A	32.06	33A	31.62	0.44	Inward
9/18/2014	127A	31.04	33A	30.60	0.44	Inward
11/13/2014	127A	30.72	33A	30.28	0.44	Inward
3/19/2015	127A	31.83	33A	31.65	0.18	Inward
5/18/2015	127A	31.21	33A	30.74	0.47	Inward
9/17/2015	127A	29.96	33A	29.55	0.41	Inward
11/12/2015	127A	29.77	33A	29.31	0.46	Inward
3/24/2011	128A	34.45	84A	33.94	0.51	Inward
5/26/2011	128A	44.33	84A	34.04	10.29	Inward
9/15/2011	128A	33.79	84A	32.68	1.11	Inward
11/10/2011	128A	33.55	84A	32.39	1.16	Inward
3/15/2012	128A	33.48	84A	32.27	1.21	Inward
5/24/2012	128A	33.48	84A	32.39	1.09	Inward
9/20/2012	128A	32.98	84A	31.87	1.11	Inward
11/21/2012	128A	32.93	84A	31.63	1.30	Inward
3/21/2013	128A	33.62	84A	33.00	0.62	Inward
5/16/2013	128A	33.63	84A	32.58	1.05	Inward
9/19/2013	128A	32.94	84A	31.94	1.00	Inward
11/25/2013	128A	33.17	84A	31.66	1.51	Inward
3/20/2014	128A	32.54	84A	31.43	1.11	Inward
5/15/2014	128A	31.74	84A	30.84	0.90	Inward
9/18/2014	128A	30.79	84A	29.83	0.96	Inward
11/13/2014	128A	30.26	84A	29.54	0.72	Inward
3/19/2015	128A	31.97	84A	30.92	1.05	Inward
5/18/2015	128A	31.05	84A	29.98	1.07	Inward
9/17/2015	128A	29.49	84A	28.81	0.68	Inward
11/12/2015	128A	29.41	84A	28.55	0.86	Inward
3/24/2011	136A	34.19	133A	32.46	1.73	Inward
5/26/2011	136A	43.96	133A	42.73	1.23	Inward
9/15/2011	136A	32.01	133A	31.00	1.01	Inward
11/10/2011	136A	31.78	133A	30.72	1.06	Inward
3/15/2012	136A	31.55	133A	30.20	1.35	Inward
5/24/2012	136A	31.78	133A	30.73	1.05	Inward

Table 14a

Buildings 1-4 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Program

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Southern Wall - Upgradient Well Pairs						
9/20/2012	136A	31.21	133A	30.25	0.96	Inward
11/21/2012	136A	31.05	133A	30.12	0.93	Inward
3/21/2013	136A	31.96	133A	30.96	1.00	Inward
5/16/2013	136A	31.97	133A	30.96	1.01	Inward
9/19/2013	136A	31.37	133A	30.10	1.27	Inward
11/25/2013	136A	30.99	133A	30.10	0.89	Inward
3/20/2014	136A	30.82	133A	29.94	0.88	Inward
5/15/2014	136A	30.40	133A	29.48	0.92	Inward
9/18/2014	136A	29.35	133A	28.51	0.84	Inward
11/13/2014	136A	29.06	133A	28.26	0.80	Inward
3/19/2015	136A	30.47	133A	28.71	1.76	Inward
5/18/2015	136A	29.61	133A	28.78	0.83	Inward
9/17/2015	136A	28.53	133A	27.79	0.74	Inward
11/12/2015	136A	28.18	133A	27.42	0.76	Inward
Western Wall - Crossgradient Well Pairs						
3/24/2011	130A	29.09	59A	27.90	1.19	Inward
5/26/2011	130A	39.51	59A	42.55	-3.04	Outward
9/15/2011	130A	27.44	59A	26.11	1.33	Inward
11/10/2011	130A	27.22	59A	25.92	1.30	Inward
3/15/2012	130A	27.21	59A	25.85	1.36	Inward
5/24/2012	130A	27.29	59A	25.91	1.38	Inward
9/20/2012	130A	26.88	59A	25.51	1.37	Inward
11/21/2012	130A	26.87	59A	25.52	1.35	Inward
3/21/2013	130A	27.44	59A	26.19	1.25	Inward
5/16/2013	130A	27.30	59A	25.97	1.33	Inward
9/19/2013	130A	26.87	59A	25.59	1.28	Inward
11/25/2013	130A	26.82	59A	25.45	1.37	Inward
3/20/2014	130A	26.68	59A	25.59	1.09	Inward
5/15/2014	130A	26.27	59A	25.12	1.15	Inward
9/18/2014	130A	25.07	59A	24.12	0.95	Inward
11/13/2014	130A	25.02	59A	24.06	0.96	Inward
3/19/2015	130A	26.30	59A	25.31	0.99	Inward
5/18/2015	130A	25.49	59A	24.48	1.01	Inward
9/17/2015	130A	23.95	59A	23.77	0.18	Inward
11/12/2015	130A	24.24	59A	23.17	1.07	Inward
Eastern Wall - Crossgradient Well Pairs						
3/24/2011	129A	29.23	121A	27.96	1.27	Inward
5/26/2011	129A	40.82	121A	39.34	1.48	Inward
9/15/2011	129A	28.23	121A	26.31	1.92	Inward
11/10/2011	129A	28.14	121A	26.21	1.93	Inward
3/15/2012	129A	27.92	121A	26.01	1.91	Inward
5/24/2012	129A	28.13	121A	26.14	1.99	Inward
9/20/2012	129A	28.09	121A	25.85	2.24	Inward
11/21/2012	129A	28.02	121A	25.80	2.22	Inward
3/21/2013	129A	28.68	121A	26.61	2.07	Inward
5/16/2013	129A	28.67	121A	26.42	2.25	Inward

Table 14a

Buildings 1-4 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Program

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Eastern Wall - Crossgradient Well Pairs						
9/19/2013	129A	28.05	121A	26.09	1.96	Inward
11/25/2013	129A	27.94	121A	25.90	2.04	Inward
3/20/2014	129A	27.84	121A	26.00	1.84	Inward
5/15/2014	129A	27.54	121A	25.65	1.89	Inward
9/18/2014	129A	26.40	121A	24.66	1.74	Inward
11/13/2014	129A	26.18	121A	24.55	1.63	Inward
3/19/2015	129A	27.55	121A	25.72	1.83	Inward
5/18/2015	129A	26.52	121A	24.87	1.65	Inward
9/17/2015	129A	25.36	121A	24.26	1.10	Inward
11/12/2015	129A	25.08	121A	23.69	1.39	Inward
Northern Wall - Downgradient Well Pairs						
3/24/2011	156A	25.14	157A	26.69	-1.55	Outward
5/26/2011	156A	34.86	157A	23.76	11.10	Inward
9/15/2011	156A	21.62	157A	23.84	-2.22	Outward
11/10/2011	156A	21.59	157A	23.73	-2.14	Outward
3/15/2012	156A	21.46	157A	23.59	-2.13	Outward
5/24/2012	156A	21.60	157A	23.70	-2.10	Outward
9/20/2012	156A	21.33	157A	23.36	-2.03	Outward
11/21/2012	156A	21.50	157A	23.37	-1.87	Outward
3/21/2013	156A	21.83	157A	23.97	-2.14	Outward
5/16/2013	156A	21.62	157A	23.86	-2.24	Outward
9/19/2013	156A	21.37	157A	23.49	-2.12	Outward
11/25/2013	156A	21.32	157A	23.33	-2.01	Outward
3/20/2014	156A	21.77	157A	23.67	-1.90	Outward
5/15/2014	156A	21.25	157A	23.12	-1.87	Outward
9/18/2014	156A	20.40	157A	22.10	-1.70	Outward
11/13/2014	156A	20.49	157A	22.09	-1.60	Outward
3/19/2015	156A	20.64	157A	21.91	-1.27	Outward
5/18/2015	156A	20.87	157A	22.45	-1.58	Outward
9/17/2015	156A	20.17	157A	21.99	-1.82	Outward
11/12/2015	156A	20.17	157A	21.47	-1.30	Outward
3/24/2011	76A	24.34	118A	23.93	0.41	Inward
5/26/2011	76A	27.12	118A	25.57	1.55	Inward
9/15/2011	76A	22.74	118A	23.60	-0.86	Outward
11/10/2011	76A	22.73	118A	23.60	-0.87	Outward
3/15/2012	76A	22.73	118A	23.45	-0.72	Outward
5/24/2012	76A	22.77	118A	23.43	-0.66	Outward
9/20/2012	76A	22.54	118A	23.03	-0.49	Outward
11/21/2012	76A	22.74	118A	23.15	-0.41	Outward
3/21/2013	76A	23.02	118A	23.78	-0.76	Outward
5/16/2013	76A	22.88	118A	23.63	-0.75	Outward
9/19/2013	76A	22.59	118A	23.31	-0.72	Outward
11/25/2013	76A	22.60	118A	23.19	-0.59	Outward
3/20/2014	76A	22.73	118A	23.35	-0.62	Outward
5/15/2014	76A	22.42	118A	23.05	-0.63	Outward
9/18/2014	76A	21.76	118A	22.17	-0.41	Outward

Table 14a

Buildings 1-4 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Program

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Northern Wall - Downgradient Well Pairs						
11/13/2014	76A	21.83	118A	22.22	-0.39	Outward
3/19/2015	76A	22.44	118A	23.11	-0.67	Outward
5/18/2015	76A	22.05	118A	22.53	-0.48	Outward
9/17/2015	76A	21.23	118A	22.20	-0.97	Outward
11/12/2015	76A	21.26	118A	21.69	-0.43	Outward
Vertical Gradient Well Pairs						
3/24/2011	115B1	26.93	124A	25.87	1.06	Upward
5/26/2011	115B1	40.61	124A	39.52	1.09	Upward
9/15/2011	115B1	25.01	124A	24.36	0.65	Upward
11/10/2011	115B1	25.13	124A	24.29	0.84	Upward
3/15/2012	115B1	24.81	124A	24.12	0.69	Upward
5/24/2012	115B1	24.94	124A	24.16	0.78	Upward
9/20/2012	115B1	24.68	124A	23.83	0.85	Upward
11/21/2012	115B1	23.83	124A	23.84	-0.01	Downward
3/21/2013	115B1	25.41	124A	24.57	0.84	Upward
5/16/2013	115B1	25.42	124A	24.03	1.39	Upward
9/19/2013	115B1	24.93	124A	23.97	0.96	Upward
11/25/2013	115B1	24.71	124A	23.90	0.81	Upward
3/20/2014	115B1	25.10	124A	24.03	1.07	Upward
5/15/2014	115B1	24.42	124A	23.65	0.77	Upward
9/18/2014	115B1	23.33	124A	22.75	0.58	Upward
11/13/2014	115B1	23.41	124A	22.73	0.68	Upward
3/19/2015	115B1	24.31	124A	23.02	1.29	Upward
5/18/2015	115B1	23.59	124A	22.99	0.60	Upward
9/17/2015	115B1	22.89	124A	22.64	0.25	Upward
11/12/2015	115B1	22.83	124A	22.12	0.71	Upward
3/24/2011	119B1	33.39	133A	32.46	0.93	Upward
5/26/2011	119B1	42.92	133A	42.73	0.19	Upward
9/15/2011	119B1	32.07	133A	31.00	1.07	Upward
11/10/2011	119B1	31.81	133A	30.72	1.09	Upward
3/15/2012	119B1	31.61	133A	30.20	1.41	Upward
5/24/2012	119B1	31.86	133A	30.73	1.13	Upward
9/20/2012	119B1	31.25	133A	30.25	1.00	Upward
11/21/2012	119B1	31.12	133A	30.12	1.00	Upward
3/21/2013	119B1	32.03	133A	30.96	1.07	Upward
5/16/2013	119B1	32.09	133A	30.96	1.13	Upward
9/19/2013	119B1	31.39	133A	30.10	1.29	Upward
11/25/2013	119B1	31.03	133A	30.10	0.93	Upward
3/20/2014	119B1	30.92	133A	29.94	0.98	Upward
5/15/2014	119B1	30.41	133A	29.48	0.93	Upward
9/18/2014	119B1	29.60	133A	28.51	1.09	Upward
11/13/2014	119B1	29.14	133A	28.26	0.88	Upward
3/19/2015	119B1	29.63	133A	28.71	0.92	Upward
5/18/2015	119B1	29.64	133A	28.78	0.86	Upward
9/17/2015	119B1	28.61	133A	27.79	0.82	Upward
11/12/2015	119B1	28.27	133A	27.42	0.85	Upward

Table 14a

Buildings 1-4 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Program

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Vertical Gradient Well Pairs						
3/24/2011	20B1	34.45	33A	34.53	-0.08	Downward
5/26/2011	20B1	46.63	33A	29.73	16.90	Upward
9/15/2011	20B1	33.14	33A	33.53	-0.39	Downward
11/10/2011	20B1	32.86	33A	33.27	-0.41	Downward
3/15/2012	20B1	32.74	33A	33.09	-0.35	Downward
5/24/2012	20B1	32.89	33A	33.19	-0.30	Downward
9/20/2012	20B1	32.31	33A	32.67	-0.36	Downward
11/21/2012	20B1	32.10	33A	32.49	-0.39	Downward
3/21/2013	20B1	33.06	33A	33.37	-0.31	Downward
5/16/2013	20B1	33.08	33A	33.36	-0.28	Downward
9/19/2013	20B1	32.39	33A	32.68	-0.29	Downward
11/25/2013	20B1	32.08	33A	32.52	-0.44	Downward
3/20/2014	20B1	31.91	33A	32.16	-0.25	Downward
5/15/2014	20B1	31.33	33A	31.62	-0.29	Downward
9/18/2014	20B1	30.33	33A	30.60	-0.27	Downward
11/13/2014	20B1	30.04	33A	30.28	-0.24	Downward
3/19/2015	20B1	30.55	33A	31.65	-1.10	Downward
5/18/2015	20B1	30.48	33A	30.74	-0.26	Downward
9/17/2015	20B1	29.45	33A	29.55	-0.10	Downward
11/12/2015	20B1	29.11	33A	29.31	-0.20	Downward
3/24/2011	60B1	24.25	118A	23.93	0.32	Upward
5/26/2011	60B1	25.35	118A	25.57	-0.22	Downward
9/15/2011	60B1	21.83	118A	23.60	-1.77	Downward
11/10/2011	60B1	22.12	118A	23.60	-1.48	Downward
3/15/2012	60B1	21.82	118A	23.45	-1.63	Downward
5/24/2012	60B1	21.76	118A	23.43	-1.67	Downward
9/20/2012	60B1	21.46	118A	23.03	-1.57	Downward
11/21/2012	60B1	21.62	118A	23.15	-1.53	Downward
3/21/2013	60B1	22.09	118A	23.78	-1.69	Downward
5/16/2013	60B1	22.14	118A	23.63	-1.49	Downward
9/19/2013	60B1	21.72	118A	23.31	-1.59	Downward
11/25/2013	60B1	21.54	118A	23.19	-1.65	Downward
3/20/2014	60B1	22.13	118A	23.35	-1.22	Downward
5/15/2014	60B1	21.07	118A	23.05	-1.98	Downward
9/18/2014	60B1	19.74	118A	22.17	-2.43	Downward
11/13/2014	60B1	20.16	118A	22.22	-2.06	Downward
3/19/2015	60B1	20.78	118A	23.11	-2.33	Downward
5/18/2015	60B1	19.78	118A	22.53	-2.75	Downward
9/17/2015	60B1	19.12	118A	22.20	-3.08	Downward
11/12/2015	60B1	19.28	118A	21.69	-2.41	Downward

Notes:
ft msl = Feet Mean Sea Level

Table 14b

Building 9 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, 18 Groundwater Remediation Programs

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Southern Wall - Upgradient Well Pairs						
3/24/2011	123A	33.82	122A	31.53	2.29	Inward
5/26/2011	123A	31.91	122A	26.45	5.46	Inward
9/15/2011	123A	31.99	122A	27.38	4.61	Inward
11/10/2011	123A	31.68	122A	26.67	5.01	Inward
3/15/2012	123A	31.57	122A	26.75	4.82	Inward
5/24/2012	123A	31.85	122A	27.31	4.54	Inward
9/20/2012	123A	30.97	122A	25.68	5.29	Inward
11/21/2012	123A	30.80	122A	25.69	5.11	Inward
3/21/2013	123A	31.81	122A	26.96	4.85	Inward
5/16/2013	123A	31.96	122A	26.88	5.08	Inward
9/19/2013	123A	31.22	122A	26.38	4.84	Inward
11/25/2013	123A	30.77	122A	25.55	5.22	Inward
3/20/2014	123A	30.67	122A	25.14	5.53	Inward
5/15/2014	123A	30.36	122A	25.51	4.85	Inward
9/18/2014	123A	29.13	122A	24.14	4.99	Inward
11/13/2014	123A	28.68	122A	24.16	4.52	Inward
3/19/2015	123A	31.21	122A	30.78	0.43	Inward
5/18/2015	123A	30.13	122A	29.81	0.32	Inward
9/17/2015	123A	28.70	122A	28.64	0.06	Inward
11/12/2015	123A	28.39	122A	27.39	1.00	Inward
Eastern Wall - Crossgradient Well Pairs						
3/24/2011	138A	32.73	137A	29.93	2.80	Inward
5/26/2011	138A	42.39	137A	22.58	19.81	Inward
9/15/2011	138A	31.31	137A	27.61	3.70	Inward
11/10/2011	138A	31.11	137A	26.68	4.43	Inward
3/15/2012	138A	30.99	137A	26.79	4.20	Inward
5/24/2012	138A	31.16	137A	27.46	3.70	Inward
9/20/2012	138A	30.60	137A	25.83	4.77	Inward
11/21/2012	138A	30.57	137A	25.60	4.97	Inward
3/21/2013	138A	31.21	137A	26.92	4.29	Inward
5/16/2013	138A	31.41	137A	26.83	4.58	Inward
9/19/2013	138A	30.71	137A	26.63	4.08	Inward
11/25/2013	138A	30.34	137A	25.61	4.73	Inward
3/20/2014	138A	30.21	137A	25.18	5.03	Inward
5/15/2014	138A	29.91	137A	25.52	4.39	Inward
9/18/2014	138A	28.63	137A	24.30	4.33	Inward
11/13/2014	138A	28.37	137A	24.24	4.13	Inward
3/19/2015	138A	30.24	137A	30.75	-0.51	Outward
5/18/2015	138A	28.84	137A	29.75	-0.91	Outward
9/17/2015	138A	27.35	137A	28.57	-1.22	Outward
11/12/2015	138A	27.06	137A	28.38	-1.32	Outward
Northern Wall - Downgradient Well Pairs						
3/24/2011	126A	31.24	35A	29.98	1.26	Inward
5/26/2011	126A	29.94	35A	24.73	5.21	Inward
9/15/2011	126A	29.82	35A	28.20	1.62	Inward
11/10/2011	126A	29.80	35A	26.47	3.33	Inward

Table 14b

Building 9 Groundwater Elevations, Slurry Wall Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, 18 Groundwater Remediation Programs

Mountain View, California

Date	Well ID (Outside)	Groundwater Elevation (ft msl)	Well ID (Inside)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Northern Wall - Downgradient Well Pairs						
3/15/2012	126A	29.45	35A	26.57	2.88	Inward
5/24/2012	126A	29.75	35A	27.03	2.72	Inward
9/20/2012	126A	29.43	35A	25.49	3.94	Inward
11/21/2012	126A	29.23	35A	25.55	3.68	Inward
3/21/2013	126A	30.08	35A	26.85	3.23	Inward
5/16/2013	126A	30.13	35A	26.70	3.43	Inward
9/19/2013	126A	29.55	35A	26.27	3.28	Inward
11/25/2013	126A	29.35	35A	25.35	4.00	Inward
3/20/2014	126A	29.20	35A	24.97	4.23	Inward
5/15/2014	126A	28.73	35A	25.34	3.39	Inward
9/18/2014	126A	27.69	35A	23.97	3.72	Inward
11/13/2014	126A	27.49	35A	NA	NA	NA
3/19/2015	126A	29.03	35A	30.72	-1.69	Outward
5/18/2015	126A	28.01	35A	29.74	-1.73	Outward
9/17/2015	126A	NA	35A	28.59	NA	NA
11/12/2015	126A	NA	35A	28.35	NA	NA
Vertical Gradient Well Pairs						
3/24/2011	69B1	32.36	37A	30.04	2.32	Upward
5/26/2011	69B1	31.29	37A	41.55	-10.26	Downward
9/15/2011	69B1	30.80	37A	27.38	3.42	Upward
11/10/2011	69B1	30.62	37A	26.24	4.38	Upward
3/15/2012	69B1	30.46	37A	26.30	4.16	Upward
5/24/2012	69B1	30.67	37A	26.80	3.87	Upward
9/20/2012	69B1	30.15	37A	25.66	4.49	Upward
11/21/2012	69B1	30.07	37A	25.67	4.40	Upward
3/21/2013	69B1	30.92	37A	27.06	3.86	Upward
5/16/2013	69B1	30.92	37A	26.41	4.51	Upward
9/19/2013	69B1	30.32	37A	26.56	3.76	Upward
11/25/2013	69B1	30.12	37A	25.49	4.63	Upward
3/20/2014	69B1	29.92	37A	25.16	4.76	Upward
5/15/2014	69B1	29.54	37A	24.95	4.59	Upward
9/18/2014	69B1	28.53	37A	24.17	4.36	Upward
11/13/2014	69B1	28.24	37A	24.28	3.96	Upward
3/19/2015	69B1	29.86	37A	30.56	-0.70	Downward
5/18/2015	69B1	28.80	37A	29.64	-0.84	Downward
9/17/2015	69B1	27.86	37A	28.55	-0.69	Downward
11/12/2015	69B1	27.71	37A	28.35	-0.64	Downward

Notes:
ft msl = Feet Mean Sea Level
NA = Not Available
*Well 126A was destroyed on 3 September 2015. A replacement well will be installed in 2016.

Table 14c

Building 18 Groundwater Elevations, Vertical Gradient Well Pairs, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

Mountain View, California

Date	Well ID (B1 Zone)	Groundwater Elevation (ft msl)	Well ID (A Zone)	Groundwater Elevation (ft msl)	Difference	Gradient Direction
Vertical Gradient Well Pairs						
3/24/2011	32B1	25.77	80A	27.94	-2.17	Downward
9/15/2011	32B1	23.58	80A	26.09	-2.51	Downward
3/15/2012	32B1	23.45	80A	20.29	3.16	Upward
9/20/2012	32B1	23.41	80A	25.99	-2.58	Downward
3/21/2013	32B1	25.02	80A	26.98	-1.96	Downward
9/19/2013	32B1	24.69	80A	27.14	-2.45	Downward
3/20/2014	32B1	24.82	80A	26.93	-2.11	Downward
9/18/2014	32B1	23.55	80A	25.53	-1.98	Downward
3/19/2015	32B1	24.79	80A	26.51	-1.72	Downward
9/17/2015	32B1	-2.90	80A	20.93	-23.83	Downward
3/24/2011	143B1	27.98	147A	29.92	-1.94	Downward
9/15/2011	143B1	25.28	147A	27.68	-2.40	Downward
3/15/2012	143B1	25.10	147A	27.52	-2.42	Downward
9/20/2012	143B1	25.08	147A	27.42	-2.34	Downward
3/21/2013	143B1	26.38	147A	28.80	-2.42	Downward
9/19/2013	143B1	26.51	147A	28.47	-1.96	Downward
3/20/2014	143B1	26.10	147A	27.95	-1.85	Downward
9/18/2014	143B1	24.63	147A	26.57	-1.94	Downward
3/19/2015	143B1	26.66	147A	27.66	-1.00	Downward
9/17/2015	143B1	21.47	147A	23.85	-2.38	Downward

Notes:
ft msl = Feet Mean Sea Level

Table 15
Calculation of Predicted Capture Widths Based on Combined Flow Rate
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

	Buildings 1-4				Building 9	Building 18
Parameter	**A Zone[1]**	**A Zone Slurry Wall[2]**	**B1 Zone[1]**	**B2 Zone[1]**	**A Zone Slurry Wall[3]**	**A Zone[4]**
Q = Combined pumping rate (gpm)	10	22	24	8	18	6.8
b = saturated aquifer thickness (ft)	15	15	25	35	15	15
i = regional hydraulic gradient (ft/ft)	0.004	0.004	0.003	0.004	0.014	0.004
K = hydraulic conductivity (ft/day)[5]	40	40	40	5	40	40
Calculated Capture Width (ft) = Q/(K x b x i)	800	1800	1500	2200	400	500
Measured plume width at widest point (ft)[6]	647	590	647	647	280	315

Notes:

1. The combined pumping rate equals the summed average 2015 flow rates of all extraction wells located within the Former Fairchild Buildings 1-4 site that are outside the slurry wall.
2. The combined pumping rate equals the summed average 2015 flow rates of all extraction wells located within the Former Fairchild Buildings 1-4 site slurry wall.
3. The combined pumping rate equals the January 2015 flow rates of all extraction wells located within the Former Fairchild Building 9 site that are inside the slurry wall. Extraction wells AE/RW-9-1, AE/RW-9-2, RW-20A, RW-21A were shut down with EPA approval in February 2015 for the ISCO Pilot Study at the Former Building 9.
4. The pumping rate equals the average 2015 flow rate for extraction well RW-25A located within the Former Fairchild Building 18 site.
5. Hydraulic conductivity values used for each aquifer zone are from the numerical model included as Appendix B to the 2008 Optimization Report (Geosyntec et al., 2008).
6. Measured plume width at widest point is not continued past site boundaries

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 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
A Zone														
33A	9/19/2012	<1.0	<0.50	<0.50	**1.0**	**13**	<0.50	**1.7**	<5.0	<0.50	**1.0**	**58**	<0.50	NA
46A	9/29/2011	<1.0	**0.9**	<0.5	**1.4**	**0.5**	<0.5	<2.0	<2.0	<0.5	**1.1**	**14**	<0.5	NA
46A	10/23/2012	<1.0	**0.89**	<0.50	**1.2**	**0.69**	<0.50	<0.50	<5.0	<0.50	**0.96**	**15**	<0.50	NA
46A D	10/23/2012	<1.0	**0.82**	<0.50	**1.1**	**0.55**	<0.50	<0.50	<5.0	<0.50	**0.89**	**13**	<0.50	NA
46A	9/26/2013	<1.0	**0.74**	<0.50	**1.2**	**0.58**	<0.50	<0.50	<5.0	<0.50	**0.79**	**14**	<0.50	NA
46A	9/26/2014	<0.50	**0.62**	<0.50	**0.89**	<0.50	<0.50	<2.0	<2.0	<0.50	**0.85**	**12**	<0.50	NA
51A	9/10/2012	<1.0	**14**	<0.50	**19**	**940**	**22**	<0.50	<5.0	<0.50	<0.50	**9.6**	**1.4**	NA
57A	9/7/2012	<1.0	**22**	<0.50	**18**	**3600**	**160**	<0.50	<5.0	<0.50	<0.50	**4.5**	**6.0**	NA
59A	9/7/2012	<1.0	**12**	<0.50	**5.9**	**6.8**	<0.50	<0.50	<5.0	**0.53**	**14**	**29**	<0.50	NA
61A (RGRP)	9/21/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	**4.8**	<0.5	NA
61A (RGRP)	9/26/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	**0.58**	**3.9**	<0.50	NA
61A (RGRP)	10/29/2013	<1.0	**0.62**	<0.50	**0.68**	<0.50	<0.50	<0.50	<5.0	<0.50	**1.0**	**3.0**	<0.50	NA
61A (RGRP)	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	**5.3**	<0.50	NA
62A (RGRP)	9/22/2011	<63	<31	<31	<31	**4200**	**120**	<130	<130	<31	<31	<31	<31	NA
62A (RGRP)	9/19/2012	<1.0	**9.5**	<0.50	**26**	**5300**	**30**	**0.54**	<5.0	<0.50	<0.50	<50	**6.7**	NA
62A (RGRP)	10/22/2013	<1.0	**7.6**	<0.50	**23**	**6200**	**30**	<0.50	<5.0	<0.50	<0.50	<50	**5.7**	NA
62A (RGRP)	9/25/2014	<50	<50	<50	<50	**4900**	<50	<200	<200	<50	<50	<50	<50	NA
62A (RGRP) D	9/25/2014	<25	<25	<25	**25**	**4500**	**48**	<100	<100	<25	<25	<25	<25	NA
67A	9/24/2012	<1.0	**5.8**	<0.50	**6.0**	**620**	**5.9**	**1.5**	<5.0	<0.50	**0.55**	**53**	**0.85**	NA
68A	9/10/2012	<1.0	**2.4**	<0.50	**1.5**	**130**	**1.4**	<0.50	<5.0	**1.4**	**1.0**	**29**	**0.52**	NA
76A	9/16/2011	<1.0	**0.8**	<0.5	**0.8**	**29**	<0.5	<2.0	<2.0	<0.5	**0.9**	**120**	<0.5	NA
76A	9/24/2012	<1.0	**0.64**	<0.50	**0.63**	**25**	<0.50	**0.60**	<5.0	<0.50	**0.76**	**110**	<0.50	NA
76A	9/27/2013	<1.0	**0.56**	<0.50	**0.68**	**28**	**0.61**	**0.65**	<5.0	**0.55**	**0.74**	**140**	<0.50	NA
76A	9/19/2014	<1.0	**0.59**	<0.50	**0.69**	**17**	<0.50	**0.96**	<5.0	**0.78**	<1.0	**110**	<0.50	NA
84A	9/19/2012	<1.0	**2.1**	<0.50	**0.88**	**6.3**	<0.50	<0.50	<5.0	<0.50	**1.8**	**0.85**	<0.50	NA
118A	9/16/2011	<13	**23**	<6.3	**16**	**370**	**24**	<25	<25	<6.3	<6.3	**810**	<6.3	NA
118A	10/15/2012	<20	**12**	<10	**12**	**320**	**19**	<10	<100	<10	<10	**1400**	<10	**2.7**
118A	9/27/2013	<1.0	**16**	<0.50	**13**	**430**	**21**	**3.7**	<5.0	**7.4**	**3.3**	**1100**	**2.3**	NA
118A	9/19/2014	<1.0	**18**	<0.50	**14**	**420**	**22**	**5.0**	<5.0	**10**	<50	**860**	**1.3**	NA
121A	9/10/2012	<1.0	**7.1**	<0.50	**10**	**1200**	**8.1**	<0.50	<5.0	<0.50	<0.50	**26**	**2.1**	NA

Table 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
A Zone														
124A	9/7/2012	<1.0	**17**	<0.50	**25**	**4700**	**24**	<0.50	<5.0	<0.50	<0.50	**61**	**32**	NA
127A	9/29/2011	<1.0	**0.7**	<0.5	**2.0**	**24**	<0.5	**4.1**	<2.0	<0.5	**1.9**	**83**	<0.5	NA
127A	10/23/2012	<1.0	<0.50	<0.50	**1.1**	**11**	<0.50	**1.8**	<5.0	<0.50	**1.2**	**79**	<0.50	NA
127A	9/26/2013	<1.0	<0.50	<0.50	**0.58**	**2.7**	<0.50	**0.90**	<5.0	<0.50	**0.67**	**37**	<0.50	NA
127A	9/29/2014	<0.50	<0.50	<0.50	**0.54**	**4.0**	<0.50	<2.0	<2.0	<0.50	**0.93**	**53**	<0.50	NA
129A	9/10/2012	<1.0	**7.3**	<0.50	**8.7**	**910**	**8.7**	**12**	<5.0	<0.50	**0.99**	**1500**	**15**	NA
130A	9/23/2011	<2.0	**2.6**	<1.0	**2.9**	**11**	<1.0	<4.0	<4.0	**7.4**	**2.6**	**92**	<1.0	NA
130A	9/10/2012	<1.0	**3.0**	<0.50	**3.4**	**13**	**0.57**	<0.50	<5.0	**9.9**	**2.5**	**110**	**0.55**	NA
130A	10/21/2013	<1.0	**2.7**	<0.50	**3.5**	**12**	**0.56**	<0.50	<5.0	**15**	**2.6**	**140**	**0.54**	NA
130A	9/19/2014	<1.0	**3.2**	<0.50	**4.1**	**13**	**0.78**	<0.50	<5.0	**21**	**2.5**	**140**	**0.57**	NA
133A	9/19/2012	<1.0	**3.1**	<0.50	**3.8**	**66**	**1.2**	**8.7**	<5.0	<0.50	**1.7**	**190**	<0.50	NA
156A	9/23/2011	<14	<7.1	<7.1	<7.1	**1000**	**17**	<29	<29	<7.1	<7.1	**47**	<7.1	NA
156A	10/19/2012	<1.0	**5.0**	<0.50	**6.2**	**1600**	**77**	<0.50	<5.0	<0.50	<0.50	**45**	<0.50	**2.0**
156A D	10/19/2012	<1.0	**4.7**	<0.50	**4.4**	**1600**	**110**	<0.50	<5.0	<0.50	<0.50	**46**	<0.50	**2.1**
156A D	10/21/2013	<1.0	**4.5**	<0.50	**9.4**	**1200**	**11**	**0.69**	<5.0	<0.50	<0.50	**56**	**0.65**	NA
156A	10/21/2013	<1.0	**4.5**	<0.50	**9.4**	**1400**	**11**	**0.67**	<5.0	<0.50	<0.50	**56**	**0.61**	NA
156A	9/19/2014	<1.0	**4.7**	<0.50	**9.2**	**1400**	**12**	**0.63**	<5.0	**0.60**	<0.50	<50	**0.64**	NA
157A	9/23/2011	<20	**39**	<10	**21**	**1600**	**14**	<40	<40	<10	<10	**1300**	<10	NA
157A	10/18/2012	<1.0	**31**	<0.50	**14**	**1700**	**7.9**	**4.3**	<5.0	**1.3**	<0.50	**690**	**1.7**	**12**
157A	10/21/2013	<1.0	**42**	<0.50	**31**	**2400**	**12**	**11**	<5.0	**9.7**	**0.76**	**1400**	**2.8**	NA
157A	9/19/2014	<1.0	**37**	<0.50	**26**	**2500**	**12**	**10**	<5.0	**12**	<50	**1400**	**2.5**	NA
REG-MW-2A (RGRP)	10/6/2011	<13	**8.2**	<6.3	**7.3**	**1200**	**18**	<25	<25	<6.3	<6.3	**1100**	**27**	NA
REG-MW-2A (RGRP)	9/21/2012	<1.0	**6.8**	<0.50	**12**	**1400**	**17**	**13**	<5.0	**0.93**	**2.4**	**1500**	**26**	NA
REG-MW-2A (RGRP)	10/22/2013	<1.0	**3.0**	<0.50	**5.5**	**830**	**8.7**	**7.4**	<5.0	**0.57**	**1.4**	**780**	**11**	NA
REG-MW-2A (RGRP)	9/24/2014	<13	<13	<13	<13	**1100**	**17**	<50	<50	<13	<13	**1200**	**21**	NA
RW-3A	10/11/2011	<0.50	**0.54**	<0.50	**1.2**	**16**	<0.50	**2.6**	<5.0	<0.50	**1.3**	**60**	<0.50	NA
RW-3A	9/24/2012	<1.0	<0.50	<0.50	**0.85**	**11**	<0.50	**1.5**	<5.0	<0.50	**0.96**	**51**	<0.50	NA
RW-3A D	9/24/2012	<1.0	<0.50	<0.50	**0.85**	**11**	<0.50	**1.5**	<5.0	<0.50	**0.92**	**52**	<0.50	NA
RW-3A D	10/24/2013	<1.0	<0.50	<0.50	**0.64**	**5.3**	<0.50	**1.2**	<5.0	<0.50	**0.80**	**44**	<0.50	NA
RW-3A	10/24/2013	<1.0	<0.50	<0.50	**0.66**	**4.9**	<0.50	**1.1**	<5.0	<0.50	**0.75**	**44**	<0.50	NA

Table 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
A Zone														
RW-3A	9/30/2014	<0.50	<0.50	<0.50	**0.70**	**4.3**	<0.50	<2.0	<2.0	<0.50	**0.88**	**49**	<0.50	NA
RW-4A	9/15/2011	<1.0	**2.0**	<0.5	**2.2**	**30**	**0.6**	<2.0	<2.0	**5.1**	**2.4**	**75**	**2.3**	NA
RW-4A	9/24/2012	<1.0	**1.7**	<0.50	**1.7**	**17**	**0.56**	<0.50	<5.0	**4.5**	**2.0**	**64**	**0.84**	NA
RW-4A	10/16/2013	<1.0	**1.4**	<0.50	**1.6**	**16**	<0.50	<0.50	<5.0	**4.2**	**1.8**	**64**	<0.50	NA
RW-4A	9/30/2014	<0.50	**4.1**	<0.50	**3.4**	**56**	**0.74**	<2.0	<2.0	**8.8**	**3.4**	**77**	**1.2**	NA
RW-5A	9/9/2011	<20	**23**	<10	**20**	**850**	**70**	<40	<40	**56**	**11**	**1000**	**15**	NA
RW-5A	9/24/2012	<1.0	**26**	<0.50	**17**	**800**	**66**	**1.9**	<5.0	**60**	**11**	**1200**	**16**	NA
RW-5A	10/16/2013	<1.0	**27**	<0.50	**20**	**770**	**82**	**2.0**	<5.0	**75**	**11**	**1000**	**17**	NA
RW-5A	9/30/2014	<10	**28**	<10	**20**	**1000**	**77**	<40	<40	**76**	**11**	**1400**	**14**	NA
RW-7A	9/15/2011	<5.0	**17**	<2.5	**14**	**680**	**18**	<10	<10	**6.3**	**3.8**	**630**	<2.5	NA
RW-7A	9/21/2012	<1.0	**16**	<0.50	**15**	**860**	**17**	**5.2**	<5.0	**8.1**	**3.3**	**740**	**2.5**	NA
RW-7A	10/16/2013	<1.0	**15**	<0.50	**15**	**690**	**16**	**5.8**	<5.0	**8.6**	**3.0**	**600**	**3.5**	NA
RW-7A	9/29/2014	<0.50	**14**	<0.50	**13**	**730**	**18**	**4.6**	<2.0	**8.0**	**2.2**	**660**	**3.3**	NA
RW-9A (RGRP)	10/6/2011	<5.0	**3.2**	<2.5	<2.5	**340**	**4.7**	<10	<10	<2.5	<2.5	**340**	<2.5	NA
RW-9A (RGRP)	9/18/2012	<1.0	**3.3**	<0.50	**3.4**	**370**	**4.6**	**2.9**	<5.0	**0.66**	**1.0**	**490**	<0.50	NA
RW-9A (RGRP)	10/29/2013	<1.0	**3.9**	<0.50	**4.8**	**380**	**4.8**	**4.6**	<5.0	**0.79**	**1.4**	**450**	**1.3**	NA
RW-9A (RGRP) D	10/29/2013	<1.0	**3.7**	<0.50	**4.5**	**380**	**4.5**	**4.4**	<5.0	**0.79**	**1.4**	**470**	**1.3**	NA
RW-9A (RGRP)	9/25/2014	<5.0	<5.0	<5.0	<5.0	**170**	<5.0	<20	<20	<5.0	<5.0	**380**	<5.0	NA
RW-16A	10/14/2011	<4.0	**5.4**	<2.0	**5.4**	**190**	<2.0	<8.0	<8.0	<2.0	**2.3**	**290**	**3.0**	NA
RW-16A	9/24/2012	<1.0	**5.6**	<0.50	**7.6**	**220**	**1.9**	**5.6**	<5.0	<0.50	**1.8**	**270**	<0.50	NA
RW-16A	10/24/2013	<1.0	**6.4**	<0.50	**10**	**300**	**1.7**	**6.2**	<5.0	**0.53**	**2.0**	**270**	**0.72**	NA
RW-16A	10/1/2014	<2.5	**5.1**	<2.5	**8.0**	**280**	**3.3**	<10	<10	<2.5	<2.5	**250**	<2.5	NA
RW-16A D	10/1/2014	<2.5	**5.6**	<2.5	**7.8**	**280**	**3.5**	<10	<10	<2.5	<2.5	**250**	<2.5	NA
RW-18A	9/15/2011	<5.0	**10**	<2.5	**9.4**	**480**	**8.6**	<10	<10	<2.5	<2.5	**410**	<2.5	NA
RW-18A	9/25/2012	<1.0	**8.9**	<0.50	**9.5**	**590**	**9.3**	**3.3**	<5.0	**0.95**	**0.94**	**480**	**2.8**	NA
RW-18A	10/17/2013	<10	**7.5**	<5.0	**11**	**910**	**12**	**5.0**	<50	<5.0	<5.0	**630**	**5.1**	NA
RW-18A	9/30/2014	<0.50	**7.9**	<0.50	**11**	**950**	**15**	**5.2**	<2.0	**0.97**	**0.85**	**590**	**5.2**	NA
RW-27A	10/4/2011	<17	**20**	<8.3	**15**	**530**	**20**	<33	<33	<8.3	<8.3	**790**	<8.3	NA
RW-27A	9/21/2012	<1.0	**20**	<0.50	**16**	**730**	**20**	**5.1**	<5.0	**4.7**	**4.0**	**1100**	**3.5**	NA
RW-27A	10/16/2013	<1.0	**21**	<0.50	**19**	**840**	**18**	**5.1**	<5.0	**4.4**	**3.1**	**930**	**6.8**	NA
RW-27A	9/29/2014	<0.50	**18**	<0.50	**15**	**830**	**18**	**4.7**	<2.0	**4.6**	**2.4**	**860**	**5.1**	NA

Table 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
A Zone														
RW-28A	10/14/2011	<6.3	**7.4**	<3.1	**11**	**460**	**12**	<13	<13	<3.1	<3.1	**420**	**4.9**	NA
RW-28A	10/3/2012	<1.0	**9.4**	<0.50	**12**	**700**	**17**	**2.0**	<5.0	**3.2**	**0.99**	**380**	**4.1**	NA
RW-28A	10/29/2013	<1.0	**8.4**	<0.50	**12**	**540**	**20**	**2.4**	<5.0	**2.3**	**0.56**	**280**	**4.6**	NA
RW-28A	9/30/2014	<2.5	**6.5**	<2.5	**8.5**	**540**	**16**	<10	<10	<2.5	<2.5	**240**	<2.5	NA
B1 Zone														
2B1	10/3/2011	<6.3	**3.5**	<3.1	**4.2**	**89**	<3.1	<13	<13	<3.1	<3.1	**350**	<3.1	NA
2B1	10/23/2012	<1.0	**2.5**	<0.50	**2.6**	**70**	**0.51**	**1.7**	<5.0	<0.50	**0.57**	**300**	<0.50	NA
2B1	9/26/2013	<1.0	**3.1**	<0.50	**4.5**	**84**	**1.4**	**2.6**	<5.0	<0.50	**0.79**	**440**	<0.50	NA
2B1	9/29/2014	<0.50	**3.1**	<0.50	**4.0**	**95**	**1.2**	**2.5**	<2.0	<0.50	**0.80**	**400**	<0.50	NA
60B1 D	9/16/2011	<5.0	**4.3**	<2.5	**10**	**460**	**6.1**	**31**	<10	<2.5	<2.5	**2800**	<2.5	NA
60B1	9/16/2011	<40	<20	<20	<20	**350**	<20	<80	<80	<20	<20	**2500**	<20	NA
60B1	10/18/2012	**1.3**	**0.55**	<0.50	**1.5**	**61**	<0.50	**0.76**	<5.0	<0.50	<0.50	**450**	<0.50	**3.5**
60B1	10/21/2013	<1.0	**1.1**	<0.50	**4.0**	**210**	**1.3**	**12**	<5.0	**0.75**	<0.50	**1400**	<0.50	NA
60B1	9/19/2014	<1.0	**3.0**	<0.50	**8.8**	**590**	**3.0**	**23**	<5.0	**1.6**	<0.50	**2100**	**0.61**	NA
115B1 D	9/16/2011	<100	<50	<50	**71**	**550**	<50	<200	<200	<50	<50	**9100**	<50	NA
115B1	9/16/2011	<130	<63	<63	**71**	**560**	<63	<250	<250	<63	<63	**9100**	<63	NA
115B1	10/23/2012	<1.0	**15**	<0.50	**51**	**1100**	**4.3**	**110**	<5.0	**2.6**	<0.50	**6300**	**2.8**	NA
115B1	10/25/2013	<1.0	**16**	<0.50	**47**	**810**	**2.9**	**110**	<5.0	**1.7**	<0.50	**5100**	**1.8**	NA
115B1	9/26/2014	<50	<50	<50	**56**	**950**	<50	<200	<200	<50	<50	**7100**	<50	NA
119B1 (RGRP)	10/6/2011	<8.3	<4.2	<4.2	<4.2	**59**	<4.2	<17	<17	<4.2	<4.2	**390**	<4.2	NA
119B1 (RGRP)	9/18/2012	<1.0	**2.1**	<0.50	**2.6**	**71**	**1.3**	**3.6**	<5.0	<0.50	**1.5**	**520**	<0.50	NA
119B1 (RGRP)	10/23/2013	<1.0	**2.2**	<0.50	**3.3**	**86**	**1.0**	**4.3**	<5.0	<0.50	**1.5**	**640**	<0.50	NA
119B1 (RGRP)	9/25/2014	<5.0	<5.0	<5.0	<5.0	**69**	<5.0	<20	<20	<5.0	<5.0	**630**	<5.0	NA
147B1	9/21/2011	<25	<13	<13	<13	**120**	<13	<50	<50	<13	<13	**1200**	<13	NA
147B1	10/25/2012	<1.0	**1.8**	<0.50	**3.6**	**110**	**2.9**	**3.7**	<5.0	**0.77**	**1.3**	**1000**	<0.50	NA
147B1	10/21/2013	<1.0	**1.4**	<0.50	**3.9**	**210**	**3.0**	**4.2**	<5.0	**1.3**	**1.0**	**860**	<0.50	NA
147B1	9/19/2014	<1.0	**0.54**	<0.50	**1.1**	**50**	**0.95**	**1.0**	<5.0	**0.62**	<0.50	**400**	<0.50	NA
RW-3(B1)	10/11/2011	<0.90	<0.90	<0.90	**1.3**	**14**	<0.90	**9.4**	<5.0	<0.90	**3.2**	**250**	<0.90	NA
RW-3(B1)	9/24/2012	<1.0	**0.83**	<0.50	**0.85**	**18**	**1.3**	**7.9**	<5.0	<0.50	**3.0**	**300**	<0.50	NA
RW-3(B1)	10/24/2013	<1.0	**0.51**	<0.50	**1.6**	**15**	<0.50	**5.8**	<5.0	<0.50	**1.8**	**290**	<0.50	NA
RW-3(B1)	9/30/2014	<2.5	<2.5	<2.5	<2.5	**18**	<2.5	<10	<10	<2.5	<2.5	**270**	<2.5	NA

Table 16a

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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	1,4-Dioxane[1]
B1 Zone														
RW-4(B1)	9/15/2011	<10	<5.0	<5.0	<5.0	**270**	**90**	<20	<20	<5.0	<5.0	**1500**	<5.0	NA
RW-4(B1)	9/24/2012	<1.0	**2.0**	<0.50	**3.9**	**250**	**56**	**6.2**	<5.0	<0.50	**2.6**	**1500**	<0.50	NA
RW-4(B1)	10/16/2013	<10	<5.0	<5.0	<5.0	**160**	**21**	**5.9**	<50	<5.0	<5.0	**1300**	<5.0	NA
RW-4(B1)	9/29/2014	<0.50	**1.7**	<0.50	**3.1**	**240**	**72**	**5.8**	<2.0	<0.50	**2.0**	**1300**	<0.50	NA
RW-4(B1) D	9/29/2014	<0.50	**1.7**	<0.50	**3.2**	**240**	**73**	**5.7**	<2.0	<0.50	**1.8**	**1400**	<0.50	NA
RW-5(B1)	9/9/2011	<25	<13	<13	<13	**1300**	**140**	<50	<50	<13	<13	**1600**	<13	NA
RW-5(B1)	9/21/2012	<1.0	**7.8**	<0.50	**9.3**	**1500**	**120**	**2.9**	<5.0	**3.3**	**1.2**	**1300**	**2.2**	NA
RW-5(B1)	10/17/2013	<1.0	**6.4**	<0.50	**7.9**	**1400**	**94**	**2.4**	<5.0	**3.0**	**0.99**	**2000**	**2.0**	NA
RW-5(B1)	9/29/2014	<0.50	**7.6**	<0.50	**9.4**	**1200**	**110**	**2.5**	<2.0	**3.5**	**0.98**	**1500**	**2.9**	NA
RW-7(B1)	9/15/2011	<25	<13	<13	<13	**210**	<13	<50	<50	<13	<13	**2400**	<13	NA
RW-7(B1)	9/21/2012	<1.0	**4.6**	<0.50	**9.5**	**260**	**5.1**	**17**	<5.0	**3.2**	**1.5**	**3100**	**0.62**	NA
RW-7(B1)	10/16/2013	<1.0	**4.8**	<0.50	**11**	**280**	**5.3**	**18**	<5.0	**3.3**	**1.4**	**2400**	**0.88**	NA
RW-7(B1)	9/29/2014	<0.50	**4.7**	<0.50	**10**	**320**	**6.6**	**16**	<2.0	**3.5**	**1.1**	**2600**	<0.50	NA
RW-9(B1)R (RGRP)	10/6/2011	<3.3	**2.8**	<1.7	**7.6**	**650**	**3.0**	**20**	<6.7	<1.7	<1.7	**1700**	<1.7	NA
RW-9(B1)R (RGRP)	9/18/2012	<1.0	**3.9**	<0.50	**13**	**970**	**5.4**	**29**	<5.0	**1.4**	<0.50	**3000**	**0.58**	NA
RW-9(B1)R (RGRP)	10/29/2013	<1.0	**4.2**	<0.50	**16**	**810**	**5.8**	**33**	<5.0	**1.5**	<0.50	**2500**	**0.70**	NA
RW-9(B1)R (RGRP)	9/26/2014	<10	<10	<10	**11**	**730**	<10	<40	<40	<10	<10	**2200**	<10	NA
RW-12(B1)	9/15/2011	<6.3	**4.5**	<3.1	**4.7**	**120**	**6.9**	<13	<13	<3.1	<3.1	**570**	<3.1	NA
RW-12(B1)	9/21/2012	<1.0	**4.2**	<0.50	**5.3**	**150**	**8.1**	**5.1**	<5.0	**0.53**	**1.0**	**710**	**0.53**	NA
RW-12(B1)	10/16/2013	<1.0	**3.5**	<0.50	**5.1**	**120**	**5.9**	**5.6**	<5.0	**0.60**	**1.0**	**690**	<0.50	NA
RW-12(B1)	9/30/2014	<5.0	<5.0	<5.0	<5.0	**130**	**6.3**	<20	<20	<5.0	<5.0	**520**	<5.0	NA
B2 Zone														
10B2	9/22/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	**0.6**	<0.5	NA
10B2	10/18/2012	<1.0	<0.50	<0.50	<0.50	**1.7**	<0.50	<0.50	<5.0	<0.50	<0.50	**59**	<0.50	<1.0
10B2	10/29/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
10B2 D	10/29/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
10B2	9/29/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	NA
10B2 D	9/29/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	NA
11B2	9/21/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	NA
11B2	9/7/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
11B2	10/21/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA

Table 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
B2 Zone														
11B2	9/26/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	NA
113B2 (RGRP)	9/22/2011	<4.0	<2.0	<2.0	<2.0	**13**	<2.0	<8.0	<8.0	<2.0	<2.0	**220**	<2.0	NA
113B2 (RGRP)	9/21/2012	<1.0	<0.50	<0.50	**0.85**	**10**	<0.50	**1.6**	<5.0	<0.50	<0.50	**200**	<0.50	NA
113B2 (RGRP)	10/22/2013	<1.0	<0.50	<0.50	**1.7**	**48**	<0.50	**3.6**	<5.0	<0.50	<0.50	**680**	<0.50	NA
113B2 (RGRP)	9/24/2014	<5.0	<5.0	<5.0	**8.1**	**400**	<5.0	<20	<20	<5.0	<5.0	**1700**	<5.0	NA
118B2	9/29/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	**0.7**	<0.5	NA
118B2	9/19/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
118B2	9/26/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	**3.0**	<0.50	NA
118B2	9/29/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	NA
148B2	9/21/2011	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	NA
148B2	9/7/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
148B2	10/21/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
148B2	9/19/2014	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-3(B2)	10/11/2011	<4.0	<4.0	<4.0	**8.0**	**90**	**8.8**	<4.0	<5.0	<4.0	<4.0	**970**	<4.0	NA
RW-3(B2)	9/24/2012	<1.0	<0.50	<0.50	**9.1**	**87**	**10**	<0.50	<5.0	<0.50	<0.50	**1400**	**1.3**	NA
RW-3(B2)	10/24/2013	<1.0	<0.50	<0.50	**6.1**	**69**	**7.9**	<0.50	<5.0	<0.50	<0.50	**770**	**1.3**	NA
RW-3(B2)	9/30/2014	<5.0	<5.0	<5.0	**7.5**	**410**	**9.3**	<20	<20	<5.0	<5.0	**480**	<5.0	NA
RW-4(B2)	10/4/2011	<170	<83	<83	<83	**5100**	<83	<330	<330	<83	<83	**9200**	<83	NA
RW-4(B2)	9/24/2012	<1.0	**3.1**	<0.50	**39**	**6900**	**75**	**0.51**	<5.0	<0.50	<0.50	**9300**	**21**	NA
RW-4(B2)	10/16/2013	<10	<5.0	<5.0	**41**	**8200**	**89**	<5.0	<50	<5.0	<5.0	**11000**	**32**	NA
RW-4(B2)	9/29/2014	<0.50	**3.4**	<0.50	**50**	**7000**	**120**	<2.0	<2.0	<0.50	<0.50	**10000**	**36**	NA
RW-5(B2)	10/14/2011	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-5(B2) D	9/24/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-5(B2)	9/24/2012	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-5(B2) D	10/17/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-5(B2)	10/17/2013	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	NA
RW-5(B2)	9/30/2014	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50	NA
RW-7(B2)	10/14/2011	<0.50	<0.50	<0.50	<0.50	**5.2**	<0.50	**0.57**	<5.0	<0.50	<0.50	**8.6**	<0.50	NA
RW-7(B2)	9/24/2012	<1.0	<0.50	<0.50	<0.50	**1.8**	<0.50	**0.52**	<5.0	<0.50	<0.50	**9.4**	<0.50	NA
RW-7(B2)	10/8/2013	<1.0	<0.50	<0.50	<0.50	**3.5**	<0.50	<0.50	<5.0	<0.50	<0.50	**6.3**	<0.50	NA
RW-7(B2)	9/30/2014	<0.50	<0.50	<0.50	<0.50	**15**	<0.50	<2.0	<2.0	<0.50	<0.50	**2.2**	<0.50	NA

Table 16a

VOC Analytical Results

Buildings 1-4 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
B2 Zone														
RW-7(B2) D	9/30/2014	<0.50	<0.50	<0.50	<0.50	**15**	<0.50	<2.0	<2.0	<0.50	<0.50	**2.2**	<0.50	NA
RW-9(B2) (RGRP)	10/6/2011	<10	<5.0	<5.0	**6.6**	**200**	<5.0	<20	<20	<5.0	<5.0	**550**	**8.5**	NA
RW-9(B2) (RGRP)	9/18/2012	<1.0	**0.51**	<0.50	**6.0**	**250**	**4.9**	**5.6**	<5.0	<0.50	<0.50	**720**	<0.50	NA
RW-9(B2) (RGRP)	10/29/2013	<1.0	**0.57**	<0.50	**7.3**	**230**	**5.3**	**6.6**	<5.0	<0.50	<0.50	**630**	**0.79**	NA
RW-9(B2) (RGRP)	9/26/2014	<5.0	<5.0	<5.0	<5.0	**190**	<5.0	<20	<20	<5.0	<5.0	**570**	<5.0	NA

Notes:
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-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
µg/L = micrograms per Liter
(RGRP) = Regional Groundwater Remediation Program Well associated with the Fairchild Operation and Maintenance Program (RMT, 2003)
(1) 1,4-dioxane analyzed by method 8270C SIM
< indicates analyte not detected above the reported detection limit
D indicates duplicate sample
NA indicates the sample was not analyzed for the given analyte

Table 16b
VOC Analytical Results
Building 9 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
A Zone														
31A[2]	2/12/2015	<20	**5.7**	<10	**8.5**	**400**	**5.3**	**16**	<100	**140**	<10	**420**	<10	--
31A[2]	3/31/2015	<20	**5.1**	<10	**6.7**	**410**	**10**	**13**	<100	**100**	<10	**250**	**6.5**	--
31A[2]	4/29/2015	<20	**5.9**	<10	**8.6**	**500**	**7.0**	**16**	<100	**110**	<10	**320**	**7.1**	--
31A[2]	5/26/2015	<20	**4.7**	<10	**7.5**	**530**	**4.8**	**13**	<100	**76**	<10	**260**	**8.3**	--
31A[2]	7/1/2015	<10	**5.3**	<5.0	**8.8**	**480**	**5.9**	**16**	<50	**110**	**2.6**	**310**	**8.9**	--
31A[2]	7/28/2015	<10	**4.5**	<5.0	**7.1**	**460**	**4.0**	**15**	<50	**130**	**2.4**	**350**	**5.5**	--
31A[2]	8/25/2015	<10	**4.1**	<5.0	**6.8**	**490**	**4.1**	**12**	<50	**100**	**2.6**	**310**	**6.5**	--
31A D[2]	8/25/2015	<10	**4.4**	<5.0	**6.7**	**490**	**4.3**	**13**	<50	**100**	**2.5**	**310**	**6.7**	--
31A[2]	9/30/2015	<5.0	**4.2**	<2.5	**6.2**	**370**	**3.9**	**12**	<25	**84**	**2.3**	**260**	**5.1**	--
31A D[2]	9/30/2015	<20	**5.6**	<10	**6.2**	**490**	**3.7**	**13**	<100	**88**	<10	**310**	<10	--
31A[2]	10/27/2015	<5.0	**5.1**	<2.5	**7.8**	**430**	**5.1**	**15**	<25	**110**	**2.6**	**320**	**5.7**	--
31A D[2]	10/27/2015	<20	**5.1**	<10	**8.0**	**450**	**4.2**	**14**	<100	**130**	<10	**350**	<10	--
31A D[2]	11/18/2015	<20	**4.7**	<10	**7.4**	**390**	**3.9**	**11**	<100	**120**	<10	**350**	<10	--
31A[2]	11/18/2015	<5.0	**4.6**	<2.5	**6.2**	**430**	**4.2**	**12**	<25	**71**	**2.2**	**270**	**4.9**	--
31A D[2]	12/29/2015	<10	**5.5**	<5.0	**8.7**	**550**	**5.1**	**17**	<50	**150**	**2.7**	**390**	**4.8**	--
31A[2]	12/29/2015	<10	**5.5**	<5.0	**8.7**	**550**	**5.3**	**15**	<50	**160**	**3.0**	**400**	**5.0**	--
35A	9/25/2012	<1.0	**3.6**	<0.50	**2.5**	**130**	**1.7**	**2.1**	<5.0	<0.50	<0.50	**220**	**1.1**	--
36A	9/18/2012	<1.0	**3.3**	<0.50	**2.7**	**270**	**2.1**	**0.64**	<5.0	<0.50	<0.50	**110**	**0.70**	--
37A	9/29/2011	<4.0	**5.7**	<2.0	**2.3**	**88**	**5.5**	<8.0	<8.0	<2.0	**18**	**210**	<2.0	--
37A	9/18/2012	<1.0	**10**	<0.50	**6.3**	**120**	**1.4**	**1.5**	<5.0	<0.50	**17**	**190**	<0.50	--
37A	10/23/2013	<1.0	**36**	<0.50	**8.6**	**370**	**3.7**	**1.1**	<5.0	<0.50	**7.6**	**72**	**49**	--
37A	9/17/2014	<1.0	**35**	<0.50	**8.1**	**280**	**5.1**	**1.4**	<5.0	<0.50	**9.0**	**44**	**15**	--
37A	2/11/2015	<10	**15**	<5.0	**4.8**	**120**	<5.0	**1.8**	<50	<5.0	**11**	**200**	**3.7**	--
37A	3/17/2015	<10	**61**	<5.0	**3.6**	**180**	**6.5**	**4.7**	<50	<5.0	**100**	**260**	**6.7**	--
37A	5/13/2015	<20	**71**	<10	**10**	**100**	**8.7**	**8.6**	<100	<10	**190**	**360**	<10	--
37A D	5/13/2015	<10	**73**	<5.0	**7.4**	**100**	**5.9**	**9.0**	<50	<5.0	**200**	**360**	**3.3**	--
37A	8/25/2015	<5.0	**130**	<2.5	**9.7**	**270**	**5.6**	**8.0**	<25	<2.5	**250**	**330**	**18**	--
39A[2]	2/12/2015	<100	**11**	<50	**25**	**8600**	**75**	**27**	<500	<50	<50	**15000**	**220**	--
39A[2]	3/3/2015	<100	<50	<50	**20**	**8500**	**250**	**41**	<500	<50	<50	**20000**	**170**	--

Table 16b
VOC Analytical Results
Building 9 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
A Zone														
39A[2]	3/6/2015	<200	<100	<100	<100	**5400**	**110**	**33**	**300**	<100	<100	**13000**	**85**	--
39A D[2]	3/31/2015	<100	<50	<50	**30**	**7800**	**120**	**45**	<500	<50	<50	**17000**	**200**	--
39A[2]	3/31/2015	<10	**14**	<5.0	**29**	**7000**	**120**	**47**	<50	**2.6**	**5.1**	**15000**	**200**	--
39A[2]	4/29/2015	<500	<250	<250	<250	**14000**	**230**	**56**	<2500	<250	<250	**28000**	**360**	--
39A[2]	5/26/2015	<200	**22**	<100	**60**	**23000**	**220**	**67**	<1000	<100	<100	**48000**	**540**	--
39A[2]	7/2/2015	<500	<250	<250	<250	**20000**	**180**	**52**	<2500	<250	<250	**32000**	**970**	--
39A[2]	7/28/2015	<500	<250	<250	<250	**23000**	**170**	<250	<2500	<250	<250	**20000**	**1400**	--
39A[2]	8/25/2015	<10	**21**	<5.0	**52**	**23000**	**180**	**66**	<50	<5.0	<5.0	**27000**	**970**	--
39A[2]	9/29/2015	<50	**19**	<25	**41**	**19000**	**130**	**81**	<250	<25	<25	**13000**	**880**	--
39A[2]	10/27/2015	<500	<250	<250	<250	**17000**	**140**	**90**	<2500	<250	<250	**11000**	**1100**	--
39A[2]	11/19/2015	<500	<250	<250	<250	**16000**	**160**	**77**	<2500	<250	<250	**10000**	**880**	--
39A[2]	12/29/2015	<500	<250	<250	<250	**21000**	**190**	**99**	<2500	<250	<250	**17000**	**910**	--
40A	10/3/2011	<10	**5.8**	<5.0	**6.5**	**420**	**10**	<20	<20	<5.0	**7.1**	**700**	**7.1**	--
40A	9/18/2012	<1.0	**4.6**	<0.50	**5.6**	**230**	**1.7**	**13**	<5.0	**0.65**	**5.1**	**540**	**1.4**	--
40A	10/23/2013	<1.0	**3.6**	<0.50	**4.8**	**180**	**2.0**	**10**	<5.0	**1.2**	**3.8**	**560**	**1.6**	--
40A	9/17/2014	<1.0	**4.5**	<0.50	**6.7**	**190**	**2.5**	**18**	<5.0	**0.91**	**7.6**	**730**	**1.1**	--
41A	9/29/2011	<14	<7.1	<7.1	<7.1	**130**	<7.1	<29	<29	<7.1	<7.1	**760**	<7.1	--
41A	9/25/2012	<1.0	**6.1**	<0.50	**7.8**	**400**	**5.8**	**14**	<5.0	<0.50	**6.0**	**1500**	**9.6**	--
41A	10/23/2013	<10	<5.0	<5.0	<5.0	**220**	<5.0	**7.0**	<50	<5.0	<5.0	**580**	<5.0	--
41A	9/17/2014	<1.0	<0.50	<0.50	**0.93**	**59**	**1.8**	**3.1**	<5.0	<0.50	**0.87**	**360**	<0.50	--
41A	2/11/2015	<20	<10	<10	<10	**65**	<10	<10	<100	<10	<10	**460**	<10	--
41A	3/3/2015	<10	**2.2**	<5.0	<5.0	**320**	**12**	**4.4**	<50	<5.0	<5.0	**1200**	<5.0	--
41A	3/6/2015	<10	**3.2**	<5.0	<5.0	**360**	**21**	**5.8**	<50	<5.0	**2.4**	**1300**	<5.0	--
41A	3/31/2015	<50	<25	<25	<25	**300**	**30**	**4.6**	<250	<25	<25	**1400**	<25	--
41A D	4/29/2015	<50	<25	<25	<25	**330**	**36**	**5.2**	<250	<25	<25	**1400**	<25	--
41A	4/29/2015	<50	<25	<25	<25	**330**	**32**	**6.9**	<250	<25	<25	**1300**	<25	--
41A	5/26/2015	<20	<10	<10	<10	**310**	**16**	**5.5**	<100	<10	<10	**1100**	<10	--
41A D	5/26/2015	<50	<25	<25	<25	**290**	**17**	<25	<250	<25	<25	**1100**	<25	--
41A	6/30/2015	<20	<10	<10	<10	**260**	**16**	**6.6**	<100	<10	<10	**880**	<10	--
41A D	6/30/2015	<20	<10	<10	<10	**260**	**15**	**7.0**	<100	<10	<10	**880**	<10	--

Table 16b
VOC Analytical Results
Building 9 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
A Zone														
41A	7/29/2015	<20	<10	<10	<10	**240**	**12**	**6.9**	<100	<10	<10	**700**	<10	--
41A D	7/29/2015	<20	<10	<10	<10	**230**	**9.9**	**7.9**	<100	<10	<10	**870**	<10	--
41A	8/26/2015	<50	<25	<25	<25	**290**	**13**	**6.2**	<250	<25	<25	**720**	<25	--
41A	9/29/2015	<20	<10	<10	<10	**380**	**13**	**8.1**	<100	<10	<10	**1000**	<10	--
41A	10/28/2015	<20	<10	<10	<10	**400**	**15**	**7.2**	**52**	<10	<10	**1100**	<10	--
41A	11/18/2015	<20	<10	<10	<10	**360**	**11**	**4.4**	<100	<10	<10	**890**	<10	--
41A	12/30/2015	<10	<5.0	<5.0	<5.0	**370**	**13**	**8.6**	<50	<5.0	<5.0	**750**	<5.0	--
42A	9/22/2011	<3.3	**2.8**	<1.7	**3.0**	**65**	<1.7	**8.1**	<6.7	<1.7	**2.9**	**350**	<1.7	--
42A	10/19/2012	<1.0	**2.3**	<0.50	**3.3**	**200**	**2.5**	**6.0**	<5.0	**1.1**	**2.4**	**570**	<0.50	<1.0
42A	10/23/2013	<1.0	**1.4**	<0.50	**2.2**	**87**	**1.4**	**6.8**	<5.0	**1.9**	**1.8**	**480**	**1.1**	--
42A D	10/23/2013	<1.0	**1.4**	<0.50	**2.1**	**85**	**1.3**	**6.5**	<5.0	**1.7**	**1.7**	**470**	**1.0**	--
42A	9/17/2014	<1.0	**1.0**	<0.50	**1.6**	**57**	**1.6**	**4.4**	<5.0	**1.9**	**1.7**	**400**	**0.83**	--
42A D	9/17/2014	<1.0	**0.96**	<0.50	**1.6**	**81**	**2.1**	**4.5**	<5.0	**2.0**	**1.8**	**390**	**0.80**	--
43A	9/29/2011	<5.0	**2.9**	<2.5	**2.7**	**78**	<2.5	<10	<10	<2.5	**2.9**	**310**	<2.5	--
43A	9/26/2012	<1.0	**1.7**	<0.50	**2.5**	**160**	**1.4**	**3.6**	<5.0	**1.2**	**1.7**	**450**	**2.2**	--
43A	10/23/2013	**1.1**	**1.3**	<0.50	**1.8**	**96**	**1.2**	**3.5**	<5.0	**1.5**	**1.4**	**420**	**1.5**	--
43A	9/17/2014	<1.0	<0.50	<0.50	**0.61**	**28**	<0.50	**1.5**	<5.0	**1.0**	**0.87**	**310**	**0.67**	--
43A	2/11/2015	<10	<5.0	<5.0	<5.0	**67**	<5.0	**1.7**	<50	<5.0	<5.0	**360**	**2.2**	--
43A	3/31/2015	<20	<10	<10	<10	**75**	<10	**3.9**	<100	<10	<10	**420**	<10	--
43A	4/29/2015	<20	<10	<10	<10	**91**	<10	**2.8**	<100	<10	<10	**470**	<10	--
43A	5/26/2015	<10	<5.0	<5.0	**4.3**	**74**	**2.7**	**3.5**	<50	<5.0	<5.0	**370**	**2.1**	--
43A	7/1/2015	<20	<10	<10	<10	**130**	**2.9**	**2.1**	<100	<10	<10	**370**	**7.3**	--
43A	7/29/2015	<10	<5.0	<5.0	<5.0	**120**	**1.6**	**2.0**	<50	<5.0	<5.0	**410**	**4.4**	--
43A	8/25/2015	<10	<5.0	<5.0	<5.0	**200**	**2.1**	<5.0	<50	<5.0	<5.0	**440**	**7.9**	--
43A	9/30/2015	<2.0	**0.80**	<1.0	**2.1**	**170**	**2.0**	**2.4**	<10	**1.1**	**1.0**	**330**	**8.7**	--
43A	11/2/2015	<2.0	**0.72**	<1.0	**1.8**	**150**	**1.9**	**2.2**	<10	**1.0**	**0.92**	**370**	**7.7**	--
43A	11/18/2015	<5.0	**0.76**	<2.5	**2.0**	**170**	**1.9**	**2.1**	<25	**1.1**	<2.5	**330**	**12**	--
43A	12/30/2015	<10	**1.6**	<5.0	**3.3**	**260**	**2.8**	**7.6**	<50	<5.0	**2.1**	**430**	**14**	--
44A	9/29/2011	<13	<6.3	<6.3	<6.3	**200**	<6.3	<25	<25	<6.3	<6.3	**580**	<6.3	--
44A	9/24/2012	<1.0	**0.86**	<0.50	**1.4**	**89**	**2.1**	**2.1**	<5.0	**1.7**	**0.97**	**460**	<0.50	--

Table 16b
VOC Analytical Results
Building 9 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
A Zone														
44A	10/23/2013	<1.0	**0.70**	<0.50	**1.2**	**51**	**0.79**	**2.4**	<5.0	**1.8**	**1.0**	**330**	<0.50	--
44A	9/17/2014	<1.0	<0.50	<0.50	**0.61**	**24**	<0.50	**1.3**	<5.0	**1.4**	**0.87**	**240**	<0.50	--
122A	9/26/2012	<1.0	**3.0**	<0.50	**2.1**	**100**	**1.6**	**1.0**	<5.0	<0.50	<0.50	**210**	<0.50	--
122A D	9/26/2012	<1.0	**3.0**	<0.50	**2.1**	**100**	**1.6**	**0.97**	<5.0	<0.50	<0.50	**230**	<0.50	--
123A	10/23/2013	<10	<5.0	<5.0	<5.0	**260**	<5.0	**6.2**	<50	<5.0	<5.0	**510**	<5.0	--
123A	9/17/2014	<1.0	**7.7**	<0.50	**9.4**	**360**	**7.4**	**17**	<5.0	**1.8**	**3.8**	**590**	**1.7**	--
137A	10/3/2011	<200	<100	<100	<100	**10000**	**110**	<400	<400	<100	<100	**6900**	<100	--
137A	10/25/2012	<1.0	**3.0**	<0.50	**7.7**	**2000**	**13**	**19**	<5.0	**1.2**	<0.50	**3500**	**3.3**	--
137A	8/28/2013	<1.0	**5.0**	<0.50	**13**	**3000**	**25**	**16**	<5.0	**1.2**	<0.50	**3300**	**2.4**	--
137A	10/23/2013	<10	<5.0	<5.0	**11**	**4300**	**41**	**16**	<50	<5.0	<5.0	**6400**	<5.0	--
137A	9/17/2014	<1.0	**7.5**	<0.50	**22**	**5500**	**48**	**14**	<5.0	**1.2**	<0.50	**2300**	**2.7**	--
137A	2/12/2015	<100	<50	<50	**38**	**11000**	**85**	**16**	<500	<50	<50	**4000**	**57**	--
137A	3/18/2015	<100	<50	<50	**34**	**9200**	**72**	<50	<500	<50	<50	**2200**	**100**	--
137A	5/13/2015	<20	**11**	<10	**35**	**10000**	**95**	**13**	<100	<10	<10	**3200**	**91**	--
137A	8/26/2015	<20	**15**	<10	**47**	**14000**	**100**	**16**	<100	<10	<10	**5300**	**120**	--
137A	12/29/2015	<500	<250	<250	<250	**15000**	**120**	<250	<2500	<250	<250	**6700**	**120**	--
138A	9/29/2011	<20	<10	<10	**10**	**1200**	**13**	<40	<40	<10	<10	**190**	**32**	--
138A	9/18/2012	<1.0	**7.9**	<0.50	**10**	**1900**	**12**	**10**	<5.0	<0.50	**1.0**	**170**	**27**	--
138A	10/23/2013	<1.0	**3.2**	<0.50	**3.6**	**920**	**6.4**	<50	<5.0	<0.50	<0.50	**340**	**16**	--
138A	9/17/2014	<1.0	**3.4**	<0.50	**4.5**	**1700**	**9.2**	**3.6**	<5.0	<0.50	<0.50	**360**	**50**	--
138A	2/12/2015	<100	<50	<50	<50	**2400**	**20**	**15**	<500	<50	<50	**78**	**110**	--
138A	3/31/2015	<50	**7.0**	<25	**10**	**1900**	**11**	**8.8**	<250	<25	<25	**47**	**65**	--
138A D	3/31/2015	<100	<50	<50	<50	**1800**	**19**	**11**	<500	<50	<50	**59**	**77**	--
138A	4/29/2015	<50	**10**	<25	**14**	**2100**	**19**	**15**	<250	<25	<25	**50**	**89**	--
138A	5/26/2015	<50	**8.1**	<25	**13**	**2300**	**16**	**11**	<250	<25	<25	**68**	**82**	--
138A	7/1/2015	<100	<50	<50	**27**	**2000**	**25**	<50	<500	<50	<50	**61**	**86**	--
138A	7/29/2015	<100	<50	<50	<50	**1800**	<50	<50	<500	<50	<50	**43**	**55**	--
138A	8/25/2015	<20	**9.1**	<10	**14**	**1900**	**13**	**11**	<100	<10	<10	**39**	**68**	--
138A	9/30/2015	<50	**11**	<25	**13**	**2200**	**11**	<25	<250	<25	<25	**51**	**65**	--

Table 16b
VOC Analytical Results
Building 9 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
A Zone														
138A	10/27/2015	<50	<25	<25	**16**	**2000**	**13**	**13**	<250	<25	<25	**67**	**94**	--
138A	11/18/2015	<50	**8.4**	<25	**16**	**2100**	**14**	**13**	<250	<25	<25	**90**	**91**	--
138A	12/29/2015	<20	**8.6**	<10	**16**	**2400**	**15**	**15**	<100	<10	<10	**85**	**86**	--
AE/RW-9-1	10/3/2011	<10	**74**	<5.0	**16**	**550**	**9.8**	<20	<20	<5.0	**120**	**540**	**12**	--
AE/RW-9-1	9/26/2012	<1.0	**68**	<0.50	**18**	**670**	**8.7**	**4.2**	<5.0	**1.5**	**110**	**730**	**17**	--
AE/RW-9-1	10/17/2013	<1.0	**53**	<0.50	**12**	**710**	**7.7**	**3.9**	<5.0	**1.5**	**45**	**810**	**13**	--
AE/RW-9-1	9/17/2014	<1.0	**80**	<0.50	**16**	**730**	**11**	**5.7**	<5.0	**1.7**	**62**	**590**	**20**	--
AE/RW-9-2	10/3/2011	<170	**110**	<83	<83	**4400**	<83	<330	<330	<83	<83	**8300**	**170**	--
AE/RW-9-2	9/24/2012	<1.0	**120**	<0.50	**44**	**7200**	**84**	**150**	<5.0	**3.8**	**120**	**8000**	**250**	--
AE/RW-9-2 D	8/28/2013	<1.0	**110**	<0.50	**50**	**7300**	**88**	**190**	<5.0	**5.0**	**65**	**8200**	**210**	--
AE/RW-9-2	8/28/2013	<1.0	**86**	<0.50	**23**	**7300**	**77**	**71**	<5.0	**3.6**	**35**	**9800**	**330**	--
AE/RW-9-2	10/17/2013	<1.0	**84**	<0.50	**38**	**8800**	**78**	**190**	<5.0	**4.6**	**49**	**13000**	**260**	--
AE/RW-9-2	9/17/2014	<1.0	**99**	<0.50	**44**	**7100**	**110**	**160**	**7.3**	**5.5**	**45**	**6400**	<250	--
AE/RW-9-2 D	2/12/2015	<100	**37**	<50	<50	**7300**	**72**	<50	<500	<50	<50	**1000**	**240**	--
AE/RW-9-2	2/12/2015	<100	**36**	<50	<50	**7100**	**71**	<50	<500	<50	<50	**1100**	**230**	--
AE/RW-9-2	3/18/2015	<20	**40**	<10	<10	**850**	**17**	**34**	<100	<10	**26**	**1400**	**7.6**	--
AE/RW-9-2	5/13/2015	<200	**120**	<100	<100	**3500**	**160**	**140**	<1000	<100	**81**	**7000**	**77**	--
AE/RW-9-2	8/27/2015	<100	**96**	<50	<50	**7200**	**130**	**170**	<500	<50	**59**	**12000**	**120**	--
AE/RW-9-2	12/29/2015	<10	**72**	<5.0	**19**	**4800**	**86**	**130**	<50	**4.4**	**42**	**9500**	**110**	--
RW-20A	10/3/2011	<14	**11**	<7.1	**9.0**	**560**	**20**	<29	<29	<7.1	**9.5**	**770**	<7.1	--
RW-20A	10/5/2012	<1.0	**12**	<0.50	**10**	**730**	**8.8**	**8.0**	<5.0	**1.6**	**9.4**	**770**	**5.7**	--
RW-20A	10/17/2013	<1.0	**12**	<0.50	**9.3**	**940**	**7.0**	**7.2**	<5.0	**1.7**	**9.1**	**1100**	**4.1**	--
RW-20A	9/17/2014	<1.0	**13**	<0.50	**11**	**680**	**9.6**	**10**	<5.0	**1.7**	**5.8**	**600**	**7.6**	--
RW-21A	10/3/2011	<4.0	**5.8**	<2.0	**4.9**	**240**	**8.0**	**11**	<8.0	**4.2**	**2.4**	**250**	<2.0	--
RW-21A	9/26/2012	<1.0	**6.4**	<0.50	**5.9**	**360**	**7.3**	**9.5**	<5.0	**4.2**	**2.1**	**420**	**2.4**	--
RW-21A	10/17/2013	<1.0	**5.0**	<0.50	**5.0**	**350**	**5.8**	**9.0**	<5.0	**4.6**	**1.6**	**410**	**1.8**	--
RW-21A	9/17/2014	<1.0	**6.7**	<0.50	**5.8**	**280**	**5.7**	**11**	<5.0	**2.0**	**1.1**	**290**	**2.3**	--
B1 Zone														
69B1	2/11/2015	<10	<5.0	<5.0	<5.0	**14**	<5.0	<5.0	<50	<5.0	<5.0	**270**	<5.0	--

Table 16b

VOC Analytical Results

Building 9 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

Mountain View, California

Sample Location	Sample Date	Constituent (concentration in micrograms per liter, ug/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	1,4-Dioxane[1]
B1 Zone														
69B1	4/1/2015	<10	<5.0	<5.0	<5.0	**15**	<5.0	<5.0	<50	<5.0	<5.0	**270**	<5.0	--
69B1	4/29/2015	<10	<5.0	<5.0	<5.0	**20**	<5.0	**1.2**	<50	<5.0	<5.0	**320**	<5.0	--
69B1	5/27/2015	<10	<5.0	<5.0	<5.0	**21**	<5.0	<5.0	<50	<5.0	<5.0	**270**	<5.0	--
69B1	6/30/2015	<5.0	<2.5	<2.5	**1.5**	**14**	<2.5	**0.86**	<25	<2.5	<2.5	**250**	<2.5	--
69B1	7/28/2015	<5.0	<2.5	<2.5	**1.2**	**15**	<2.5	**0.82**	<25	<2.5	<2.5	**290**	<2.5	--
69B1	8/25/2015	<10	<5.0	<5.0	<5.0	**21**	<5.0	<5.0	<50	<5.0	<5.0	**320**	<5.0	--
69B1	9/29/2015	<10	<5.0	<5.0	<5.0	**20**	<5.0	<5.0	<50	<5.0	<5.0	**330**	<5.0	--
69B1	10/28/2015	<10	<5.0	<5.0	<5.0	**19**	<5.0	**0.98**	<5.0	<5.0	<5.0	**310**	<5.0	--
69B1	11/19/2015	<10	<5.0	<5.0	<5.0	**17**	<5.0	<5.0	<50	<5.0	<5.0	**280**	<5.0	--

Notes:
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-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
(1) 1,4-dioxane analyzed by method 8270C SIM
(2) Wells are not part of the Building 9 monitoring program, but are sampled as part of the ongoing pilot study at Building 9.
< indicates analyte not detected above the reported detection limit
D indicates duplicate sample
-- indicates the sample was not analyzed for the given analyte

Table 16c
VOC Analytical Results
Building 18 Five Year Summary, January 2011 through December 2015
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
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	1,4-Dioxane[1]
A Zone														
54A	9/22/2011	<8.3	**8.1**	<4.2	**10**	**180**	<4.2	<17	<17	<4.2	<4.2	**610**	<4.2	NA
54A	10/18/2012	<1.0	**1.4**	<0.50	**2.1**	**70**	**2.4**	**2.5**	<5.0	<0.50	**1.7**	**170**	<0.50	<1.0
54A	10/29/2013	<1.0	**1.8**	<0.50	**3.0**	**68**	**4.5**	**4.9**	<5.0	<0.50	**2.3**	**310**	**0.74**	NA
54A	9/19/2014	<1.0	**2.3**	<0.50	**3.5**	**110**	**3.8**	**3.7**	<5.0	**0.56**	<5.0	**280**	**1.0**	NA
80A	9/2/2011	<4.0	<2.0	<2.0	**2.6**	**90**	<2.0	<8.0	<8.0	<2.0	<2.0	**190**	<2.0	NA
80A	10/22/2012	<1.0	**2.3**	<0.50	**3.3**	**170**	**2.1**	**2.4**	<5.0	**0.88**	**1.1**	**280**	<0.50	**1.4**
80A	10/29/2013	<1.0	**2.4**	<0.50	**4.0**	**190**	**3.1**	**2.7**	<5.0	**0.98**	**1.1**	**270**	<0.50	NA
80A	9/19/2014	<1.0	**3.1**	<0.50	**4.6**	**210**	**4.5**	**3.0**	<5.0	**1.3**	<25	**240**	**0.57**	NA
147A	9/2/2011	<2.0	<1.0	<1.0	<1.0	**13**	<1.0	<4.0	<4.0	<1.0	<1.0	**110**	<1.0	NA
147A D	10/24/2012	<1.0	<0.50	<0.50	<0.50	**12**	<0.50	**0.51**	<5.0	**0.64**	**0.67**	**130**	<0.50	NA
147A	10/24/2012	<1.0	<0.50	<0.50	<0.50	**12**	<0.50	<0.50	<5.0	**0.56**	**0.70**	**120**	<0.50	NA
147A	10/21/2013	<1.0	<0.50	<0.50	<0.50	**8.2**	<0.50	**0.50**	<5.0	**0.60**	**0.63**	**110**	<0.50	NA
147A	9/17/2014	<1.0	<0.50	<0.50	<0.50	**11**	<0.50	**0.51**	<5.0	**0.73**	**0.71**	**130**	<0.50	NA
147A D	9/17/2014	<1.0	<0.50	<0.50	<0.50	**11**	<0.50	**0.50**	<5.0	**0.71**	**0.72**	**130**	<0.50	NA
152A	9/21/2011	<10	<5.0	<5.0	**5.2**	**570**	**6.4**	<20	<20	<5.0	<5.0	**330**	**51**	NA
152A D	9/21/2011	<10	<5.0	<5.0	**5.2**	**580**	**8.3**	<20	<20	<5.0	<5.0	**330**	**52**	NA
152A D	9/19/2012	<1.0	**1.0**	<0.50	**1.7**	**130**	**1.6**	**1.4**	<5.0	<0.50	**0.75**	**270**	**2.6**	NA
152A	9/19/2012	<1.0	**0.98**	<0.50	**1.7**	**130**	**1.6**	**1.3**	<5.0	<0.50	**0.75**	**270**	**2.5**	NA
152A	10/21/2013	<1.0	**0.58**	<0.50	**1.1**	**88**	**1.5**	**1.0**	<5.0	<0.50	**0.57**	**240**	**1.0**	NA
152A	9/19/2014	<1.0	**1.4**	<0.50	**2.8**	**190**	**2.6**	**2.4**	<5.0	**0.85**	<25	**320**	**2.9**	NA
RW-25A	9/15/2011	<13	**7.6**	<6.3	**12**	**1500**	**24**	<25	<25	<6.3	<6.3	**1200**	**35**	NA
RW-25A	9/21/2012	<1.0	**2.8**	<0.50	**4.3**	**330**	**4.8**	**7.2**	<5.0	**0.73**	**1.8**	**670**	**2.2**	NA
RW-25A	10/17/2013	<10	<5.0	<5.0	<5.0	**230**	<5.0	**7.3**	<50	<5.0	<5.0	**610**	<5.0	NA
RW-25A	9/29/2014	<0.50	**3.0**	<0.50	**4.7**	**290**	**5.4**	**8.3**	<2.0	**0.97**	**1.5**	**640**	**3.9**	NA
B1 Zone														
32B1 (RGRP)	9/26/2011	<13	<6.3	<6.3	<6.3	**150**	**13**	**38**	<25	<6.3	<6.3	**1200**	<6.3	NA
32B1 (RGRP)	9/19/2012	<1.0	**2.2**	<0.50	**6.0**	**62**	<0.50	**8.5**	<5.0	<0.50	**0.63**	**520**	<0.50	NA
32B1 (RGRP)	10/21/2013	<1.0	**1.3**	<0.50	**4.5**	**76**	<0.50	**10**	<5.0	<0.50	**0.50**	**890**	<0.50	NA
32B1 (RGRP)	9/19/2014	<1.0	**3.0**	<0.50	**9.9**	**82**	**0.88**	**22**	<5.0	**0.80**	**1.2**	**770**	<0.50	NA

Table 16c

VOC Analytical Results

Building 18 Five Year Summary, January 2011 through December 2015

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs

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	1,4-Dioxane[1]
B1 Zone														
143B1 (RGRP)	9/23/2011	<25	<13	<13	<13	**290**	<13	**76**	<50	<13	<13	**1300**	<13	NA
143B1 (RGRP)	9/19/2012	<1.0	**3.5**	<0.50	**7.6**	**640**	**4.8**	**62**	<5.0	**1.4**	**1.1**	**1800**	**0.56**	NA
143B1 (RGRP)	10/23/2013	<1.0	**1.9**	<0.50	**5.6**	**510**	**2.7**	**89**	<5.0	**2.0**	**1.1**	**2200**	<0.50	NA
143B1 (RGRP)	10/16/2014	<1.0	**1.4**	<0.50	**4.1**	**540**	**3.7**	**57**	<5.0	**1.5**	**0.78**	**1500**	<0.50	NA

Notes:
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-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
(1) 1,4-dioxane analyzed by method 8270C SIM
< indicates analyte not detected above the reported detection limit
D indicates duplicate sample
NA indicates the sample was not analyzed for the given analyte
(RGRP) = Regional Groundwater Remediation Program Well associated with the Fairchild Operation and Maintenance Program (RMT, 2003)

Table 17
Mann-Kendall Statistics Concentration Trends Summary
MEW Former Fairchild Buildings 1-4, 9, 18 Groundwater Remediation Programs
Mountain View, California

Buildings 1-4			
Well Name	**TCE**	**cis-1,2-DCE**	**Vinyl Chloride**
A Zone			
33A	N/A	N/A	N/A
46A	S	S	ND
51A	N/A	N/A	N/A
57A	N/A	N/A	N/A
59A	N/A	N/A	N/A
61A	S	S	ND
62A	D	D	NT
67A	N/A	N/A	N/A
68A	N/A	N/A	N/A
76A	PD	D	ND
84A	N/A	N/A	ND
118A	NT	I	NT
121A	N/A	N/A	N/A
124A	N/A	N/A	N/A
127A	NT	NT	ND
129A	N/A	N/A	N/A
130A	S	NT	NT
133A	N/A	N/A	ND
156A	NT	D	D
157A	S	I	S
REG-MW-2A	S	S	D
RW-3A	PD	PD	ND
RW-4A	S	NT	PD
RW-5A	PD	S	S
RW-7A	D	PI	S
RW-9A	D	NT	NT
RW-16A	D	I	S
RW-18A	S	I	NT

Buildings 1-4			
Well Name	**TCE**	**cis-1,2-DCE**	**Vinyl Chloride**
A Zone			
RW-27A	D	NT	S
RW-28A	S	NT	S
B1 Zone			
2B1	S	S	ND
20B1	N/A	N/A	N/A
60B1	PD	NT	D
115B1	S	I	NT
119B1	S	S	ND
147B1	NT	I	ND
RW-3(B1)	S	PI	ND
RW-4(B1)	D	S	D
RW-5(B1)	S	D	D
RW-7(B1)	D	NT	D
RW-9(B1)R	D	S	D
RW-12(B1)	D	S	D
B2 Zone			
10B2	PD	NT	ND
11B2	S	ND	ND
113B2	S	NT	ND
118B2	S	ND	ND
148B2	S	ND	ND
RW-3(B2)	NT	D	D
RW-4(B2)	PD	S	S
RW-5(B2)	ND	ND	NT
RW-7(B2)	NT	NT	NT
RW-9(B2)	D	S	NT

Building 9			
Well Name	**TCE**	**cis-1,2-DCE**	**Vinyl Chloride**
A Zone			
35A	N/A	N/A	N/A
36A	S	S	S
37A	D	NT	NT
40A	D	I	NT
41A	S	NT	S
42A	S	I	D
43A	PD	NT	S
44A	D	S	S
122A	N/A	N/A	N/A
126A	N/A	N/A	N/A
137A	NT	S	D
138A	I	S	S
AE/RW-9-1	S	PI	NT
AE/RW-9-2	I	I	NT
RW-20A	NT	NT	NT
RW-21A	NT	PI	NT
B1 Zone			
69B1	N/A	N/A	N/A

Building 18			
Well Name	**TCE**	**cis-1,2-DCE**	**Vinyl Chloride**
A Zone			
54A	D	D	D
80A	S	NT	PD
147A	PD	NT	ND
152A	D	D	D
RW-25A	D	PD	S
B1 Zone			
32B1	S	NT	ND
143B1	D	PI	D

Notes:
TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
PI = Probably Increasing
I = Increasing
S = Stable
PD = Probably Decreasing
D = Decreasing
NT = No Trend
N/A = Not applicable due to insufficient data (< 4 sampling events)
ND = Non-Detect, In circumstances where sample concentrations have not been detected in any sample from the last 10 sampling years the ND designation was used
Mann-Kendall statistical analysis was performed on Site wells using data from 2005 to 2014

Table 18
Buildings 20 and 20A List of Wells
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

RGRP Monitoring Wells Located on the Building 20 Site		
Well	**Sample Frequency[1]**	**Water Level Gauging Frequency[2]**
A Zone		
26A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
29A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
99A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
153A (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B1 Zone		
91B1 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
92B1 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B2 Zone		
16B2 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
89B2 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
132B2 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
134B2 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
B3 Zone		
28B3 (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)
C/Deep Zone		
11C (RGRP)	Annually (September or October, last sampled 2014)	Semiannually (March, September)

Extraction Wells Located on the Building 20 Site	
Well	**Operational Status**
A Zone	
RAY-1A (Raytheon)	on
B1 Zone	
RAY1-B1 (Raytheon)	on
REG-4B(1) (RGRP)	on
B3 Zone	
65B3 (RGRP)[3]	off
C/Deep Zone	
DW3-219 (RGRP)[4]	off
DW3-244 (RGRP)[4]	off
DW3-334 (RGRP)[4]	off
DW3-364 (RGRP)[4]	off
DW3-505R (RGRP)[4]	off

Notes:

1. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells were not sampled in 2015 in order to evaluate the proposed reduction in sampling frequency to a biennial basis. The wells will be sampled in 2016 and the proposed reduction in sampling frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

2. In February 2015, Geosyntec submitted the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015a). Based on verbal feedback provided by the EPA, the wells will not be gauged in March 2016 in order to evaluate the proposed reduction in gauging frequency to an annual basis. The wells will be gauged in September 2016 and the proposed reduction in frequency will be evaluated as part of the 2016 Annual Progress Report. EPA conditionally approved this approach in a letter dated 16 March 2016 (EPA, 2016).

3. Well was turned off in September 2012 with EPA approval (EPA, 2012).

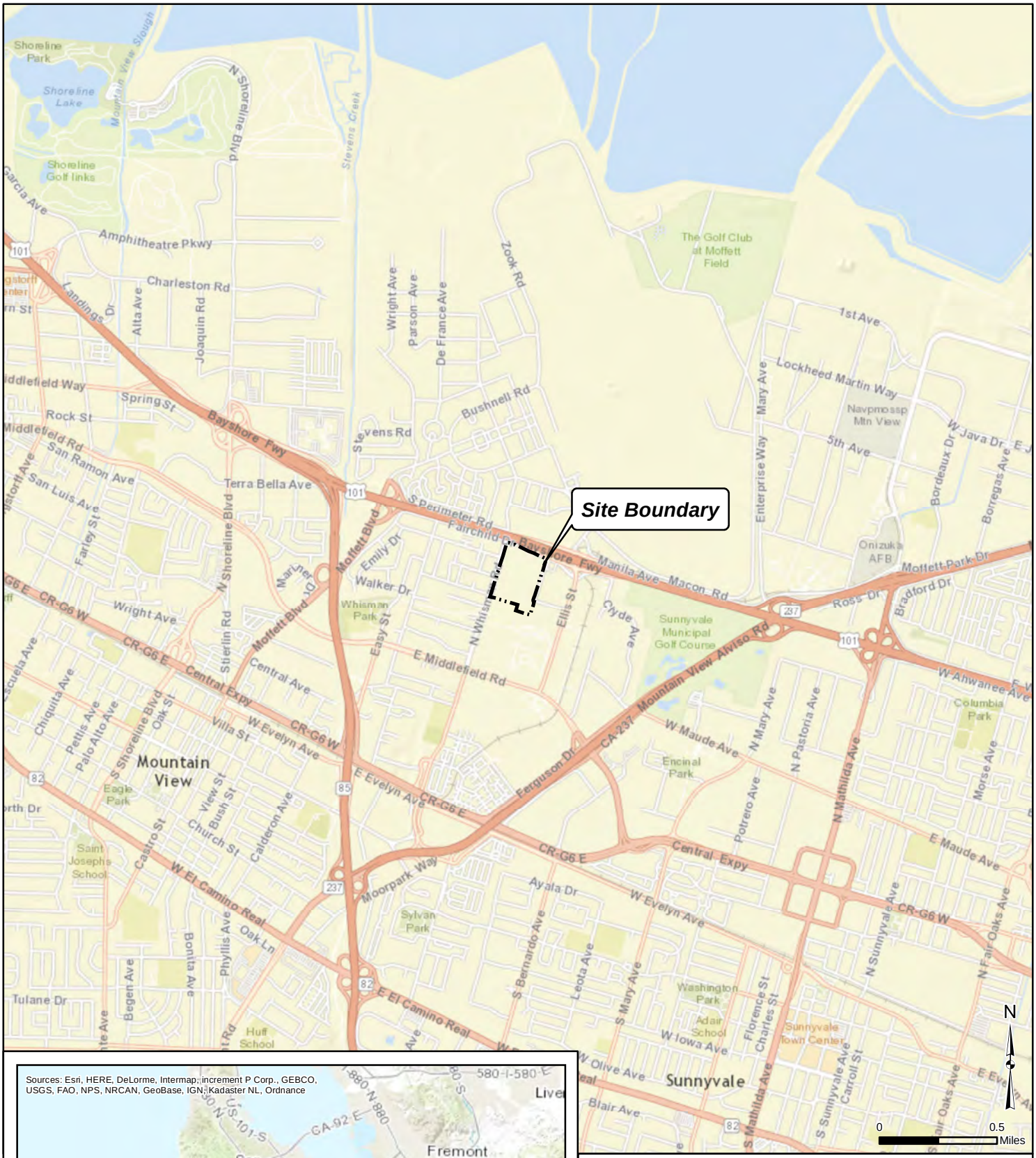
4. Well is offline with EPA approval (EPA, 2006; Weiss, 2009; Geosyntec 2010).

(RGRP) = Regional Groundwater Remediation Program well located in the vicinity of Buildings 20 and 20A. Further discussion of this well is provided in the MEW RGRP 2015 Annual Progress Report (Geosyntec, 2016a)

(Raytheon) = Raytheon extraction well located in the vicinity of Buildings 20 and 20A. Further discussion of this well is provided in the Raytheon 2015 Annual Progress Report (Locus, 2016)

EPA = United States Environmental Protection Agency

FIGURES



Site Location Map

MEW Former Fairchild Buildings 1-4, 9, 18
Mountain View, California

Geosyntec consultants

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Figure 1

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig01_SiteLocation_v2.mxd 3/23/2016 9:53:27 AM

Evandale Avenue

Highway 101

Murlagan Avenue

Whisman Avenue

National Avenue

Hetch Hetchy Aqueduct

Ellis Street

Middlefield Road

A

B

C

D

E

F

G

H

I

J

K

L

M

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. 331 Fairchild Drive*

FAIRCHILD BUILDING 9
F. 600 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

* Former address for Building 18 is 644 National Avenue
** Former address for Building 9 is 401 National Avenue

N

300 150 0 300 Feet

Current Building Configurations
Former Fairchild Facilities

MEW Former Fairchild Buildings 1-4, 9, 18
Groundwater Remediation Program
Mountain View, California

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Figure 2

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Legend

Recovery and Monitoring Wells

- Monitoring Well
- Recovery Well, On
- Recovery Well, Off
- Treatment System 1 Pipeline
- Treatment System 3 Pipeline
- Slurry Wall
- Building
- Road

- Former Fairchild Buildings 1-4 Site - 515/545 North Whisman Road and 313/323 Fairchild Drive
- Former Fairchild Building 18 Site - 331 Fairchild Drive
- Former Fairchild Building 9 Site - 401 National Avenue
- Fairchild Groundwater Treatment Systems 1 and 3

Note: Pipeline locations are approximate.

N

0 280 Feet

Site Map and Well Network

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

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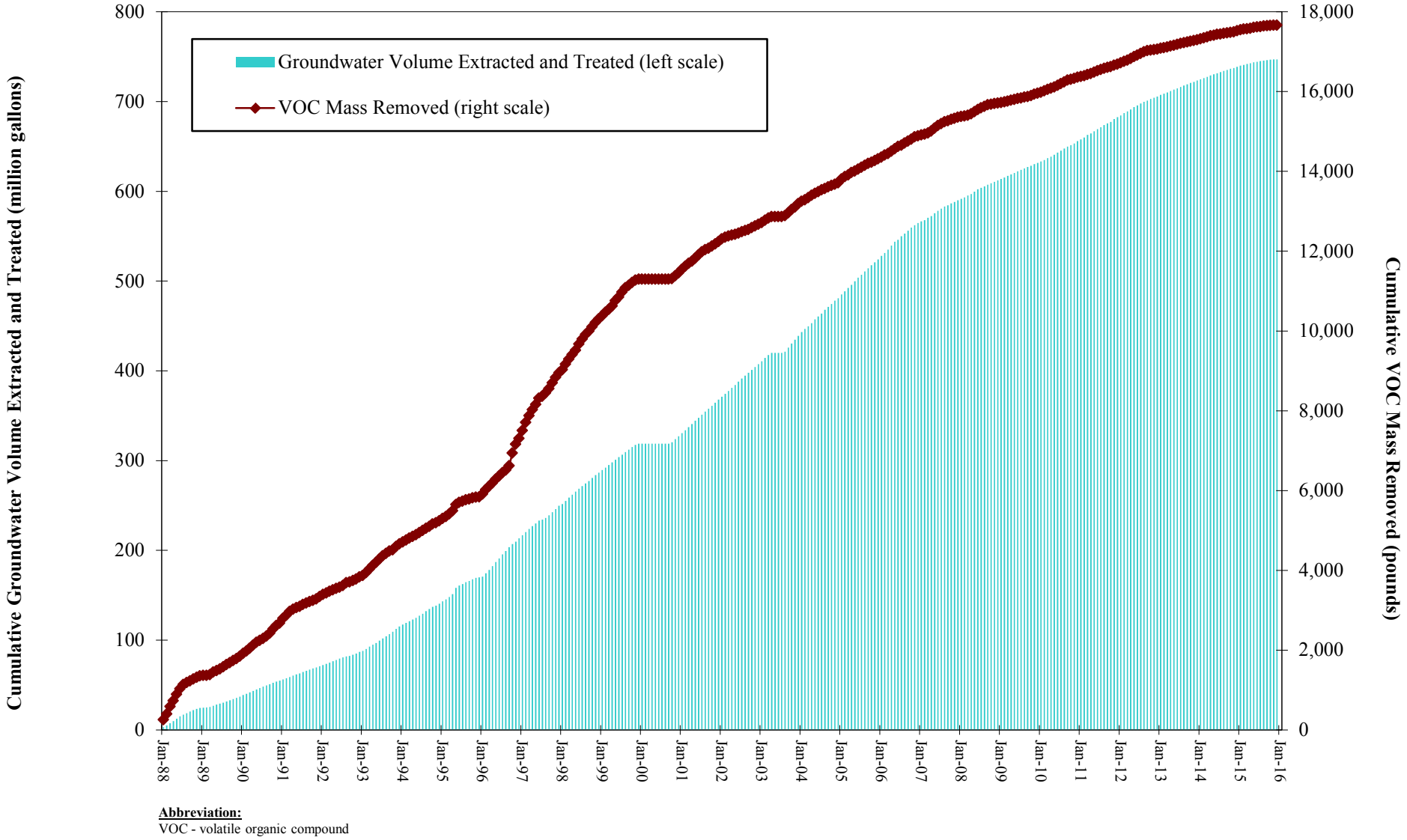
Figure 3

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig03_SiteMap.mxd



Abbreviation:
VOC - volatile organic compound

Source: Fourth Quarter and Annual 2015 Self-Monitoring Report, Treatment System 1 (Weiss, 2016a)

Cumulative Groundwater Extracted and VOC Mass Removed, System 1

MEW Former Fairchild Buildings 1-4, 9, 18
Groundwater Remediation Programs
Mountain View, California

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Figure 4

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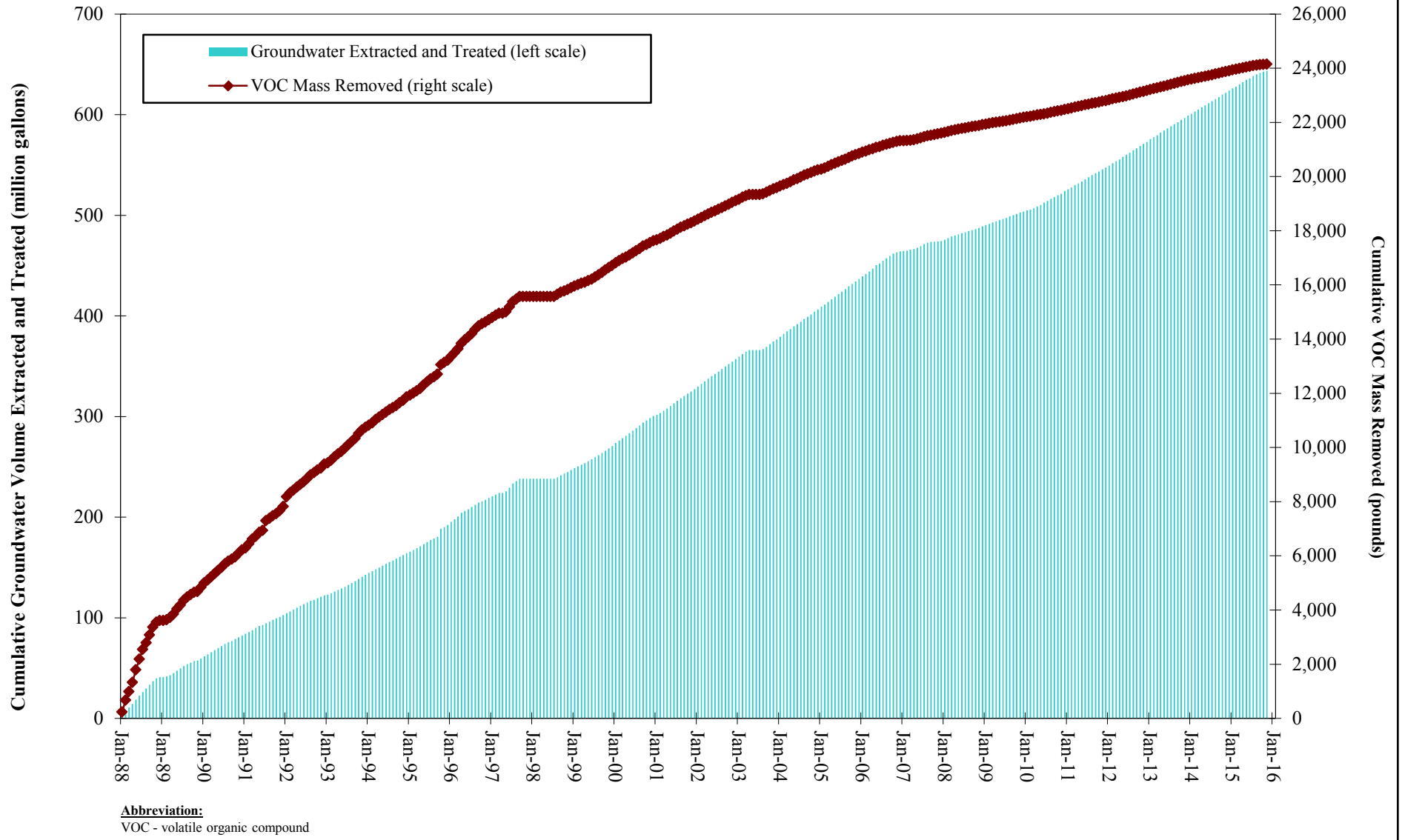

Abbreviation:
VOC - volatile organic compound

Source: Fourth Quarter and Annual 2015 Self-Monitoring Report, Treatment System 3 (Weiss, 2016b)

Cumulative Groundwater Extracted and VOC Mass Removed, System 3

MEW Former Fairchild Buildings 1-4, 9, 18
Groundwater Remediation Programs
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Figure 5

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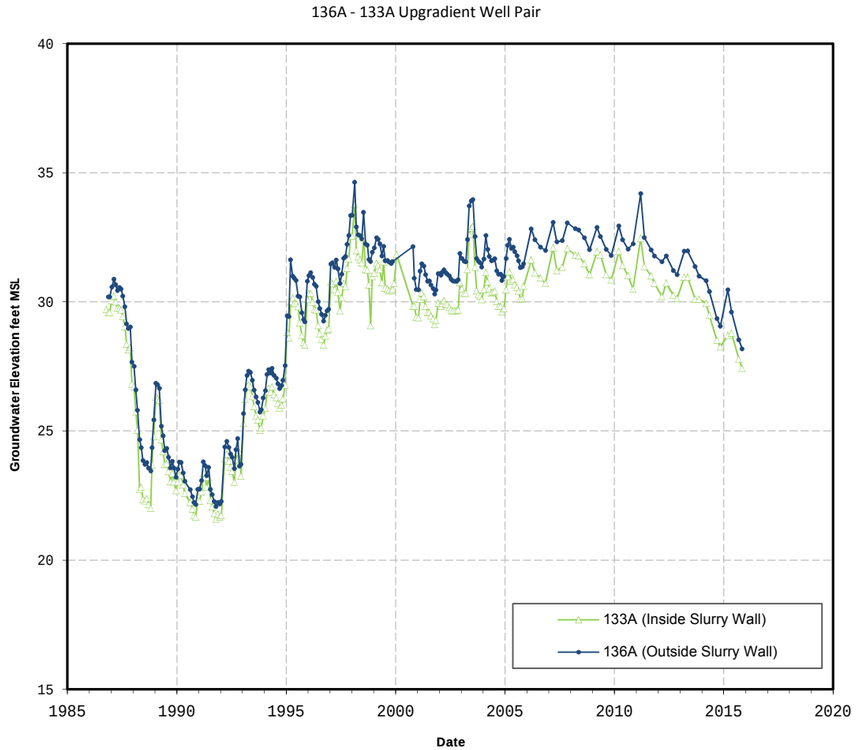

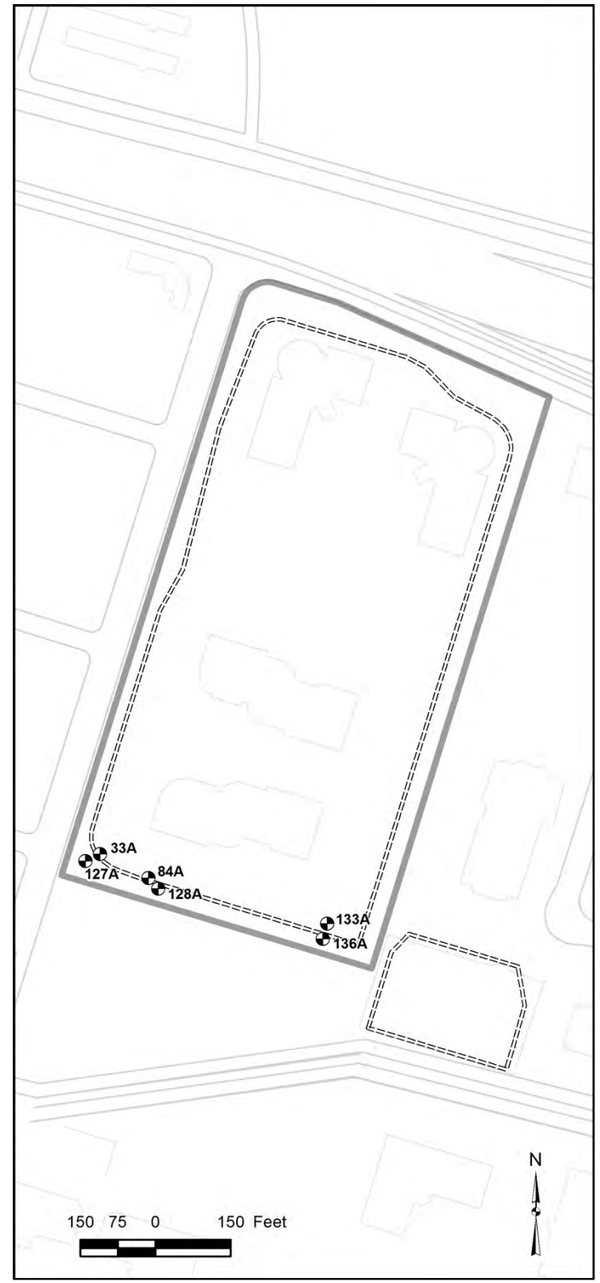

Hydrographs
Buildings 1-4 Upgradient A Zone Slurry Wall Well Pairs
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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Figure 6

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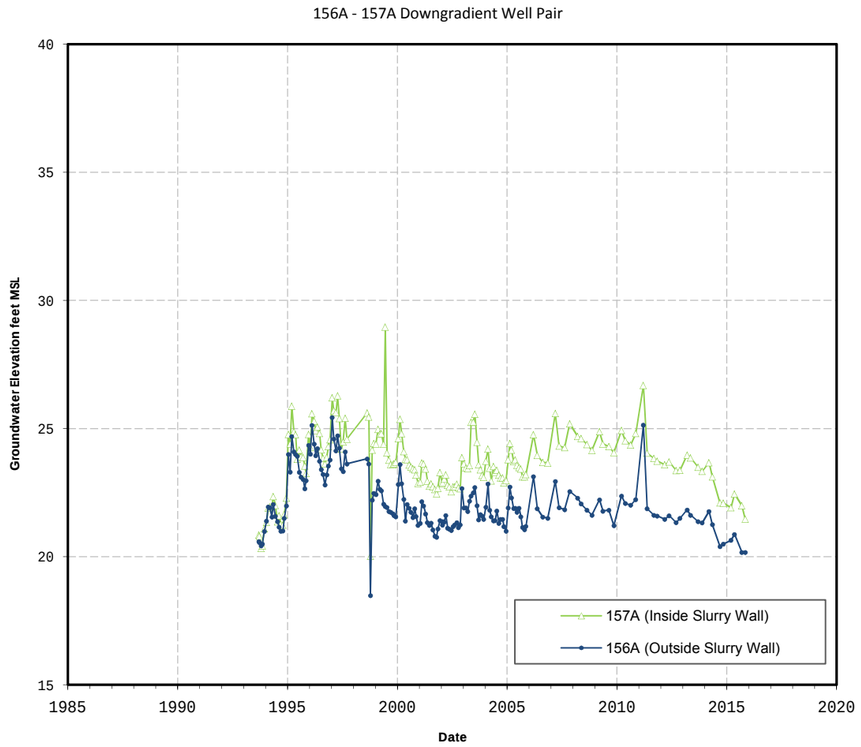

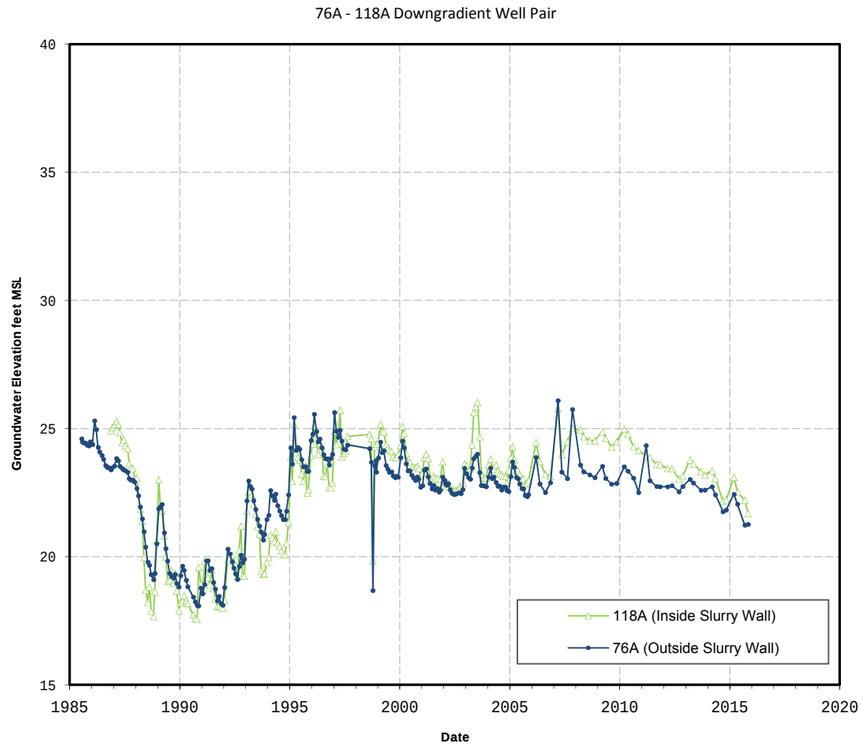

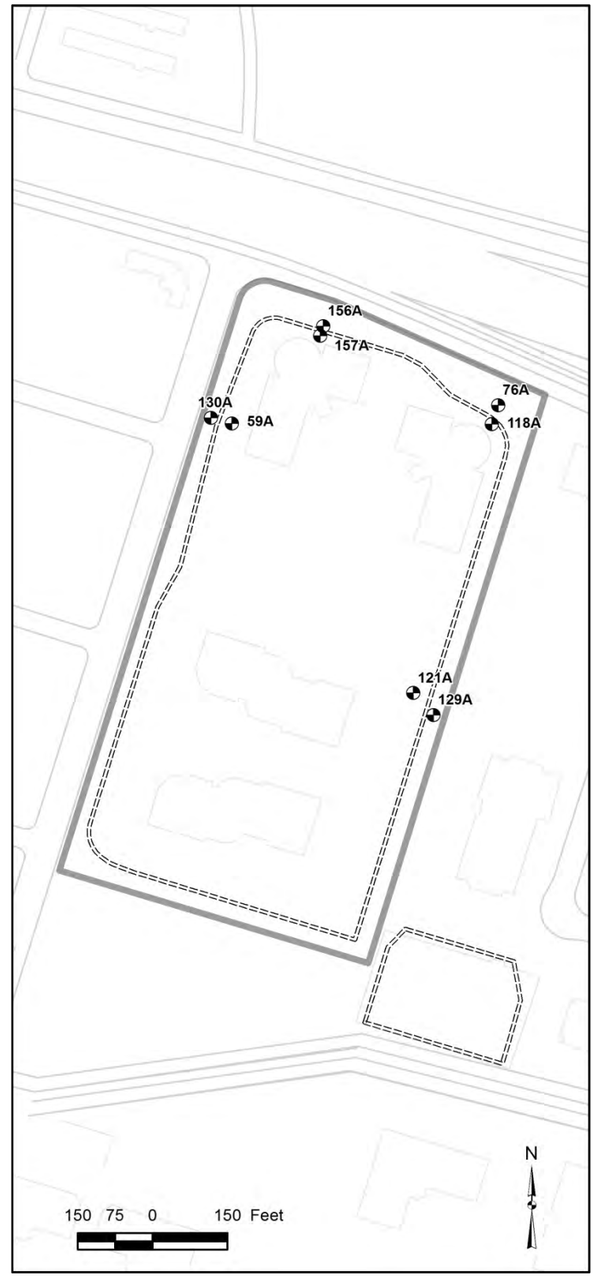

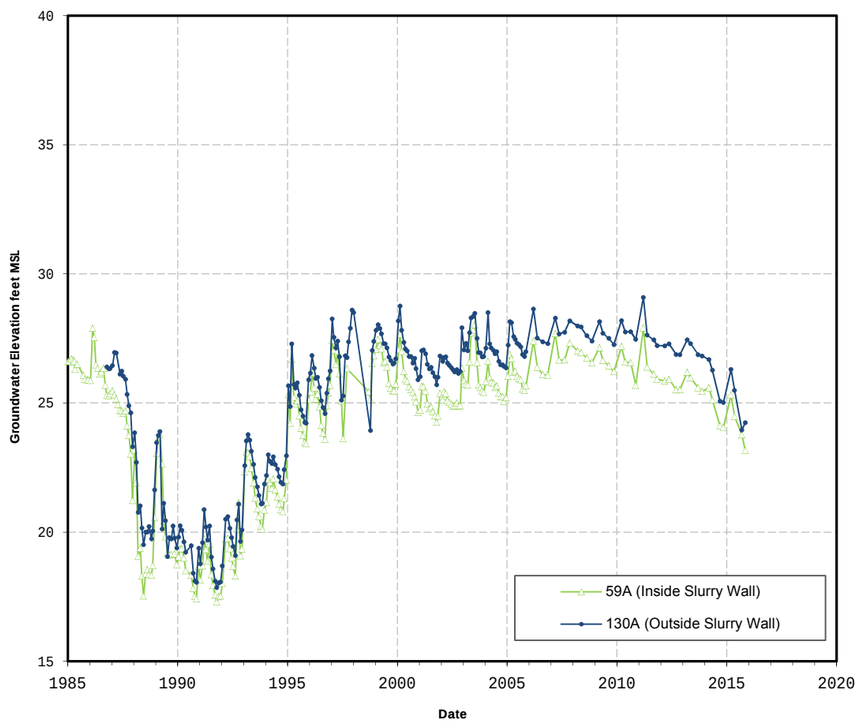

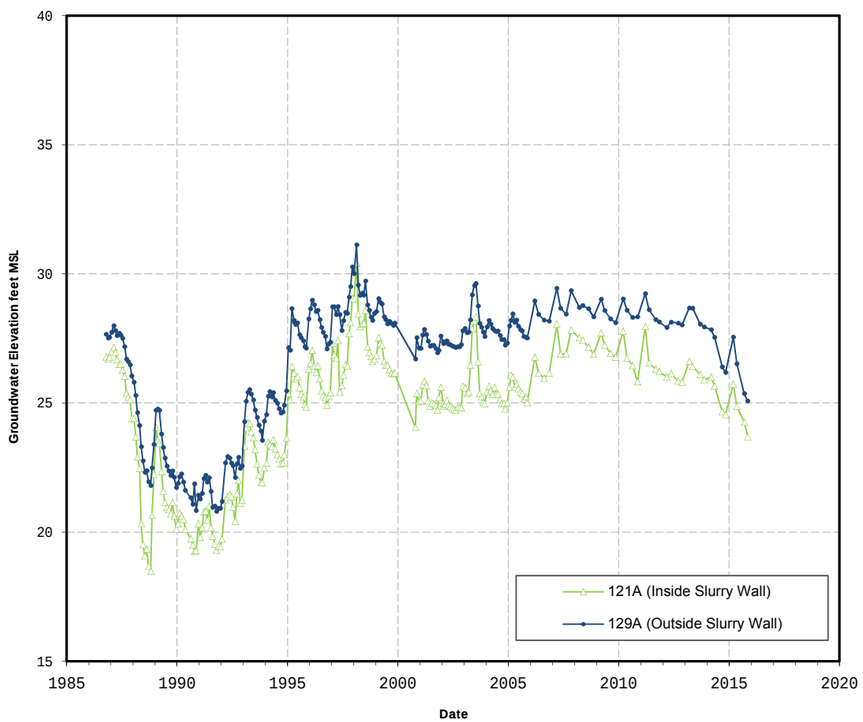

Hydrographs
Buildings 1-4 Crossgradient and Downgradient A Zone Slurry Wall Well Pairs

MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **7**

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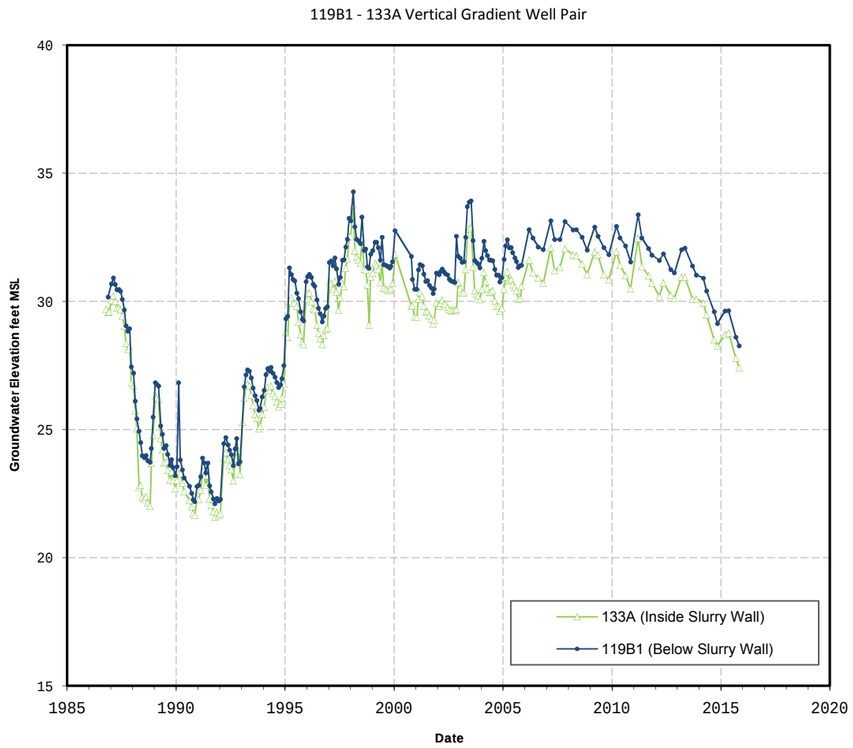

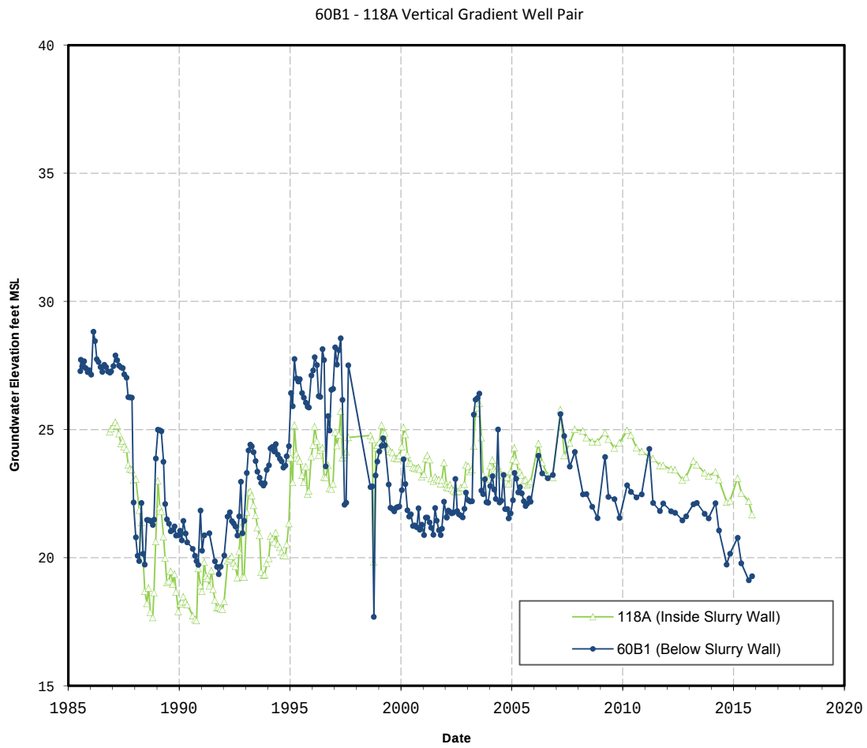

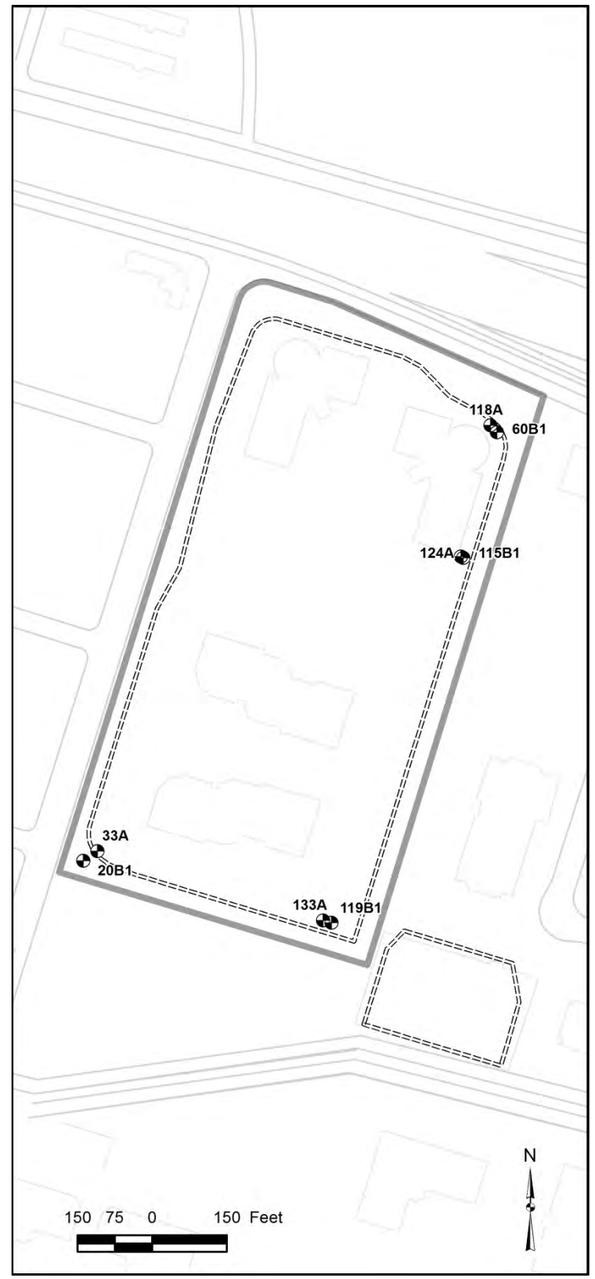

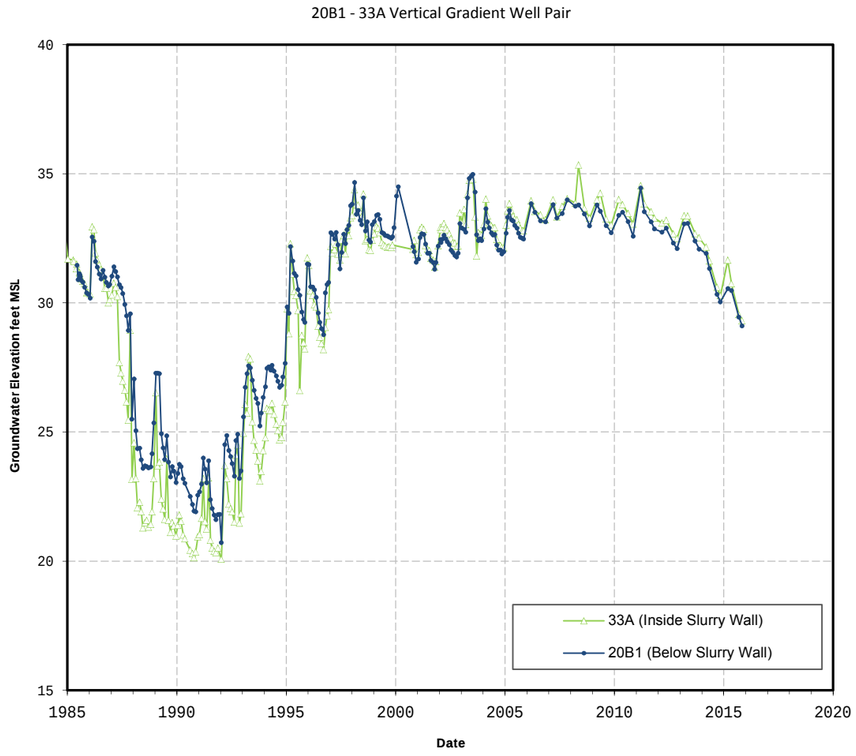

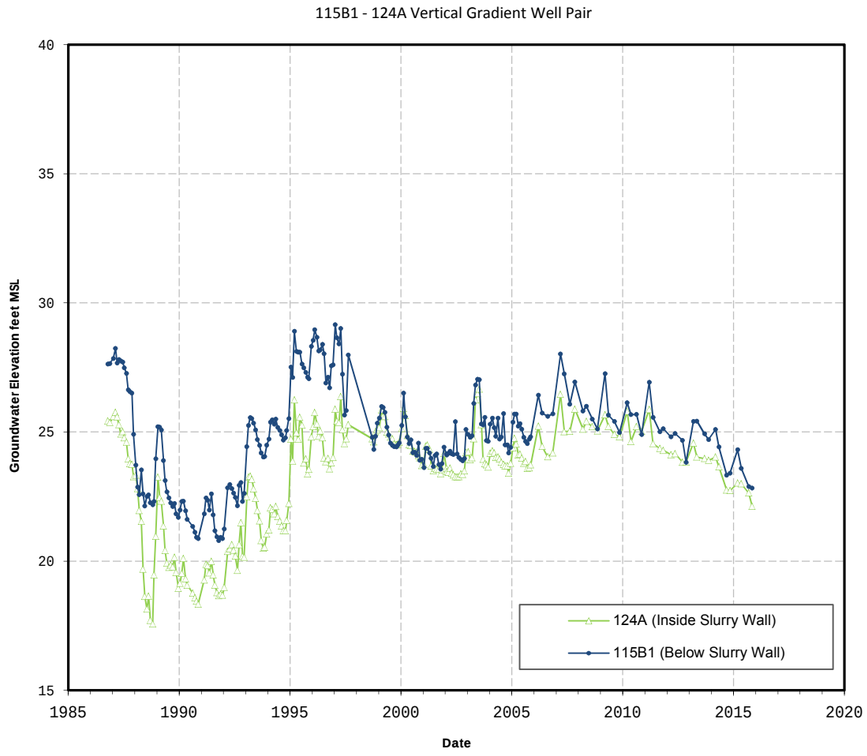

Hydrographs
Buildings 1-4 Slurry Wall Well Pairs Across Water-Bearing Zones
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **8**

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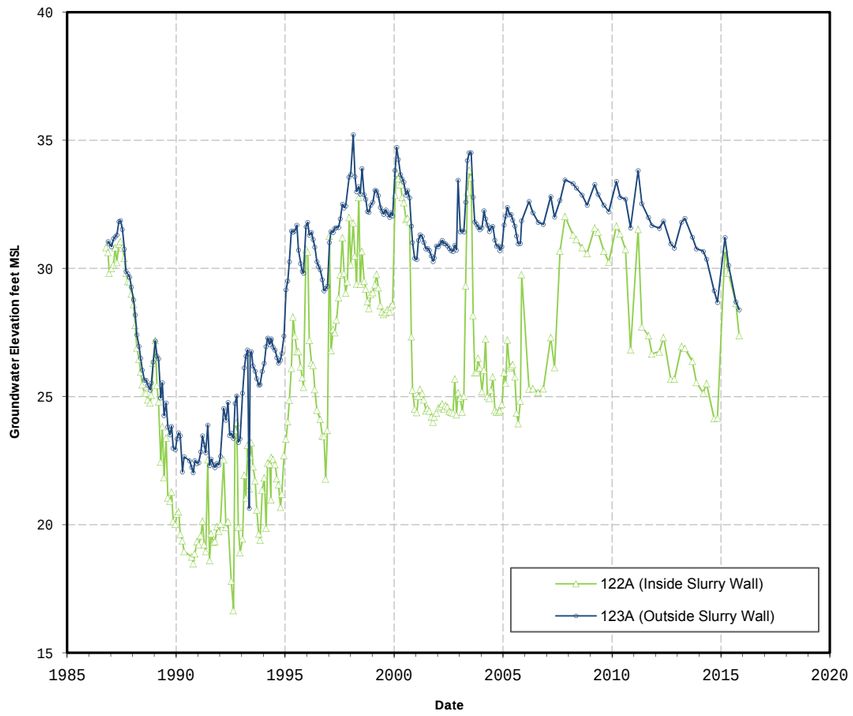
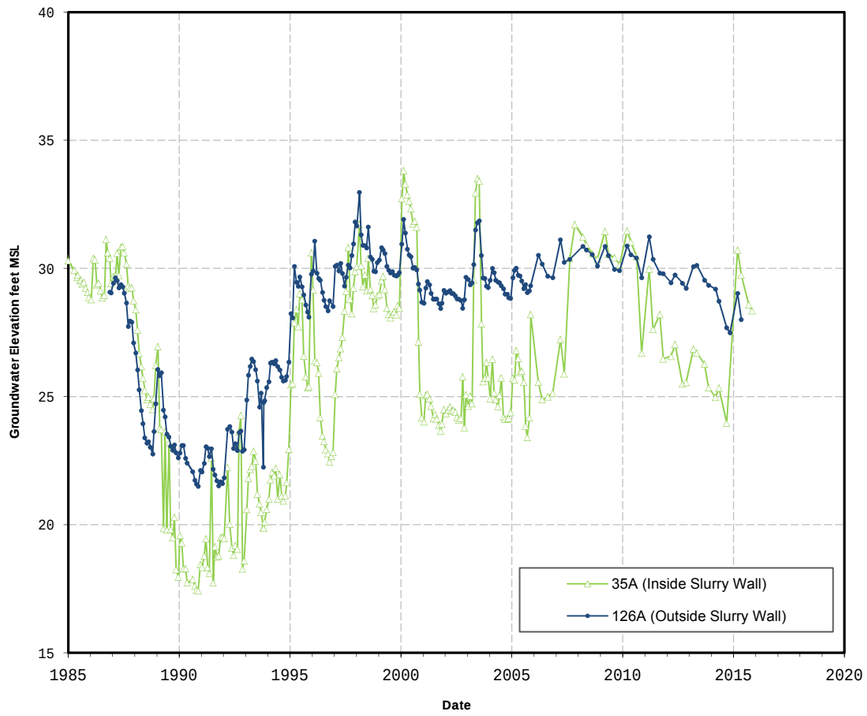
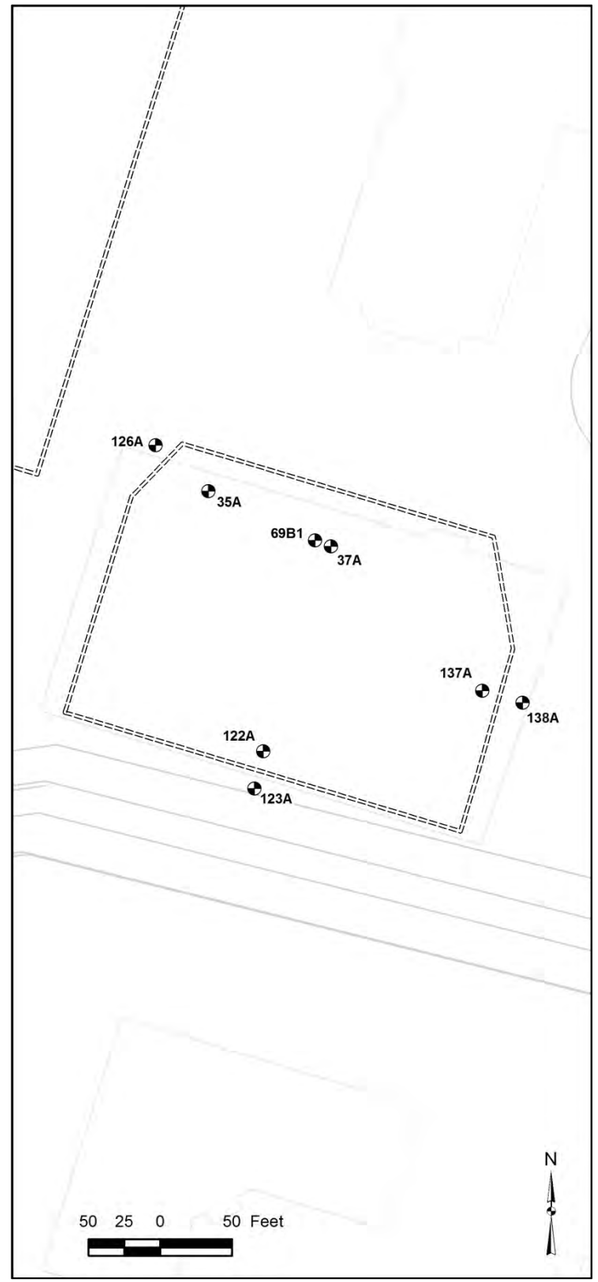
123A - 122A Upgradient Well Pair

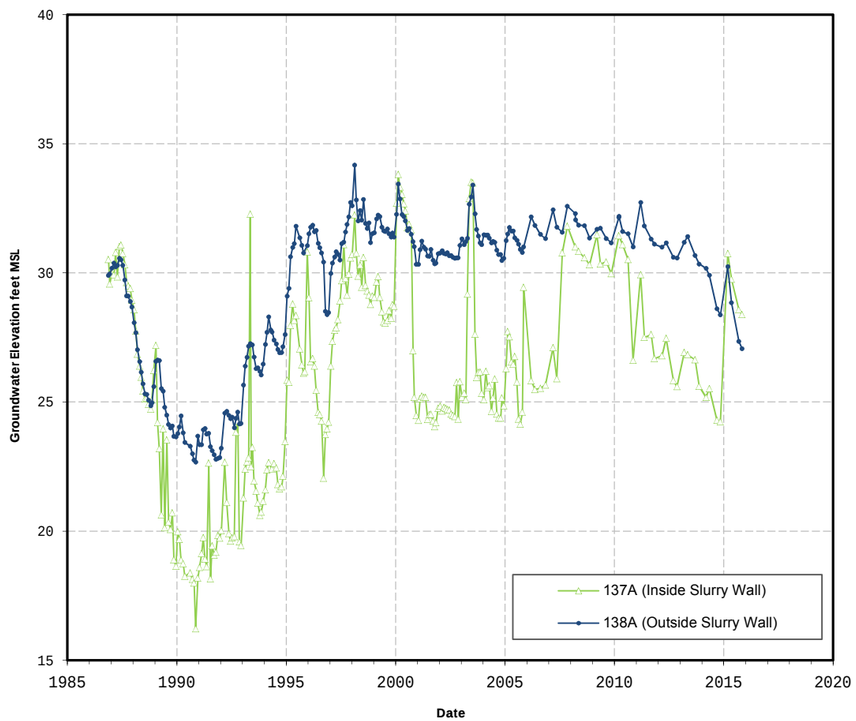


126A - 35A Downgradient Well Pair

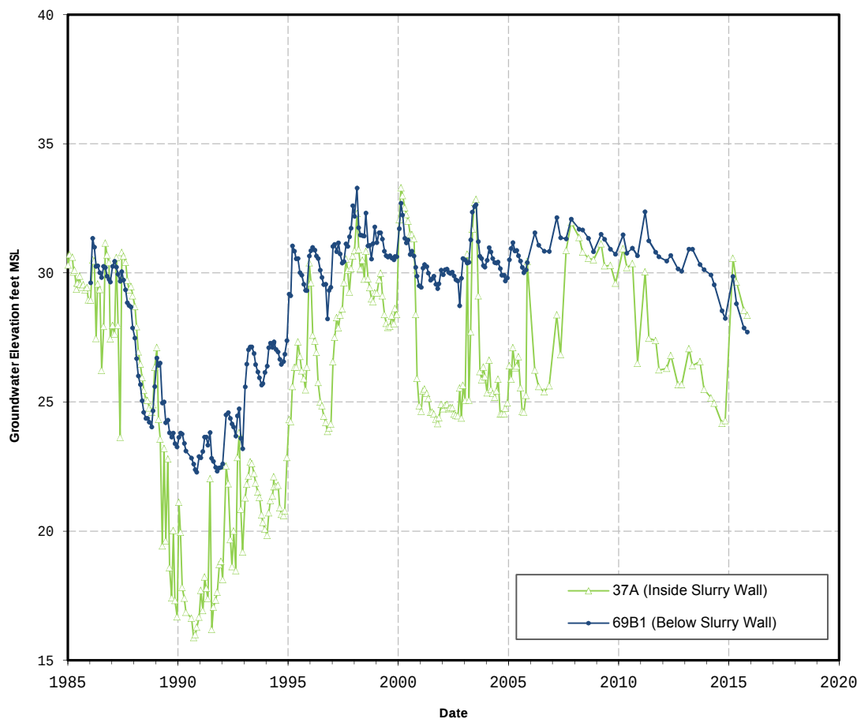




138A - 137A Eastern Crossgradient Well Pair



69B1 - 37A Vertical Gradient Well Pair



Hydrographs
Building 9 Slurry Wall Well Pairs

MEW Former Fairchild Building 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **9**

P:\GIS\MEW\Excel\Fairchild\2014_AR\Building1-4,9,18\Fig09_Hydrographs.xlsx

Fairchild Drive
HIGHWAY 101
Evandale Drive
Devonshire
Murlagen
Walker Drive
Hetch Hetchy Aqueduct
National Avenue

61A 25.43
156A 20.64*
157A 21.91
RW-7A (13) 17.90
RW-9A (6.9) 19.19*
62A 22.29
76A 22.44
130A 26.30
59A 25.31
118A 23.11
RW-27A (5.9) 11.04
67A 23.81
RW-5A (3.2) 22.99
57A 25.78
124A 23.02
RW-4A (2.9) 25.69
RW-18A (4.9) 24.42
REG-MW-2A 26.13
RW-25A (8) 24.90*
80A 26.51
58A 26.45
152A 26.47
46A 29.35
51A 24.38
151A 27.82
121A 25.72
RW-28A NM
129A 27.55
54A 27.31
147A 27.66
68A 28.56
RW-3A 31.49
127A 31.83
33A 31.65
84A 30.92
128A 31.97
RW-16A 27.12
133A 28.71
136A 30.47
126A 29.03
42A 29.15
44A 29.44
35A 30.72
41A 29.14
43A 29.60
37A 30.56
AE/RW-9-1 30.38
36A 30.66
39A 29.59
40A NM
RW-21A 30.77
AE/RW-9-2 30.68
137A 30.75
138A 30.24
122A 30.78
31A 30.50
123A 31.21
RW-20A 30.78

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, 2016a).

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
- RW-25A Target Capture Zone
- Slurry Wall
- Building
- Road

RW-18A (4.9) 24.42 Well ID (Pumping Rate) 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 1-4, 9, or 18 Sites are shown in gray.

N

150 75 0 150 Feet

A Zone Groundwater Contours and Estimated Capture Zones 19 March 2015

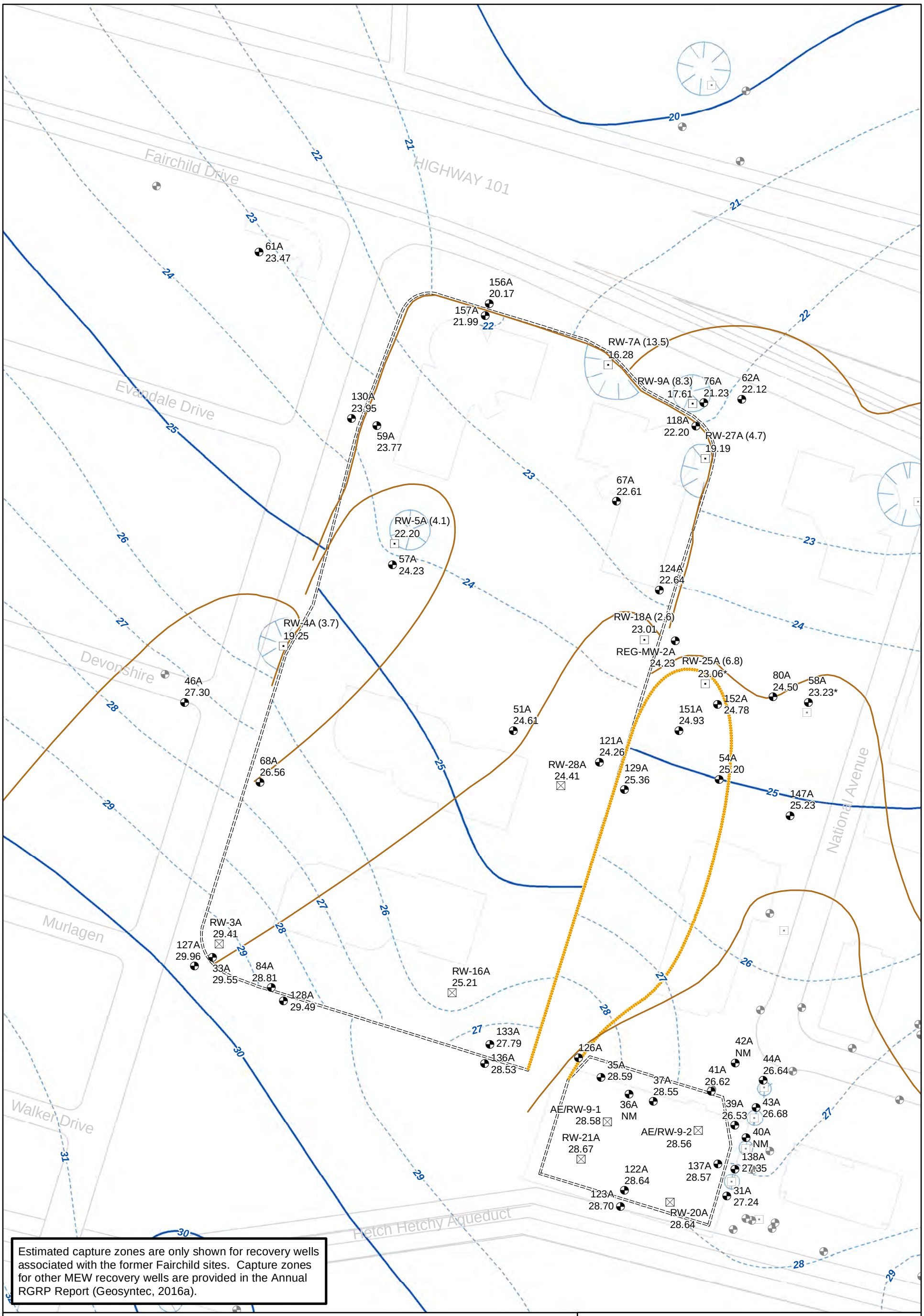
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **10a**

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig10a_GW_A_Mar.mxd | 4/8/2016 1:38:03 PM



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, 2016a).

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
- RW-25A Target Capture Zone
- Slurry Wall
- Building
- Road

RW-4A (3.7) Well ID (Pumping Rate)
19.25 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 1-4, 9, or 18 Sites are shown in gray.

N

150 75 0 150 Feet

A Zone Groundwater Contours and Estimated Capture Zones 17 September 2015

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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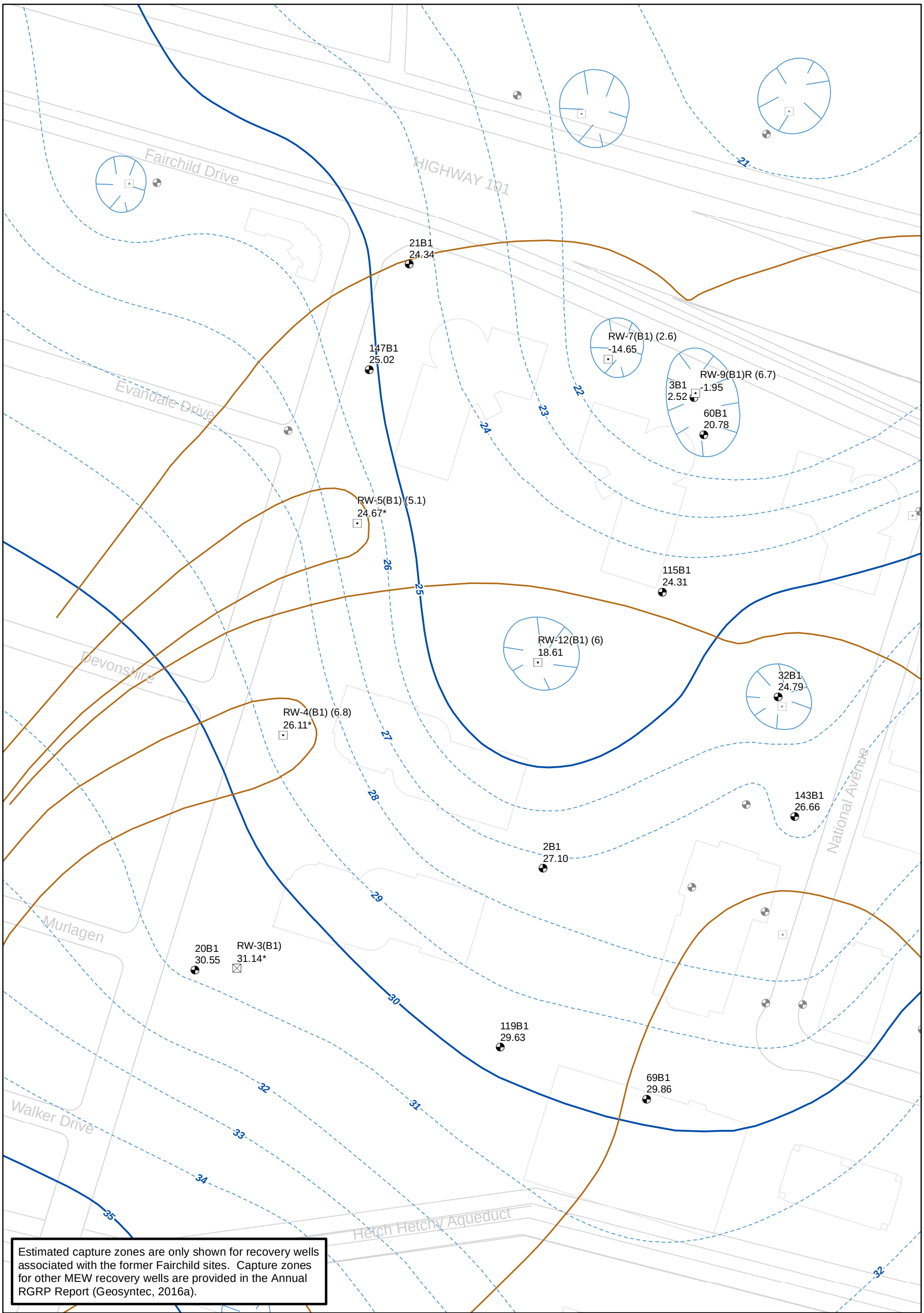
Figure **10b**

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig10b_GW_A_Sept.mxd | 4/8/2016 1:38:53 PM



B1 Zone Groundwater Contours and Estimated Capture Zones 19 March 2015

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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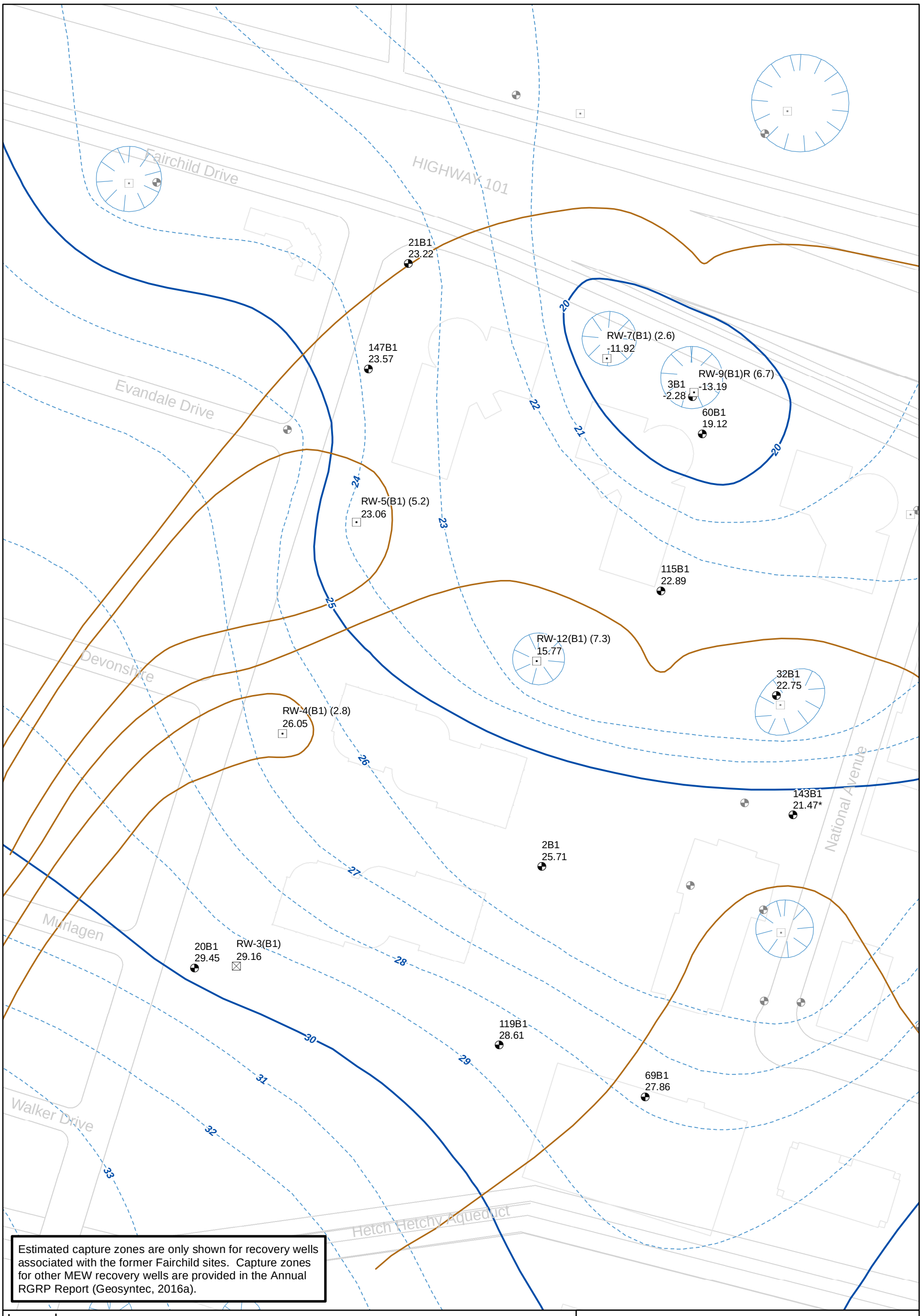
Figure 11a

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig11a_GW_B1_Mar.mxd | 4/8/2016 1:39:39 PM



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, 2016a).

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

RW-4(B1) (2.8) Well ID (Pumping Rate)
26.05 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 1-4, 9, or 18 Sites are shown in gray.

N

150 75 0 150 Feet

B1 Zone Groundwater Contours and Estimated Capture Zones 17 September 2015

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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Figure 11b

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig11b_GW_B1_Sept.mxd | 4/8/2016 1:40:27 PM

Fairchild Drive
HIGHWAY 101
Evandale Drive
Devonshire
Murlagen
Walker Drive
Hetch Hetchy Aqueduct
National Avenue

11B2
27.45

148B2
28.04

RW-7(B2)
25.67

RW-9(B2) (3.7)
-29.47*

RW-5(B2)
NM

113B2
24.63

RW-4(B2) (2.3)
19.50*

10B2
33.69

RW-3(B2)
33.62

118B2
32.75

24
25
26
27
28
29
30
31
32
33
34
35

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, 2016a).

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

RW-9(B2) (3.7) Well ID (Pumping Rate)
-29.47* 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.)
NM - Not Measured

Note:
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

N

150 75 0 150 Feet

B2 Zone Groundwater Contours and Estimated Capture Zones 19 March 2015

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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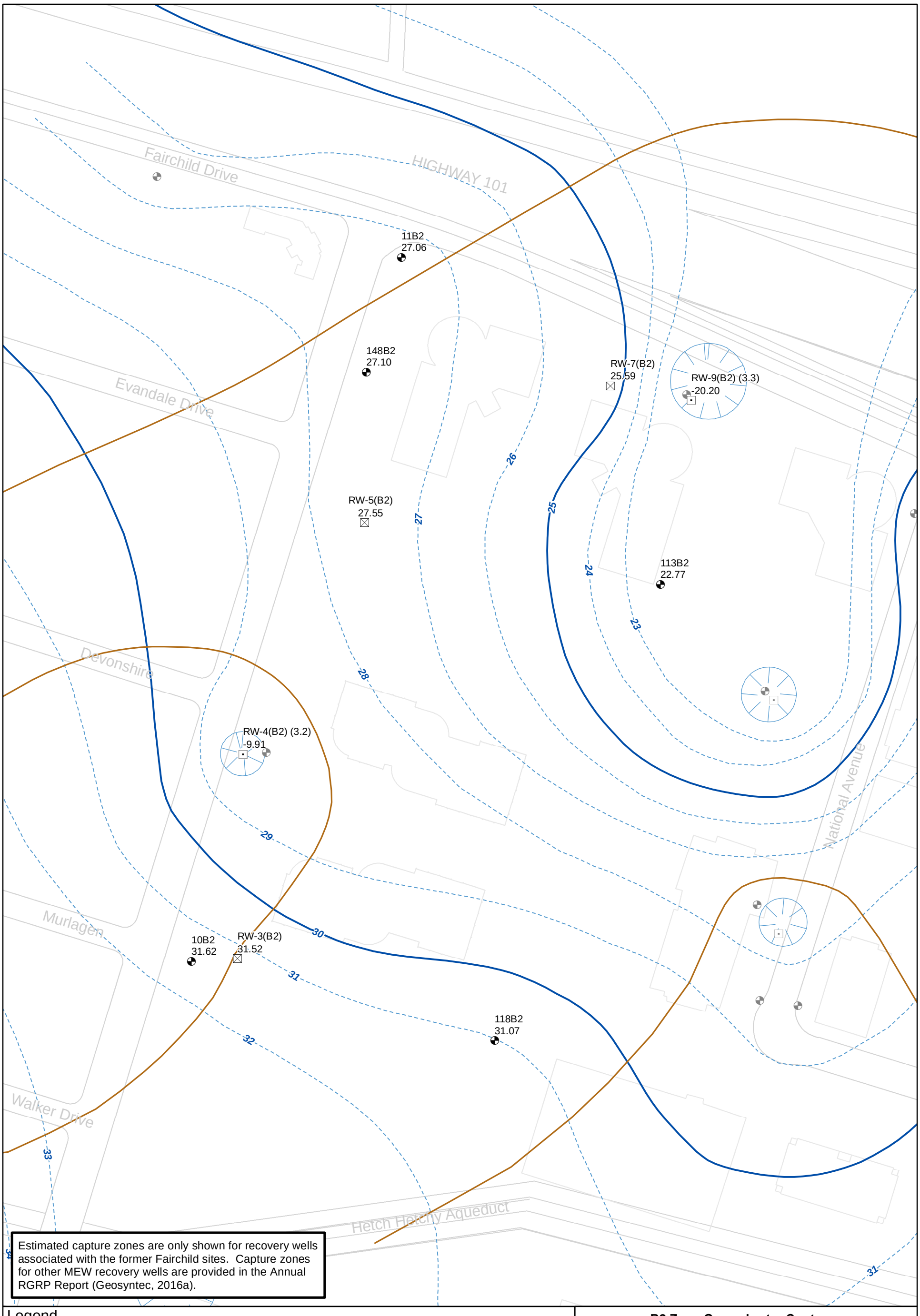
Figure 12a

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig12a_GW_B2_Mar.mxd | 4/8/2016 1:41:13 PM



Legend

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

RW-9(B2) (3.3) Well ID (Pumping Rate)
-20.20 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.)

N

150 75 0 150 Feet

Note:
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

B2 Zone Groundwater Contours and Estimated Capture Zones 17 September 2015

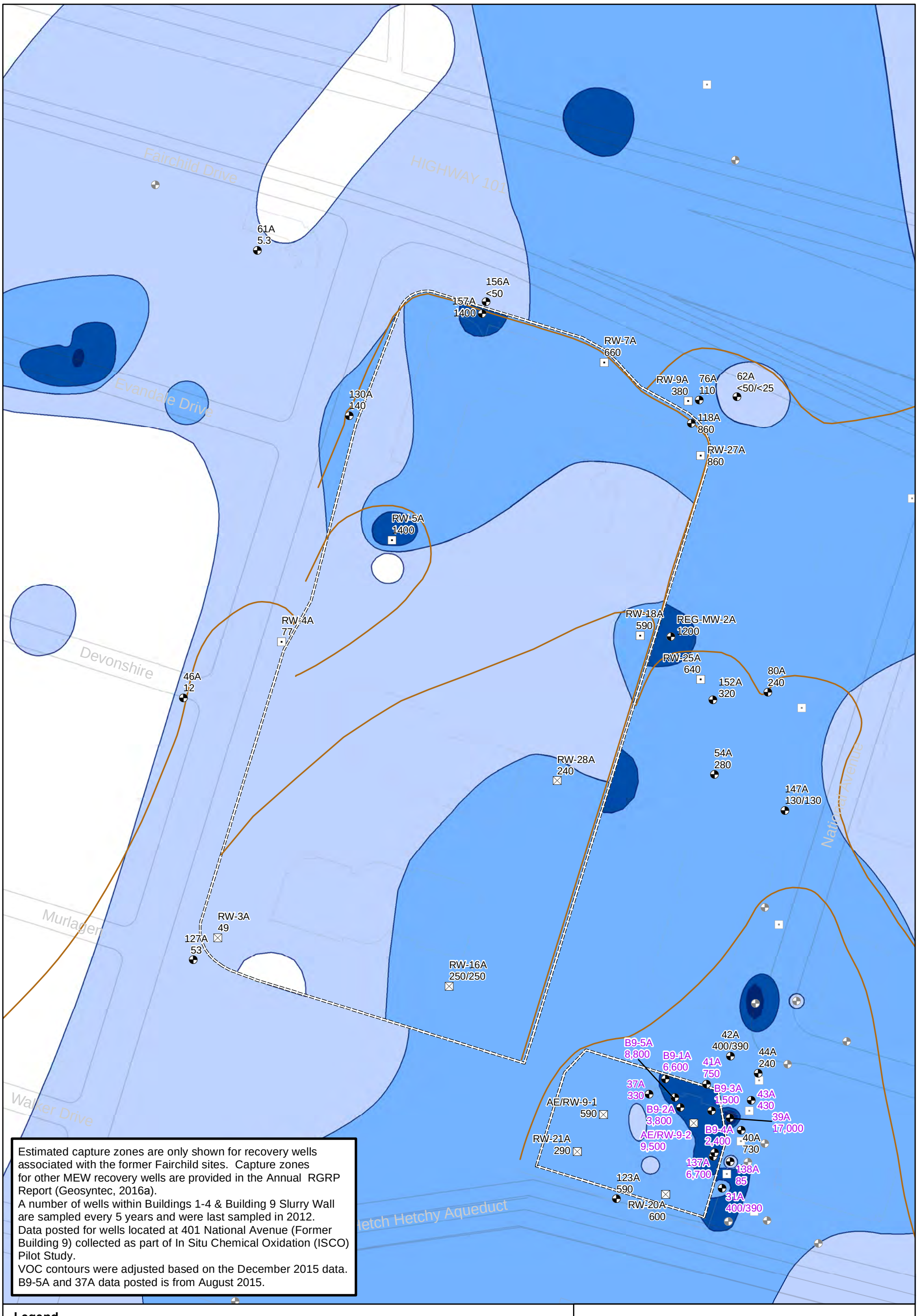
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **12b**

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\Fig12b_GW_B2_Sept.mxd | 4/8/2016 1:42:03 PM



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, 2016a).
A number of wells within Buildings 1-4 & Building 9 Slurry Wall are sampled every 5 years and were last sampled in 2012.
Data posted for wells located at 401 National Avenue (Former Building 9) collected as part of In Situ Chemical Oxidation (ISCO) Pilot Study.
VOC contours were adjusted based on the December 2015 data.
B9-5A and 37A data posted is from August 2015.

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- B9-4A 2,400 — 2015 Data

TCE Concentration (2014)

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

- Estimated Capture zone (2015)
- ==== Slurry Wall
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 A Zone TCE Concentrations and March 2015 Estimated Capture Zones

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

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Figure 13a

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\Temp_Fig13a_TCE_A_Sept_CZ.mxd | 4/8/2016 1:46:54 PM

Fairchild Drive
HIGHWAY 101
Evandale Drive
Devonshire
Murlagen
Walker Drive
National Avenue
Hetch Hetchy Aqueduct

61A
<0.50
156A
1400
157A
2500
RW-7A
730
RW-9A
170
76A
17
62A
4900/4500
130A
13
118A
420
RW-27A
830
RW-5A
1000
RW-4A
56
RW-18A
950
REG-MW-2A
1100
RW-25A
290
152A
190
80A
210
46A
<0.50
RW-28A
540
54A
110
147A
11/11
RW-3A
4.3
127A
4.0
RW-16A
280/280
42A
57/81
44A
24
B9-5A
2,500
B9-1A
1,300
41A
370
37A
270
AE/RW-9-1
730
B9-3A
370
43A
260
B9-2A
580
39A
21,000
RW-21A
280
AE/RW-9-2
4,800
B9-4A
3,900
40A
190
137A
15,000
138A
2,400
123A
360
31A
550/550
RW-20A
680

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, 2016a).
A number of wells within Buildings 1-4 & Building 9 Slurry Wall are sampled every 5 years and were last sampled in 2012.
Data posted for wells located at 401 National Avenue (Former Building 9) collected as part of In Situ Chemical Oxidation (ISCO) Pilot Study.
VOC contours were adjusted based on the December 2015 data.
B9-5A and 37A data posted is from August 2015.

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- B9-4A 3,900 — 2015 Data

cDCE Concentration (2014)

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

- Estimated Capture zone (2015)
- ==== Slurry Wall
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 A Zone cDCE Concentrations and March 2015 Estimated Capture Zones

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 13b

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\Temp_Fig13b_DCE_A_Sept_CZ.mxd | 4/8/2016 1:45:39 PM

Fairchild Drive
HIGHWAY 101
Evandale Drive
Devonshire
Murlagen
Walker Drive
Hetch Hetchy Aqueduct
National Avenue

61A <0.50
156A 0.64
157A 2.5
RW-7A 3.3
130A 0.57
RW-9A <5.0
76A <0.50
62A <50/<25
118A 1.3
RW-27A 5.1
RW-5A 14
RW-4A 1.2
RW-18A 5.2
REG-MW-2A 21
RW-25A 3.9
80A 0.57
152A 2.9
46A <0.50
RW-28A <2.5
54A 1.0
147A <0.50/<0.50
RW-3A <0.50
127A <0.50
RW-16A <2.5/<2.5
42A 0.83/0.80
B9-5A <50
B9-1A 3.8
41A <5.0
44A <0.50
AE/RW-9-1 20
37A 18
B9-3A <25
43A 14
B9-2A <50
39A 910
RW-21A 2.3
AE/RW-9-2 110
B9-4A <50
40A 1.1
137A 120
138A 86
123A 1.7
RW-20A 7.6
31A 5.0/4.8

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, 2016a).
A number of wells within Buildings 1-4 & Building 9 Slurry Wall are sampled every 5 years and were last sampled in 2012.
Data posted for wells located at 401 National Avenue (Former Building 9) collected as part of In Situ Chemical Oxidation (ISCO) Pilot Study.
VOC contours were adjusted based on the December 2015 data.
B9-5A and 37A data posted is from August 2015.

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- B9-4A <50 — 2015 Data

VC Concentration (2014)

- 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 (2015)
- Slurry Wall
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 A Zone VC Concentrations and March 2015 Estimated Capture Zones

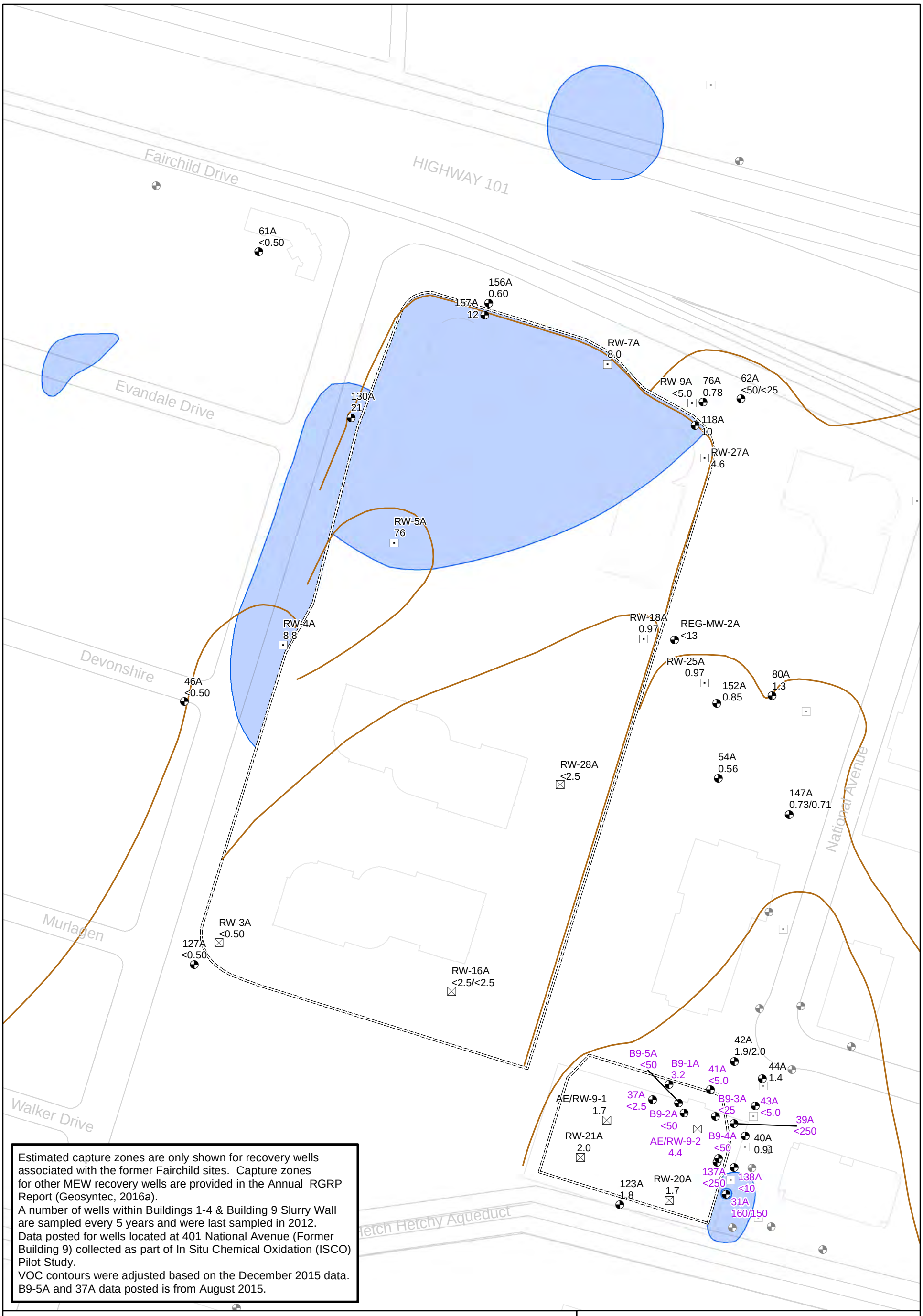
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 13c

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\Temp_Fig13c_VC_A_Sept_CZ.mxd | 4/8/2016 1:47:34 PM



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, 2016a).
A number of wells within Buildings 1-4 & Building 9 Slurry Wall are sampled every 5 years and were last sampled in 2012.
Data posted for wells located at 401 National Avenue (Former Building 9) collected as part of In Situ Chemical Oxidation (ISCO) Pilot Study.
VOC contours were adjusted based on the December 2015 data.
B9-5A and 37A data posted is from August 2015.

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off
- B9-4A <50 — 2015 Data

PCE Concentration (2014)

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

- Estimated Capture zone (2015)
- ==== Slurry Wall
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 A Zone PCE Concentrations and March 2015 Estimated Capture Zones

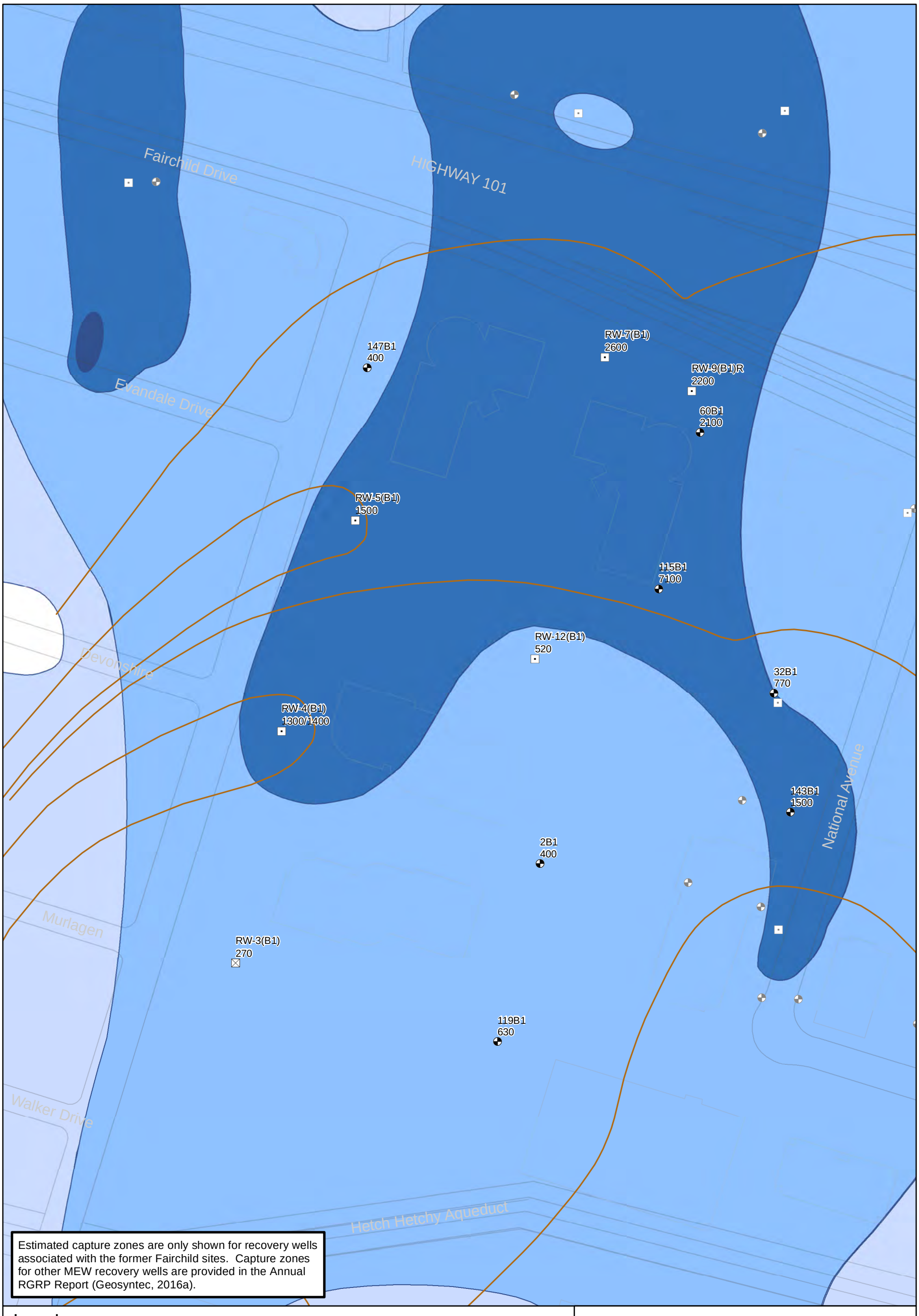
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 13d

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\Temp_Fig13d_PCE_A_Sept_CZ.mxd | 4/8/2016 1:46:17 PM



2014 B1 Zone TCE Concentrations and March 2015 Estimated Capture Zones

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Notes:
TCE = Trichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for TCE in 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

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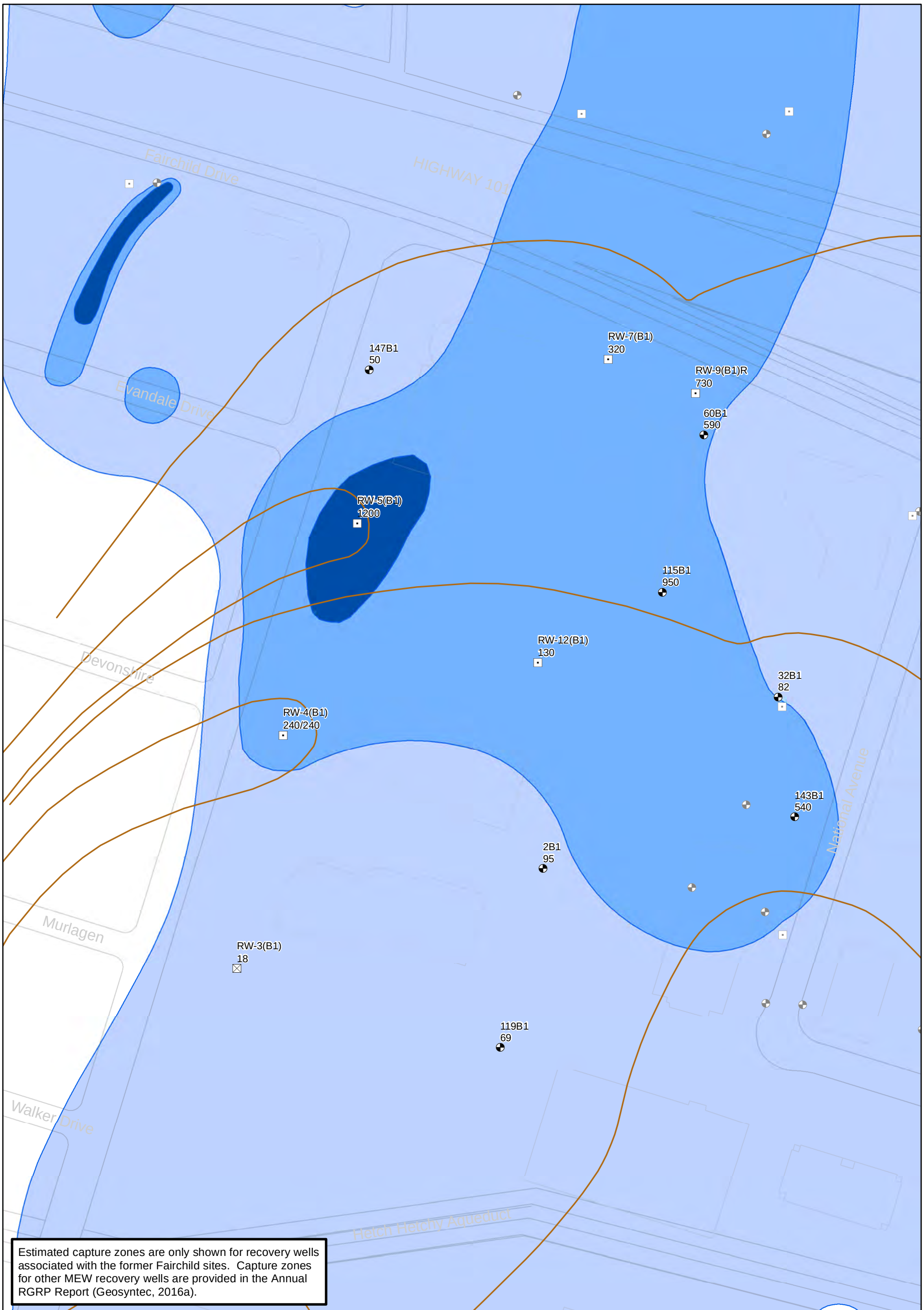
Figure 14a

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig14a_TCE_B1_March_CZ - Copy.mxd | 4/8/2016 1:50:25 PM



Notes:
cDCE = cis-1,2-Dichloroethene
ug/L = micrograms per liter
Figure shows only those wells sampled and analyzed for cDCE in 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 B1 Zone cDCE Concentrations and March 2015 Estimated Capture Zones

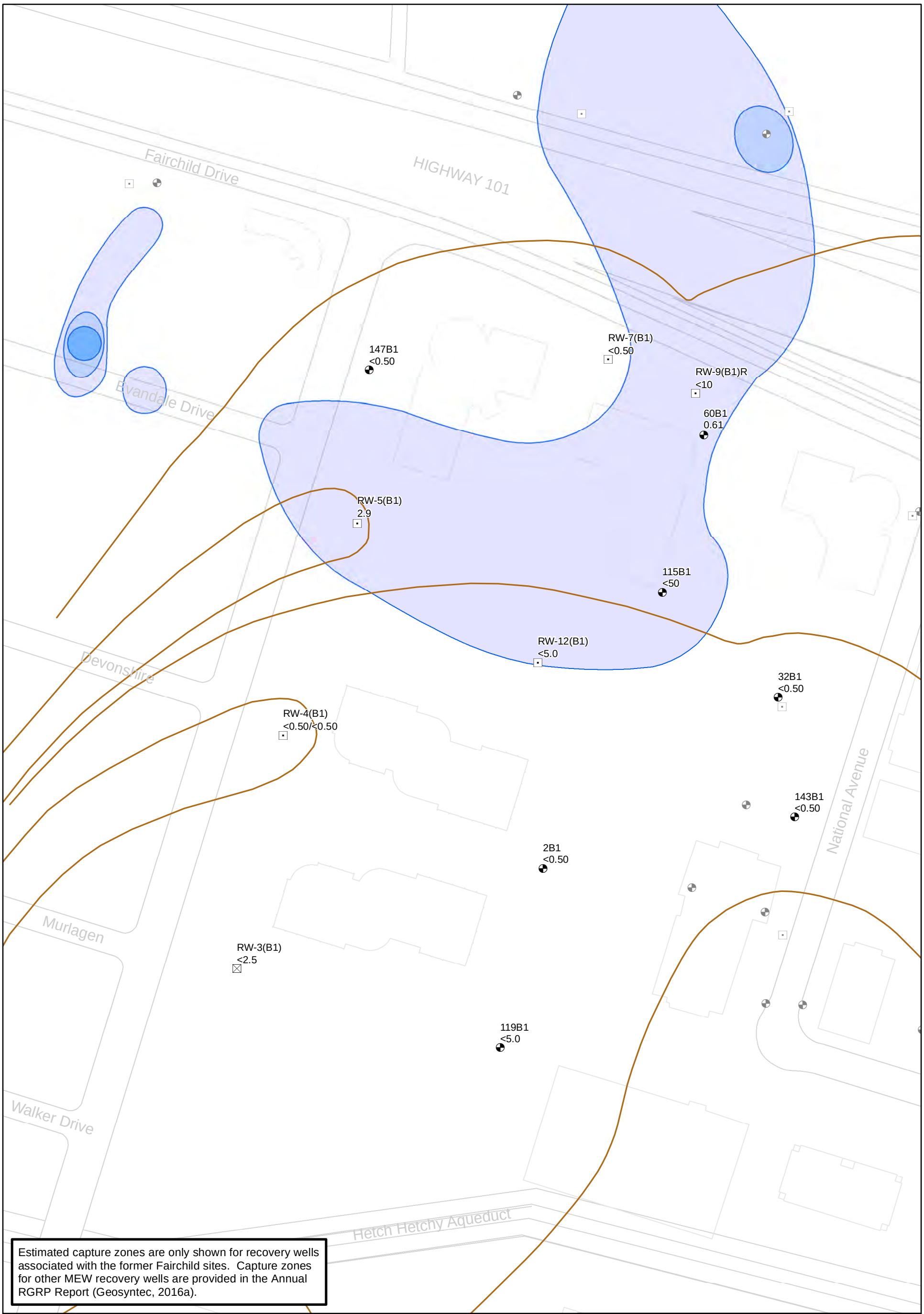
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 14b

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig14b_DCE_B1_March_CZ - Copy.mxd | 4/8/2016 1:48:16 PM



2014 B1 Zone VC Concentrations and March 2015 Estimated Capture Zones

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 14c

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig14c_VC_B1_March_CZ - Copy.mxd | 4/8/2016 1:48:58 PM

Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

PCE Concentration

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

- Estimated Capture zone
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 B1 Zone PCE Concentrations and March 2015 Estimated Capture Zones

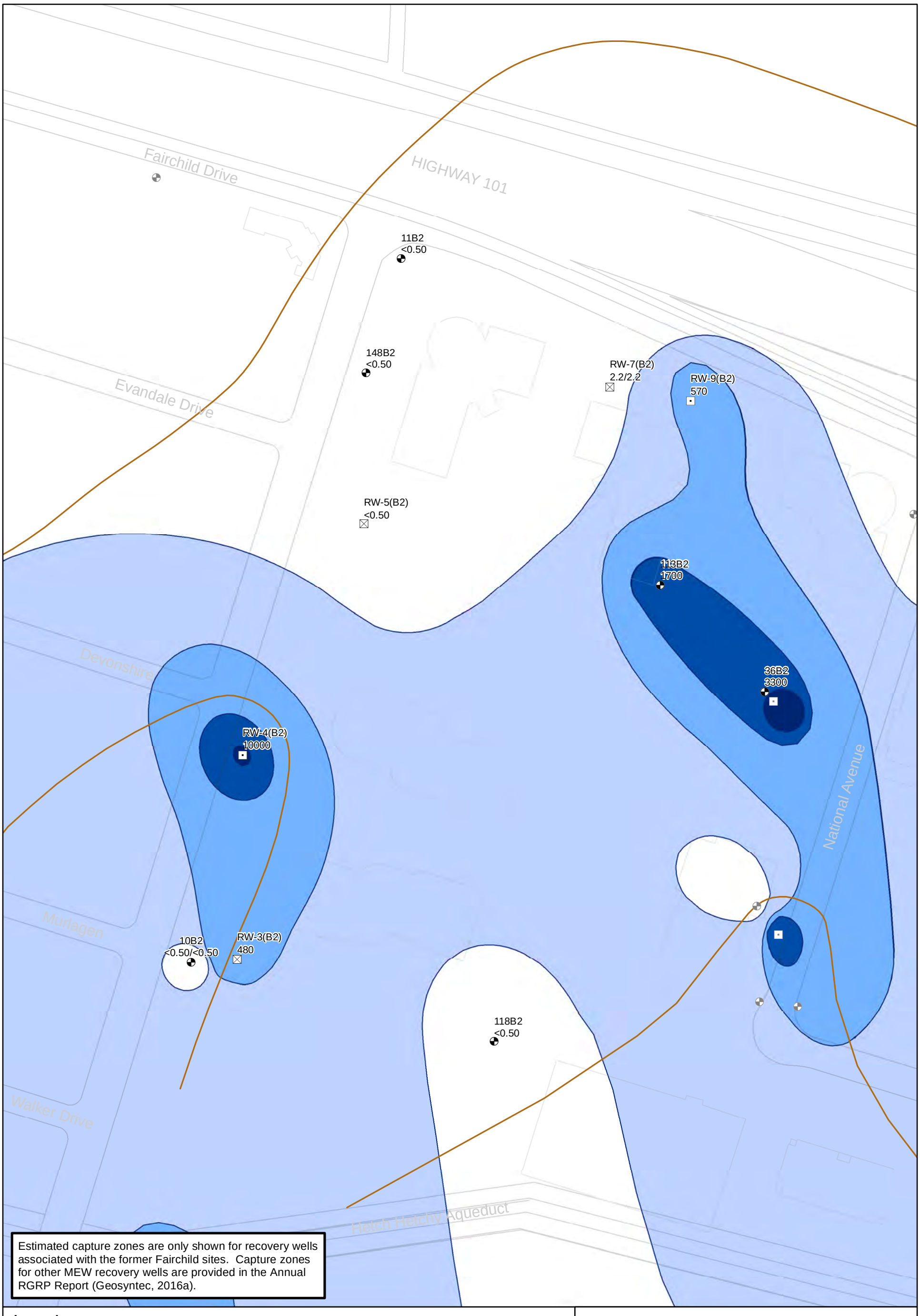
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 14d

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig14d_PCE_B1_March_CZ - Copy.mxd | 4/8/2016 1:51:09 PM



Legend

- Monitoring Well
- Recovery Well On
- Recovery Well Off

TCE Concentration

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

- Estimated Capture zone
- Building
- Road

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 2014.
Wells not associated with the Former Fairchild Buildings 1-4, 9, or 18 Sites are shown in gray.

2014 B2 Zone TCE Concentrations and March 2015 Estimated Capture Zones

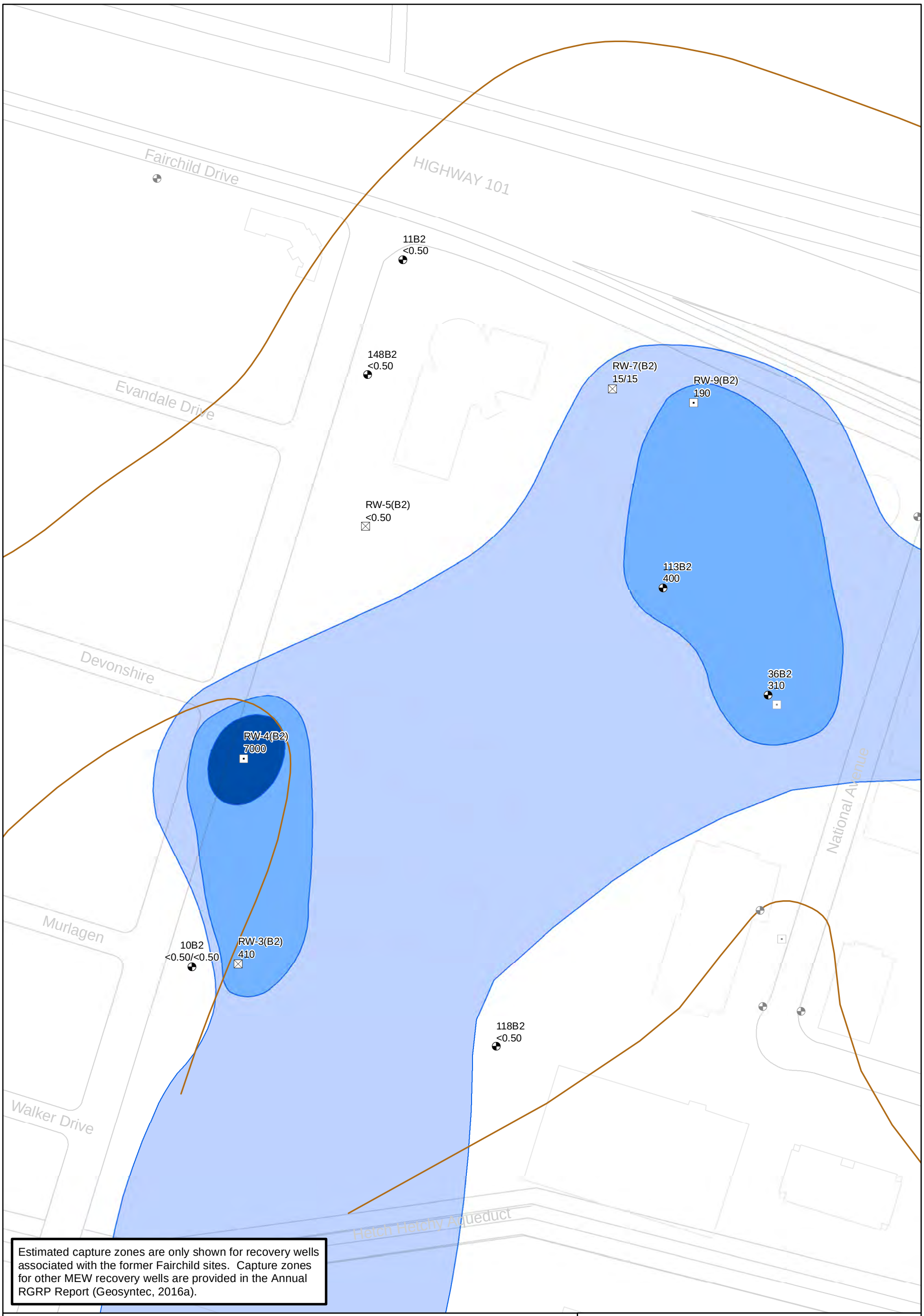
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 15a

\\Oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig15a_TCE_B2_March_CZ - Copy.mxd | 4/8/2016 1:49:42 PM



2014 B2 Zone cDCE Concentrations and March 2015 Estimated Capture Zones

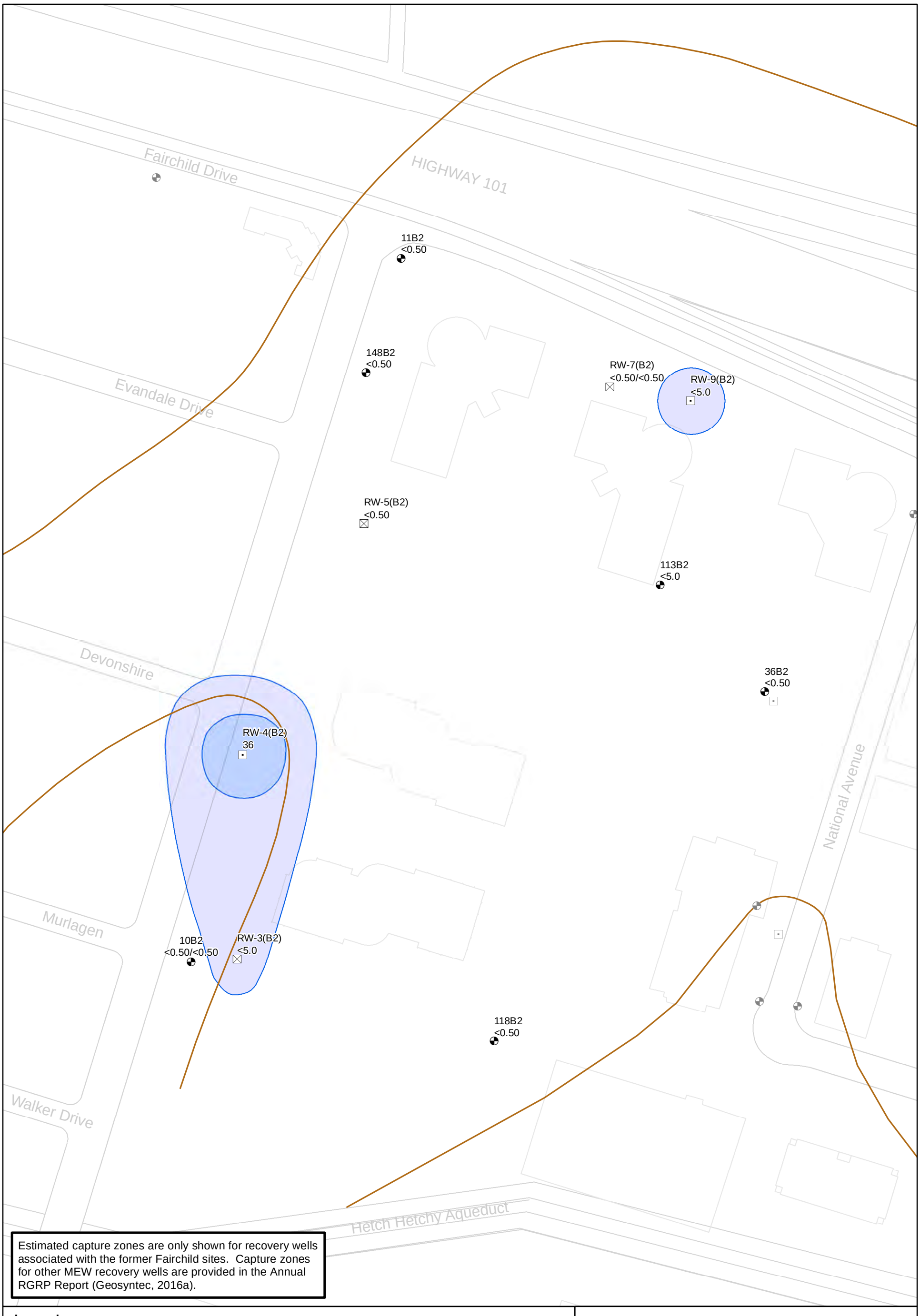
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 15b

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig15b_DCE_B2_March_CZ - Copy.mxd | 4/8/2016 1:51:50 PM



2014 B2 Zone VC Concentrations and March 2015 Estimated Capture Zones

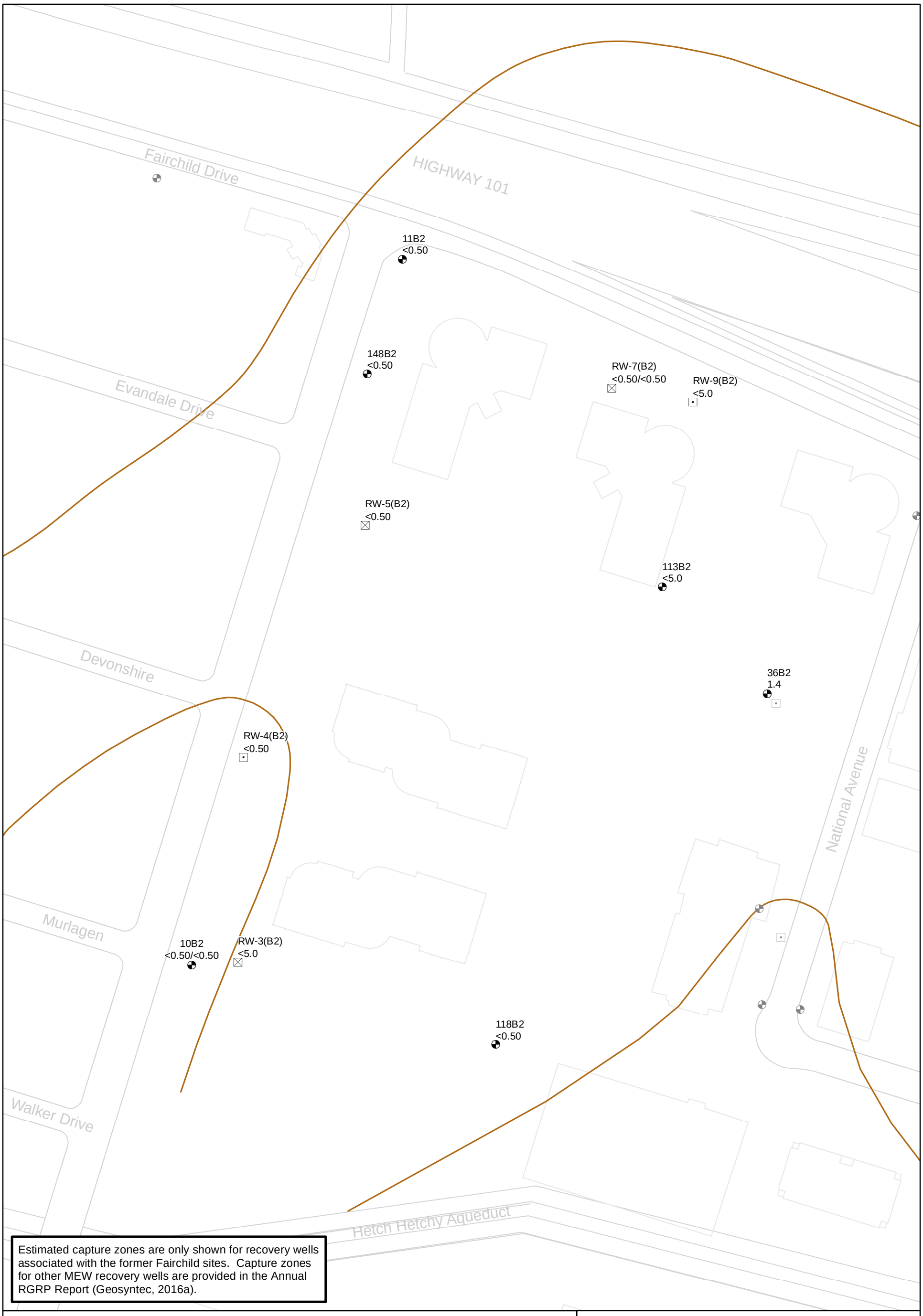
MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 15c

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig15c_VC_B2_March_CZ - Copy.mxd | 4/8/2016 1:52:30 PM



2014 B2 Zone PCE Concentrations and March 2015 Estimated Capture Zones

MEW Former Fairchild Buildings 1-4, 9, & 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 15d

\\oakland-01\data\GIS\MEW\Project\Fairchild\2015_AR\Building1-4,9,18\TEMP_MARCH_CZFIGS\TEMP_Fig15d_PCE_B2_March_CZ - Copy.mxd | 4/8/2016 1:45:03 PM

APPENDIX A

2015 Annual Report Remedy Performance Checklist

2015 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) 600 National (former Bldg. 9, formerly 401 National). 331 Fairchild Drive (former Bldg. 18, formerly 644 National Avenue) 464 Ellis Street (former Bldg. 20 and 20A; this includes buildings located at 466 and 468 Ellis Street)	
Checklist completion date: March 2016	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 – 13 SCRWs and 1 RGRP well.

Building 9 – 4 SCRWs.

Building 18 – 1 SCRW and 3 RGRP wells.

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 liquid phase GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.
- On 12 November 2015, System 1 was shut down following realignment of the piping network from System 1 to allow discharge of groundwater to the RGRP South of 101 Treatment System. Discussion and additional details are provided in the 2015 Annual Progress Report for the RGRP (Geosyntec, 2016a) and the Annual Progress Report for Former Fairchild Buildings 1-4, 9 and 18 (Geosyntec, 2016b).

System 3 (treats water from Buildings 1-4)

- Three 5,000-pound liquid phase GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.
- On 12 November 2015, System 3 was shut down following realignment of the piping network from System 3 to allow discharge of groundwater to the RGRP South of 101 Treatment System. Discussion and additional details are provided in the 2015 Annual Progress Report for the RGRP (Geosyntec, 2016a) and the Annual Progress Report for Former Fairchild Buildings 1-4, 9 and 18 (Geosyntec, 2016b).

Consolidated RGRP South of 101 Treatment System

- Three 10,000-pound liquid phase GAC vessels in series, one 4,000-gallon atmospheric tank, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.
- On 12 November 2015, flows from System 1 and System 3 were redirected to the consolidated RGRP South of 101 Treatment System and future discharges of groundwater from those systems will be treated at the South of 101 Treatment System (Geosyntec, 2016b). Discussion and additional details are provided

in the 2015 Annual Progress Report for the RGRP (Geosyntec, 2016a) and the Annual Progress Report for Former Fairchild Buildings 1-4, 9 and 18 (Geosyntec, 2016b).

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.

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	Eric Suchomel Geosyntec Consultants	510/285-2786	esuchomel@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.

2015 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:

- Treatment System 19 had a vinyl chloride effluent exceedance in November 2015 (Weiss, 2016a). The effluent sample collected on 24 November 2015 contained vinyl chloride at a concentration of 0.68 µg/L, (effluent limitation is 0.5 µg/L), and a confirmation sample collected on 9 December 2015 contained vinyl chloride at a concentration of 0.90 µg/L. Following confirmation of the exceedance, the Water Board was notified in accordance with permit requirements and the system was temporarily shut down on 9 December 2015 while a carbon change out was scheduled. The carbon change out was completed on 16 December 2015 and the system was restarted on 17 December 2015. Vinyl chloride was not detected in the effluent sample collected on 17 December 2015 following system restart (Weiss, 2016a).
- Remedy optimization at the former Building 9 site included the implementation of an ongoing in situ chemical oxidation (ISCO) pilot study. As part of pilot study, the four SCRWs located within the Building 9 slurry wall were shut down in February 2015 with EPA approval. In 2015, two rounds of ISCO injections and associated monitoring were completed inside the Building 9 slurry wall boundary. The ISCO pilot study is being conducted in accordance with the Final Work Plan for In Situ Chemical Oxidation Pilot Study (Work Plan; Geosyntec, 2014c) and Addendum (Geosyntec, 2015a), and the Notification of Second Injection Event, In Situ Chemical Oxidation Pilot Study letter (Geosyntec, 2015e). The ongoing pilot study is evaluating the effectiveness of injecting oxidant into the subsurface to reduce the concentration of volatile organic compounds (VOCs) in groundwater. A third ISCO injection is planned for spring 2016. An implementation report summarizing the ISCO pilot study results through the third injection event and presenting recommendations for future pilot study activities will be submitted to EPA in 2016 following the third ISCO injection.
- Beginning in November 2015, groundwater extracted from the Buildings 1-4, 9, and 18 Sites is being treated at the upgraded RGRP South of 101 GETS. Electrical distribution and controls for wells associated with Systems 1 and 3 extraction networks remain at the System 1 and System 3 enclosures. Current groundwater extraction and treatment components for the consolidated RGRP South of 101 GETS are

described in the 2015 Annual Progress Report for the RGRP (Geosyntec, 2016a) and the Annual Progress Report for Former Fairchild Buildings 1-4, 9 and 18 (Geosyntec, 2016b).

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:

In 2013 the 401 National Avenue property (former Fairchild Building 9) was purchased by National Avenue Partners, LLC and in May 2014 redevelopment of 401 National was approved by the City of Mountain View in conjunction with three properties to the north. Redevelopment activities include the construction of a two-story parking garage over most of the former 401 National Avenue property and construction of a four story office building to the north. The former Building 9 was demolished in November 2014 as part of redevelopment activities. Construction of the parking garage began in 2015 and is expected to be completed in 2016.

The existing treatment systems and their components (conveyance piping, extraction wells, and monitoring wells) are being 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	2015 Annual Fairchild Building Reports (Geosyntec, 2016b, c) and the 2015 Annual Regional Report (Geosyntec, 2016a)

☑ 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 (Weiss, 2016a-c) 2015 Annual Fairchild Building Reports (Geosyntec, 2016b, c)

☑ 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 (Weiss, 2016a-c)

☑ The system is in compliance with discharge permits.

Slurry Wall Data

2015 Annual Report Remedy Performance Checklist

List the types of data that are available:	What is the source report?
Water level elevations in select well pairs	2015 Annual Fairchild Reports (Geosyntec, 2016b, c)
Analysis of inward and upward hydraulic gradients	

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 four SCRWs located inside of the slurry wall at the Building 9 site (AE/RW-9-1, AE/RW-9-2, RW-20A, and RW-21A) were turned off in February 2015 with EPA approval as part of the ongoing ISCO pilot study These wells will remain off until the completion of the pilot study, which may change slurry wall gradients. While the ISCO pilot study is ongoing at the former Fairchild Building 9 site, hydraulic capture will be maintained through the operation of the downgradient shared source recovery wells (Shared SCRWs) (GSF-1A, GSF-1B1 and GSF-1B2) (Geosyntec, 2016b).

The chemical concentration data from 2014 and potentiometric surface contours from 2015 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

IX. AIR MONITORING/VAPOR INTRUSION PATHWAY EVALUATION (Include in Annual Progress Report and reference document)

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 2015. In accordance with the Statement of Work for the Vapor Intrusion ROD Amendment (VI SOW), an annual report summarizing the status of the vapor intrusion remedy will be submitted under separate cover (Geosyntec, 2016d).

Summary of Activities: Operations, maintenance, and monitoring (OM&M) activities were performed for the sub-slab depressurization (SSD) systems installed in the buildings located at the 369, 379, 389, and 399 North Whisman Road properties in accordance with the OM&M Plans (Geosyntec, 2013b and Geosyntec, 2014a). No VI investigation activities were conducted in 2015. Additional information is provided in the VI Annual Report (Geosyntec, 2016d).

Problems Encountered: The building tiering process could not be completed in 2015 due to EPA's delay in completion of its review and approval of the Revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering, Middlefield-Ellis-Whisman Area and Moffett Field, California ([Revised Tiering Work Plan]; H&A, 2013), which was submitted to EPA on 22 March 2013. Upon approval of the Revised Tiering Work Plan by EPA, it is expected that implementation of the VI tiering will begin.

Recommendations/Next Steps: Continue ongoing operation, maintenance, and monitoring programs for SSD systems installed in the buildings located at 369, 379, 389, and 399 North Whisman Road, in accordance with the OM&M Plans (Geosyntec, 2013b and Geosyntec, 2014a). Upon receipt of EPA's approval of the Revised Tiering Work Plan (H&A, 2013), evaluate the potential for vapor intrusion in buildings where follow-up sampling is needed, and tier all former Fairchild facilities in accordance with the tiers established in the VI ROD Amendment.

Schedule: Ongoing operation, maintenance, and monitoring programs for SSD systems installed in the buildings located at 369, 379, 389, and 399 North Whisman Road will be conducted in accordance with schedules set forth in the OM&M Plans for these systems. 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, 2016d).

X. REMEDY PERFORMANCE ASSESSMENT

2015 Annual Report Remedy Performance Checklist

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 Systems are reliable and consistent in their 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

Site-wide VOC monitoring data was last collected in 2014, consistent with EPA's 16 March 2016 conditional approval of a trial reduction of groundwater monitoring and sampling frequency at the MEW study area (EPA, 2016). The next groundwater sampling event will occur in fall 2016, and the effectiveness of biennial VOC monitoring will be evaluated as part of the 2016 Annual Progress Report. Based on the VOC data collected in 2014, concentrations within TCE plume were evaluated using Mann-Kendall trend analysis and reviewing VOC concentrations over time. The analyses show that TCE concentrations in the majority of monitoring wells have 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 2016b, c).

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, the southern part of 600 National Avenue (formerly 401 National Avenue), 515/545 N. Whisman Road and 313 Fairchild Drive.

Groundwater elevation monitoring from 2015 and chemical monitoring results from 2014 demonstrate that the operating Fairchild extraction wells and Shared SCRWs 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 are 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 Zone to A Zone, but downward vertical gradients are observed at a few locations where caused by extraction in deeper zones. Gradients in 2015 across the Former building 13, 19, 23 and 1-4, 9, 18 Sites were generally consistent with historical observations, with the exception of gradients near the former Building 9 site. Gradients shifted in this area due to the shutdown of four former Building 9 extraction wells as part of ongoing ISCO pilot study activities.

Source document reference: 2015 Annual Fairchild Building Reports (Geosyntec, 2016b,c)
2015 Annual Regional Report (Geosyntec, 2016a)
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 2015 Fairchild Building and RGRP Annual Progress Reports indicate containment of target capture areas (Geosyntec, 2016a-c).

XI. PROJECTIONS

Administrative Issues
Dates of next monitoring and sampling events for next annual reporting period: September/October 2016

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

Remedy Projections for the upcoming year (2016)
☑ 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: 2016

In 2016, monitoring wells will be gauged annually, concurrent with the September/October 2016 sampling event (EPA, 2016).

Elaborate on Remedy Projections:

EPA has requested that the MEW parties work to optimize performance of the groundwater remedy with respect to mass removal. An ISCO Pilot Study is being implemented at the former Fairchild Building 9 site to assess the ability of oxidant injections to increase the rate of VOC mass removal at that site. The Pilot Study will continue

through 2016, and a report summarizing the pilot study implementation will be submitted to EPA in 2016 following a third injection event.

A Pilot Study Work Plan for Enhanced Groundwater Extraction for former Fairchild Building 19 Site was submitted to EPA on 30 June 2015 (Geosyntec, 2015c). Although EPA has not commented on the work plan, Schlumberger has elected to proceed with work plan implementation. Optimization activities were implemented in December 2015 and will continue through 2016, with a summary of 2016 activities provided in the 2016 Annual Progress Report for the Site.

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: 2016

Elaborate on Remedy Projections: EPA has requested that the MEW parties work to optimize performance of the groundwater remedy with respect to mass removal. Optimization programs for the former Fairchild Buildings 1-4, Building 18, and Building 19 sites are expected to include adjustments to the groundwater extraction remedies to increase the rate of VOC mass removal. The former Fairchild Building 19 site will be the first of the Fairchild sites evaluated for extraction well network optimization.

A Pilot Study Work Plan for Enhanced Groundwater Extraction was submitted to EPA on 30 June, 2015 (Geosyntec, 2015c) and Schlumberger has elected to proactively move forward with work plan implementation. The first phase of pilot study work was completed in December 2015 and included redevelopment of SCRWs 71A, RW-11A, RW-12A, and RW-26A between 19 and 23 December 2015, and baseline sampling of the optimization network and treatment system on 28 December 2015. Implementation of the pilot study scope of work will continue in 2016, including modification of the extraction rates to potentially increase VOC mass removal and monitoring of VOC concentrations at the SCRWs following flow rate modification. In accordance with the Work Plan, pilot study progress will be reported to the EPA in quarterly email updates through 2016 and summarized in the 2016 Annual Progress Report for the Site.

Remedy optimization at the former Building 9 site includes implementation of an ongoing ISCO pilot study. In 2015, two rounds of ISCO injections and associated monitoring were completed inside the Building 9 slurry wall boundary. The ISCO pilot study is being conducted in accordance with the Final Work Plan for In Situ Chemical Oxidation Pilot Study (Work Plan; Geosyntec, 2014c) and Addendum (Geosyntec, 2015a), and the Notification of Second Injection Event, In Situ Chemical Oxidation Pilot Study letter (Geosyntec, 2015e).[1] The ongoing pilot study is evaluating the effectiveness of injecting oxidant into the subsurface to reduce the concentration of VOCs in groundwater. A third ISCO injection is planned for spring 2016. An implementation report summarizing the ISCO pilot study results through the third injection event and presenting recommendations for future pilot study activities will be submitted to EPA in 2016 following the third ISCO injection.

[1] EPA conditionally approved the Work Plan on 2 January 2015 (EPA, 2015a). EPA approved the addendum on 30 January 2015 (EPA, 2015b). EPA concurred with the notification letter in an email dated 13 November 2015 (EPA, 2015d).

2015 Annual Report Remedy Performance Checklist

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: Elaborate below. Target date:

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: Elaborate below. Target date:

Elaborate on Remedy Projections:

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.

In 2016, an ISCO pilot study will continue to be implemented at the former Fairchild Building 9 site and a pilot study for enhanced groundwater extraction will continue to be implemented at the former Fairchild Building 19 site.

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:

Date of Next EPA Five-Year Review: September 2019

XIII. RECOMMENDATIONS

The reductions in groundwater gauging and sampling frequency that were requested in February 2015 will be evaluated as part of the 2016 Annual Progress Report. Groundwater elevations measurements in 2016 will only be collected in September in order to evaluate a potential reduction in gauging from a semi-annual to annual basis. Groundwater samples will be collect in September 2016 and compared to the 2014 sampling results to evaluate a potential reduction in sampling from an annual to biennial basis. Based on the analyses previously presented in the Request for Reduction in Groundwater Monitoring Frequency (Geosyntec, 2015b), it is anticipated that the evaluation will conclude that monitoring at a reduced frequency is adequate to demonstrate remedy effectiveness.

REFERENCES

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APPENDIX B

Laboratory Analytical Reports and Chain-of-Custody Documents, January through December 2015

(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, PhD, PE
Geosyntec Consultants

FROM: Trish Eliasson, PE
Weiss Associates

DATE: March 29, 2016

RE: **2015 DATA QUALITY ASSURANCE/QUALITY CONTROL SUMMARY**
RGRP and Fairchild
Middlefield-Ellis-Whisman Study Area
Mountain View, California

This memorandum summarizes Weiss Associates' (Weiss) review of data quality for water samples collected in 2015 for the Regional Groundwater Remediation Program (RGRP) and former Fairchild facilities in the Middlefield-Ellis-Whisman (MEW) Study Area. Our review was conducted in general accordance with the MEW Quality Assurance Project Plan (QAPP)[1] and United States Environmental Protection Agency (USEPA) data review guidelines.[2,3] The data reviewed herein include field and laboratory data quality assurance and quality control (QA/QC) results for the following events.

- Two quarterly sampling events of six newly installed monitoring wells located North of 101 as part of the RGRP.
- Four quarterly sampling events of three newly installed monitoring wells located near Evandale Avenue as part of the RGRP.
- One semi-annual sampling event of monitoring well DW3-219 in May, 2015.
- Monthly water sampling at the RGRP North-101 (N101) and South-101 (S101) treatment systems and Fairchild treatment systems 1, 3, and 19. As required by the discharge permit, triennial metals sampling was conducted at the treatment systems in November 2015.[4]

No annual sampling was conducted for RGRP or Fairchild facility wells in 2015. In a letter dated February 13, 2015, Geosyntec requested that the USEPA reduce the frequency of groundwater gauging and monitoring to once every two years.[5] The USEPA provided written approval on

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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-14-002, August 2014.

[3] *National Functional Guidelines for Inorganic Superfund Methods Data Review,* prepared by the USEPA Contract Laboratory Program, OSWER 9240.1-51 USEPA-540-R-13-001, August 2014.

[4] Monthly sampling at Systems 1 and 3 in November and December and triennial metals sampling at the same systems was not conducted due to consolidation of flow to S101.

[5] *Request for Reduction in Groundwater Monitoring Frequency. Middlefield-Ellis-Whisman Study Area, Mountain View, California,* letter report prepared by Geosyntec Consultants, February 13, 2015.

March 16, 2016 for trial reductions in groundwater gauging frequency from semi-annually to annually and groundwater monitoring frequency from annually to once every two years.[6]

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 sampling method and 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 (e.g., bladder pumps used at monitoring wells for low-flow sampling) may be causing cross-contamination between sample locations. The blanks consist of distilled/organic-free water collected from a final rinse of sampling equipment after the decontamination procedure has been performed or before sampling equipment is deployed. Rinseate blank sampling is not necessary for locations that have dedicated sample collection, such as at groundwater extraction and treatment system (GWETS) sample ports. Rinseate samples are specified at a frequency of 1 for every 20 (5%) field samples.

Field blank – Field blanks are collected to assess if the source water used on-site for decontamination may affect the samples. The decontamination source water is distilled 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 introduce volatile organic compounds (VOCs). These samples consist of volatile organic analysis vials (VOAs) filled with distilled/organic-free water and preserved with hydrochloric acid. These pre-filled VOAs are supplied by the laboratory and accompany the other samples in the field and to the laboratory. One trip blank accompanies each 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 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.

[6] USEPA, 2016. *EPA Conditional Approval – Trial Reduction of Groundwater Monitoring Frequency, Middlefield-Ellis-Whisman (MEW) Superfund Area, Mountain View and Moffett Field, California.* March 16.

A Level 4 data validation review was not performed because annual sampling was not conducted in 2015 as part of the USEPA-approved trial evaluation of reduction in groundwater monitoring frequency.

REVIEW FINDINGS

Well Sampling

This section summarizes well sampling results from the quarterly and semi-annual events.

Field Sampling Data

A total of 10 groundwater monitoring and extraction wells were sampled during 2015 quarterly and semi-annual events, resulting in 25 primary samples. The total number of primary analyses and QA/QC samples for each laboratory test method are summarized in Table 1.

Weiss checked all chain-of-custody forms for completeness and accuracy before the samples were transported to the laboratory. The laboratory reported no sample quality concerns that resulted in qualified data. Temperatures in the sample coolers were acceptable for sample preservation, no significant headspace volumes were observed in the VOAs, and sample containers were properly preserved.

A total of 10 sample results were "J" qualified during the validation process. A J-qualifier, as defined by the USEPA, applies when an analyte is positively identified and the associated numerical value is qualified as an estimated concentration of the analyte in the sample. A “J” flag was applied to the 10 sample results because each result was between the method detection limit (MDL) and the reporting limit.

Field Duplicates. Field duplicates were collected for VOCs during each quarterly sampling event (Table 1). The required frequency of 1 field duplicate for every 20 field samples collected was satisfied as specified in the QAPP. Table 2 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 tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride. Table 2 shows that the RPDs for these analytes were within the respective precision acceptance limits.

Rinseate Blanks. Only disposable or dedicated equipment was used to sample each of the wells during the 2015 sampling period. Therefore, no rinseate blanks were collected.

Field Blanks. Only disposable or dedicated sampling equipment was used to sample each of the wells during the 2015 sampling period; therefore, no field blanks were collected.

Trip Blanks. A total of 6 trip blanks were analyzed for VOCs (Table 1). One blank was analyzed per shipping container with samples for VOC analysis. No VOCs were detected above reporting limits in any of the blanks.

Field Audit. Weiss performed an internal audit of sampling activities on November 11, 2015 as required by the QAPP. The audit consisted of observing sampling

activities conducted by two field technicians. 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 TestAmerica Laboratories, Inc., Pleasanton, California, which is certified by the Environmental Laboratory Accreditation Program of the California Department of Public Health for the analyses conducted.

Weiss reviewed the Level 2 QA/QC analysis results produced by the laboratory for the well sample analyses. Weiss confirmed that all samples were analyzed per the requested laboratory analyses, and all samples met the QAPP Level 2 requirements for completeness.

As part of the laboratory protocol specified in the QAPP, method blanks and laboratory control spikes (LCS) are required to be performed to verify accuracy, precision, and completeness.

Method Blanks. The required frequency for method blanks is 1 for every 20 field samples collected and the acceptance criterion is no detections above reporting limits. The required frequency and acceptance criterion were met.

Matrix Spike/Matrix Spike Duplicates. A total of 4 MS/MSD samples were analyzed for VOCs. The required frequency of 1 MS/MSD for every 20 field samples collected was met. The RPDs for all 4 MS/MSD sample pairs were below the 35% limit, and therefore met the precision goal specified in the QAPP.

Laboratory Control Spikes. As specified in the QAPP, the required frequency for LCS is 1 for every 20 field samples, and the acceptance range is 80% to 120% recovery. The required LCS frequency was met. However, the acceptance range was not met for all compounds. The acceptance criteria in the QAPP was set in 1991 and is considered out-of-date as laboratories are continually calibrating their equipment and updating their capabilities for percent recovery for each compound based on the equipment used. In accordance with the USEPA Test Method[7], it is necessary for the laboratory to develop single-laboratory performance data for accuracy and precision in the matrices of interest. The laboratory has developed their own in-house LCS recovery limits, which were used as the acceptance criteria for the 2015 data. The laboratory LCS ranges were met for all compounds.

Groundwater Extraction and Treatment System Sampling

Field Sampling Data

A total of 279 primary samples and 56 field duplicates were collected from RGRP Systems N101 and S101 and from Fairchild Systems 1, 3 and 19 throughout the year. The total number of

[7] Method 8000C, Determinative Chromatographic Separations. Revision 3. USEPA March, 2003.

primary analyses, duplicate analyses and QA/QC samples for each laboratory test method are summarized in Table 3.

The samples were collected, stored, transported, and managed according to USEPA protocols based on Weiss's review of field and laboratory documentation. The laboratories reported that sample temperature and holding times were within acceptable ranges.

No data were rejected during the validation process, and a "detected, but not quantified (DNQ)" qualification was applied to 244 sample results. DNQ qualifier applies when an analyte is detected between the MDL and the reporting limit. The DNQ naming convention is unique to the treatment system data because the National Pollutant Discharge Elimination System Permit requires this qualification code.

Field Duplicates. The required frequency of 1 field duplicate for every 20 field samples collected was satisfied as specified in the QAPP. Table 4 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 vinyl chloride. Table 5 reports the RPD in concentrations for each of the duplicate sample pairs for metals and cyanide samples. Table 6 reports the RPD in concentrations for each of the duplicate sample pairs for selenium. All RPDs for analyte concentrations presented in Tables 4 through 6 were below the precision acceptance limit.

Trip Blanks. Fifty-nine trip blanks were analyzed for VOCs, meeting the QAPP requirement of one trip blank for each GWETS sample shipment to the laboratory. No VOCs were detected above method detection limits in the trip blanks.

Laboratory Data

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

- TestAmerica Laboratories, Inc., Pleasanton, California;
- Caltest Analytical Laboratory, Napa, California; and
- McCampbell Analytical, Inc., Pittsburg, 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. However, as mentioned above, DNQ qualifiers were applied to 244 sample results.

As part of the laboratory protocol specified in the QAPP, method blanks and LCS are required to be performed to verify accuracy, precision, and completeness.

Method Blanks. The required frequency for method blanks is 1 for every 20 field samples collected, and the acceptance criterion is no detections above method detection limits. The required frequency was met. A trace amount of mercury was detected in one

laboratory method blank. The concentration of mercury was reported as DNQ, and was significantly less than that of the primary samples. Therefore the associated primary sample results were not qualified further or rejected.

Matrix Spike/Matrix Spike Duplicates. A total of 36 MS/MSD samples were analyzed from system samples (Table 3). The required frequency of 1 MS/MSD for every 20 field samples collected was met. The RPDs for all MS/MSD sample pairs were below the respective laboratory precision goal limits specified in the QAPP.

Laboratory Control Spikes. As specified in the QAPP, the required frequency for LCS is 1 for every 20 field samples and the acceptance range is 80% to 120% recovery. The required LCS frequency was met. However, the acceptance range was not met for all compounds. The acceptance criteria in the QAPP was set in 1991 and is considered out-of-date as laboratories are continually calibrating their equipment and updating their capabilities for percent recovery for each compound based on the equipment used. Therefore, there are several compounds where the QAPP acceptance criteria of 80% to 120% cannot be met using modern laboratory practices. The laboratory LCS ranges were not met for compounds in five data packets. The recovery for these compounds was greater than the laboratory LCS range. However, there were no detections of these analytes in the associated field samples, so there were no qualifications applied.

COMPLETENESS STATEMENT

A total of 11,266 results were generated from the well and system sampling for the RGRP and Fairchild in 2015. No laboratory results were qualified as "rejected," therefore 100% of the data in the project database for the 2015 year is valid. The QAPP requires that valid data constitute at least 90% of the total data collected. Therefore, the completeness goal for water sampling in 2015 was met.

TABLES

Table 1. Quantities of Primary Well and Associated Quality Assurance Samples Analyzed in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Analytes	Laboratory Method	Primary Samples	Field Duplicates	Field Blanks	Rinseate Blanks	Trip Blanks	Matrix Spike/ Matrix Spike Duplicates	Total
VOCs	USEPA Method 8260	25	4	0	0	6	4	**39**

Notes:

Only disposable sampling equipment was used, therefore field blanks and rinseate blanks were not collected.

Abbreviations:

RGRP – Regional Groundwater Remediation Program

USEPA – United States Environmental Protection Agency

VOCs – volatile organic compounds

Table 2. VOC Results for Groundwater Duplicate Samples Collected from Wells in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

		cis-1,2-DCE		PCE		TCE		Vinyl Chloride	
Well ID	**Sample Date**	**(µg/L)**	**RPD**	**(µg/L)**	**RPD**	**(µg/L)**	**RPD**	**(µg/L)**	**RPD**
BC-2-B1	3/16/2015	<0.50		<0.50		3.6		<0.50	
BC-2-B1 (DUP)	3/16/2015	<0.50	NC	<0.50	NC	3.3	9	<0.50	NC
BC-1-A	6/18/2015	<0.50		<0.50		<0.50		<0.50	
BC-1-A (DUP)	6/18/2015	<0.50	NC	<0.50	NC	<0.50	NC	<0.50	NC
ED-3-B1	9/22/2015	<0.50		<0.50		1.7		<0.50	
ED-3-B1 (DUP)	9/22/2015	<0.50	NC	<0.50	NC	1.7	0	<0.50	NC
ED-3-B1	12/17/2015	<0.50		<0.50		1.4		<0.50	
ED-3-B1 (DUP)	12/17/2015	<0.50	NC	<0.50	NC	1.7	19	<0.50	NC
Average RPD			---		---		9		---
UCL			---		---		24		---
Precision Acceptance Limit			---		---		33		---

Notes:

For duplicates where both results are not detected, no calculation is performed.

VOCs analyzed by USEPA Method 8260B

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 applicable
cis-1,2-DCE – cis-1,2-dichloroethene
DUP – duplicate sample
MEW – Middlefield-Ellis-Whisman
NC – not calculated
PCE – tetrachloroethene
RPD – relative percent difference
TCE – trichloroethene
UCL – upper confidence level
USEPA – United States Environmental Protection Agency
VOCs – volatile organic compounds
µg/L – micrograms per liter
< # – analyte not detected above the reporting limit of "#"

Table 3. Quantities of System and Associated Quality Assurance Samples Analyzed in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Analytes	Lab Method	Primary Samples Analyzed	Field Duplicates	Trip Blanks	Matrix Spike/ Matrix Spike Duplicates	Total
Volatile organic compounds	USEPA Method 8260B	222	24	59	20	325
1,4-Dioxane	USEPA Method 8270C	27	16	0	4	47
Priority Pollutant Metals	USEPA Method 200.8	3	2	0	2	7
Zinc	USEPA Method 200.8	3	2	0	2	7
Selenium	USEPA Method 200.8	9	6	0	2	17
Low-Level Mercury	USEPA Method 1631E	3	2	0	3	8
Cyanide	Standard Method 4500-CN	3	2	0	1	6
Hexavalent Chromium	USEPA Method 7199	3	2	0	1	6
Turbidity	USEPA Method 180.1	3	0	0	1	4
96-hour Fish Bioassay	E2000 (821-R-02-012)	3	0	0	0	3
Total		**279**	**56**	**59**	**36**	**430**

Abbreviations:
RGRP - Regional Groundwater Remediation Program
USEPA - United States Environmental Protection Agency

Table 4. Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected during Treatment System Sampling in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Treatment System Owner	Treatment System	Sample Date	Sample Location	cis-1,2-DCE		PCE		TCE		Vinyl Chloride		1,4-Dioxane	
				(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD
RGRP	N101	1/15/2015	Influent	190		<5.0		600		<5.0		---	
RGRP	N101	1/15/2015	Influent (DUP)	190	0	<5.0	NC	620	3	<5.0	NC	---	---
RGRP	N101	2/19/2015	Influent	---		---		---		---		2.5	
RGRP	N101	2/19/2015	Influent (DUP)	---	---	---	---	---	---	---	---	2.1	17
RGRP	N101	3/16/2015	Influent	180		<5.0		530		<5.0		---	
RGRP	N101	3/16/2015	Influent (DUP)	210	15	<5.0	NC	590	11	<5.0	NC	---	---
RGRP	N101	4/10/2015	Influent	180		<5.0		640		<5.0		---	
RGRP	N101	4/10/2015	Influent (DUP)	180	0	<5.0	NC	640	0	<5.0	NC	---	---
RGRP	N101	5/27/2015	Effluent	---		---		---		---		2.0	
RGRP	N101	5/27/2015	Effluent (DUP)	---	---	---	---	---	---	---	---	1.7	16
RGRP	N101	6/25/2015	Influent	190		<5.0		580		<5.0		---	
RGRP	N101	6/25/2015	Influent (DUP)	190	0	<5.0	NC	580	0	<5.0	NC	---	---
RGRP	N101	7/23/2015	Influent	180		<5.0		430		<5.0		---	
RGRP	N101	7/23/2015	Influent (DUP)	210	15	<5.0	NC	510	17	<5.0	NC	---	---
RGRP	N101	8/19/2015	Influent	---		---		---		---		2.7	
RGRP	N101	8/19/2015	Influent (DUP)	---	---	---	---	---	---	---	---	2.5	8
RGRP	N101	9/4/2015	Influent	200		<5.0		670		<5.0		---	
RGRP	N101	9/4/2015	Influent (DUP)	200	0	<5.0	NC	630	6	<5.0	NC	---	---
RGRP	N101	10/5/2015	Influent	230		<5.0		610		<5.0		---	
RGRP	N101	10/5/2015	Influent (DUP)	230	0	<5.0	NC	620	2	<5.0	NC	---	---
RGRP	N101	11/24/2015	Effluent	---		---		---		---		1.9	
RGRP	N101	11/24/2015	Effluent (DUP)	---	---	---	---	---	---	---	---	2.1	10
RGRP	N101	12/14/2015	Influent	210		<5.0		670		<5.0		---	
RGRP	N101	12/14/2015	Influent (DUP)	210	0	<5.0	NC	670	0	<5.0	NC	---	---

Table 4. Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected during Treatment System Sampling in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Treatment System Owner	Treatment System	Sample Date	Sample Location	cis-1,2-DCE		PCE		TCE		Vinyl Chloride		1,4-Dioxane	
				(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD
RGRP	S101	2/19/2015	Influent	61		<10		1,200		<10		---	
RGRP	S101	2/19/2015	Influent (DUP)	60	2	<25	NC	1,100	9	<25	NC	---	---
RGRP	S101	5/21/2015	Influent	71		<10		1,300		<10		---	
RGRP	S101	5/21/2015	Influent (DUP)	56	24	<10	NC	1,100	17	<10	NC	---	---
RGRP	S101	8/17/2015	Influent	44		<5.0		830		<5.0		---	
RGRP	S101	8/17/2015	Influent (DUP)	42	5	<10	NC	740	11	<10	NC	---	---
RGRP	S101	11/24/2015	Influent	280		2.6		1,100		<5.0		1.1	
RGRP	S101	11/24/2015	Influent (DUP)	280	0	<10	NC	970	13	<10	NC	1.1	0
RGRP	S101	12/14/2015	Influent	370		2.5		1,100		<5.0		---	
RGRP	S101	12/14/2015	Influent (DUP)	360	3	<10	NC	1,000	10	<10	NC	---	---
RGRP	S101	12/14/2015	Effluent	---		---		---		---		<0.97	
RGRP	S101	12/14/2015	Effluent (DUP)	---	---	---	---	---	---	---	---	<0.97	NC
Fairchild	System 1	1/15/2015	Midpoint 2	<0.50		<0.50		<0.50		3.1		---	
Fairchild	System 1	1/15/2015	Midpoint 2 (DUP)	<0.50	NC	<0.50	NC	<0.50	NC	3.0	3	---	---
Fairchild	System 1	3/16/2015	Effluent	---		---		---		---		<1.0	
Fairchild	System 1	3/16/2015	Effluent (DUP)	---	---	---	---	---	---	---	---	<1.0	NC
Fairchild	System 1	4/10/2015	Influent	390		<10		980		<10		---	
Fairchild	System 1	4/10/2015	Influent (DUP)	420	7	<10	NC	1,000	2	<10	NC	---	---
Fairchild	System 1	6/25/2015	Midpoint 2	<0.50		<0.50		<0.50		2.2		---	
Fairchild	System 1	6/25/2015	Midpoint 2 (DUP)	<0.50	NC	<0.50	NC	<0.50	NC	2.3	4	---	---
Fairchild	System 1	7/24/2015	Influent	330		<10		770		<10		---	
Fairchild	System 1	7/24/2015	Influent (DUP)	330	0	1.7	NC	780	1	2.6	NC	---	---
Fairchild	System 1	8/21/2015	Effluent	---		---		---		---		<1.0	
Fairchild	System 1	8/21/2015	Effluent (DUP)	---	---	---	---	---	---	---	---	<1.0	NC
Fairchild	System 1	10/2/2015	Midpoint 2	<0.50		<0.50		<0.50		0.51		---	
Fairchild	System 1	10/2/2015	Midpoint 2 (DUP)	<0.50	NC	<0.50	NC	<0.50	NC	0.83	48	---	---

Table 4. Summary of Results for VOCs and 1,4-Dioxane Duplicate Samples Collected during Treatment System Sampling in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Treatment System Owner	Treatment System	Sample Date	Sample Location	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
Fairchild	System 3	2/19/2015	Influent	---		---		---		---		2.2	
Fairchild	System 3	2/19/2015	Influent (DUP)	---	---	---	---	---	---	---	---	2.8	24
Fairchild	System 3	3/16/2015	Influent	520		7.0		870		<10		---	
Fairchild	System 3	3/16/2015	Influent (DUP)	680	27	6.9	1	1,100	23	<5.0	NC	---	---
Fairchild	System 3	5/21/2015	Influent	---		---		---		---		2.1	
Fairchild	System 3	5/21/2015	Influent (DUP)	---	---	---	---	---	---	---	---	1.9	10
Fairchild	System 3	8/21/2015	Influent	600		5.7		930		<5.0		---	
Fairchild	System 3	8/21/2015	Influent (DUP)	600	0	5.7	0	920	1	<5.0	NC	---	---
Fairchild	System 19	2/19/2015	Influent	220		<10		680		4.7		---	
Fairchild	System 19	2/19/2015	Influent (DUP)	230	4	<5.0	NC	680	0	4.7	0	---	---
Fairchild	System 19	5/21/2015	Influent	260		<10		570		<10		---	
Fairchild	System 19	5/21/2015	Influent (DUP)	250	4	<2.5	NC	670	16	5.2	NC	---	---
Fairchild	System 19	9/9/2015	Influent	270		<5.0		940		6.7		---	
Fairchild	System 19	9/9/2015	Influent (DUP)	270	0	<5.0	NC	930	1	6.7	0	---	---
Fairchild	System 19	11/24/2015	Influent	170		<5.0		490		4.3		---	
Fairchild	System 19	11/24/2015	Influent (DUP)	160	6	<5.0	NC	470	4	4.0	7	---	---
Average RPD					5		1		7		10		12
UCL					24		2		21		51		22
Precision Acceptance Limit					29		3		28		61		34

Notes:

For duplicates where both results are not detected, no calculation is performed. For duplicate pairs where the analyte was detected in one sample but not in the other and the detection limit is below the detected value, half the reporting limit was used as the concentration for the sample with no analyte detected. For duplicate pairs where the analyte was detected in one sample but not in the other sample and the detection limit is higher than the detected value, no calculation is performed.

VOCs analyzed by USEPA Method 8260B

1,4-Dioxane analyzed by USEPA Method 8270C

Per the 1991Quality 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:

cis-1,2-DCE – cis-1,2-dichloroethene

DUP – duplicate sample

NC – not calculated

PCE – tetrachloroethene

RGRP – Regional Groundwater Remediation Program

RPD – relative percent difference

TCE – trichloroethene

UCL – upper confidence level

USEPA – United States Environmental Protection Agency

VOCs – volatile organic compounds

µg/L – micrograms per liter

--- – not analyzed

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

Table 5. Triennial Metals and Cyanide Results for Duplicate Samples from Treatment System Sampling in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Treatment System Owner	Treatment System	Sample Date	Sample Location	Antimony		Arsenic		Beryllium		Cadmium		Chromium		Copper		Cyanide		Lead		Nickel		Silver		Thallium		Zinc		Hexavalent Chromium		Low-Level Mercury	
				(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(µg/L)	RPD	(ng/L)	RPD
RGRP	S101	11/24/2015	Effluent	<0.50		0.82		<0.20		0.066 DNQ		3.1		<0.50		<1.0		0.076 DNQ		3.3		<0.20		0.17		1		<0.50		<0.50	
RGRP	S101	11/24/2015	Effluent (DUP)	<0.50	NC	0.77	6	<0.20	NC	<0.10	NC	<0.50	170	<0.50	NC	0.76 DNQ	NC	0.057 DNQ	29	2.8	16	<0.20	NC	0.050 DNQ	109	1.1	10	<0.50	NC	<0.50	NC
RGRP	N101	11/24/2015	Effluent	0.20 DNQ		0.54		<0.20		0.081 DNQ		<0.50		4.0		1.0		0.18		1.9		0.10 DNQ		0.15		3.1		0.16 DNQ		1.1	
RGRP	N101	11/24/2015	Effluent (DUP)	<0.50	NC	0.65	18	<0.20	NC	<0.10	NC	0.38 DNQ	NC	2.3	54	0.76 DNQ	27	0.22	20	0.77	85	<0.20	NC	0.053 DNQ	96	3.3	6	0.16 DNQ	0	0.47 DNQ	80
Average RPD					---		12		---		---		---		---		---		24		51		---		102		8		---		---
UCL (three standard deviations)					---		18		---		---		---		---		---		13		102		---		20		5		---		---
Precision Acceptance Limit					---		31		---		---		---		---		---		37		153		---		123		13		---		---

Notes:

For duplicates where both results are not detected, no calculation is performed. For duplicate pairs where the analyte was detected in one sample but not in the other and the detection limit is below the detected value, half the reporting limit was used as the concentration for the sample with no analyte detected. For duplicate pairs where the analyte was detected in one sample but not in the other sample and the detection limit is higher than the detected value, no calculation is performed.

Cyanide analyzed by SM20-4500-CN

Hexavalent chromium analyzed by USEPA Method 7199

Low-level mercury analyzed by USEPA Method 1631E

Priority pollutant 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

For analytes with only one calculated RPD, the average RPD, UCL, and Precision Acceptance Limit were not calculated.

Abbreviations:

--- – not applicable

DNQ – laboratory estimated value below the reporting limit but above the method detection limit

DUP – duplicate sample collected at indicated location

MEW – Middlefield-Ellis-Whisman

NC – not calculated

ng/L – nanograms per liter

RGRP – Regional Groundwater Remediation Program

RPD – relative percent difference

UCL – upper confidence level

USEPA – United States Environmental Protection Agency

µg/L – micrograms per liter

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

Table 6. Selenium Results for Duplicate Samples from Treatment System Sampling in 2015, RGRP and Fairchild Sampling, Middlefield-Ellis-Whisman Study Area, Mountain View, California

Treatment System Owner	Treatment System	Sample Date	Sample Location	Selenium (µg/L)	RPD
RGRP	N101	2/19/2015	Effluent	5.9	
RGRP	N101	2/19/2015	Effluent (DUP)	6.0	2
RGRP	N101	8/19/2015	Effluent	5.8	
RGRP	N101	8/19/2015	Effluent (DUP)	5.9	2
RGRP	N101	11/24/2015	Effluent	2.9	
RGRP	N101	11/24/2015	Effluent (DUP)	5.1	55
Fairchild	System 1	2/19/2015	Effluent	10	
Fairchild	System 1	2/19/2015	Effluent (DUP)	9.6	4
Fairchild	System 1	8/21/2015	Effluent	8.1	
Fairchild	System 1	8/21/2015	Effluent (DUP)	8.4	4
Average RPD					13
UCL (three standard deviations)					63
Precision Acceptance Limit					76

Notes:

Selenium 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:

DUP – duplicate sample collected at indicated location

MEW – Middlefield-Ellis-Whisman

RGRP – Regional Groundwater Remediation Program

RPD – relative percent difference

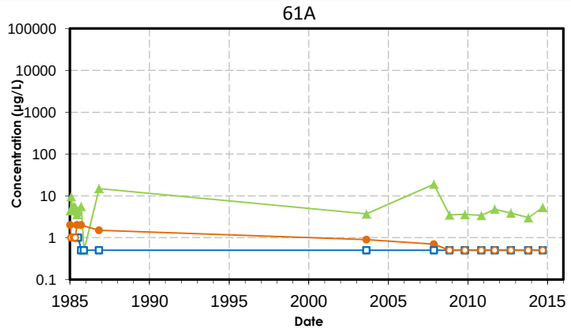
UCL – upper confidence level

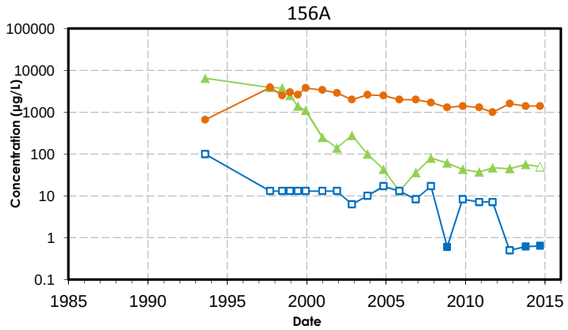
USEPA – United States Environmental Protection Agency

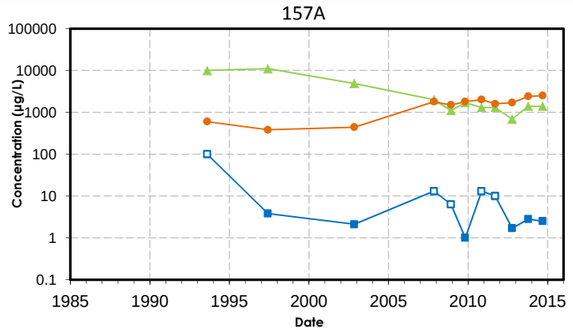
µg/L – micrograms per liter

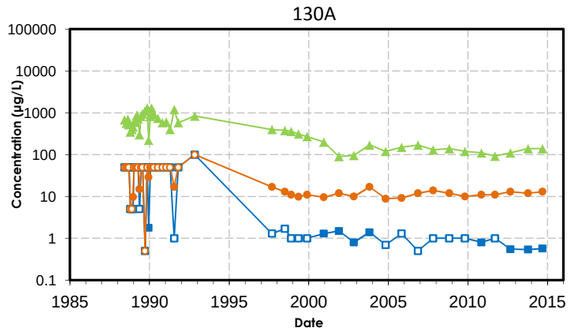
APPENDIX D

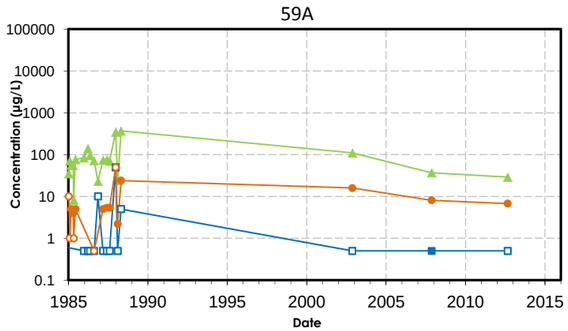
VOCs versus Time Graphs

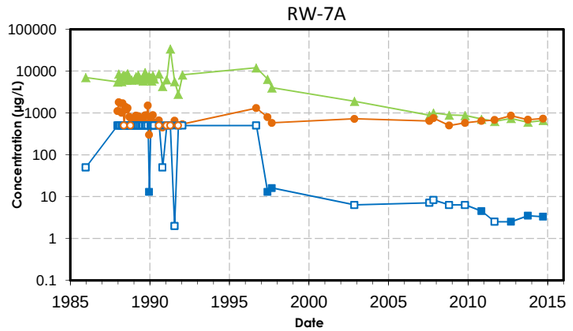


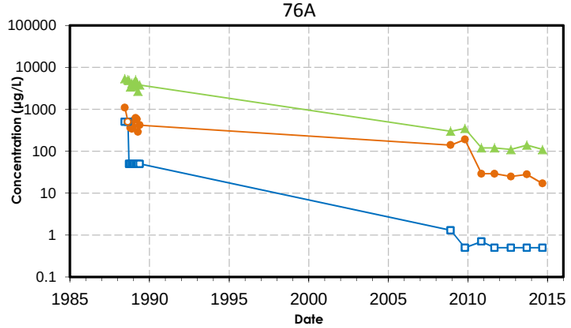


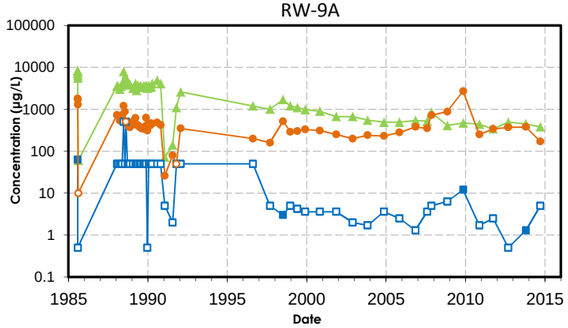


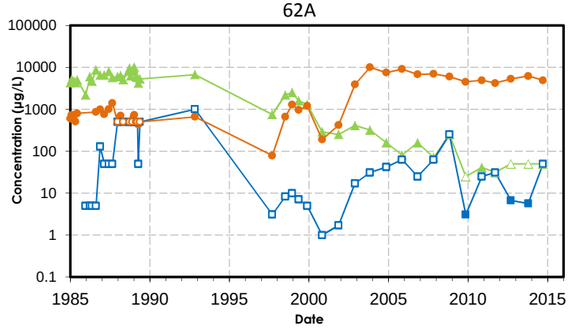


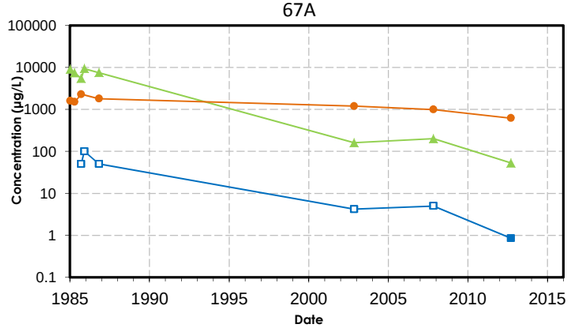


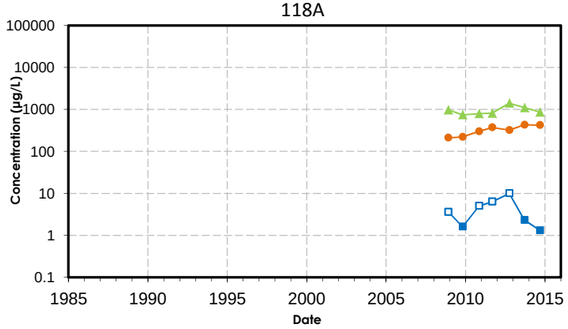


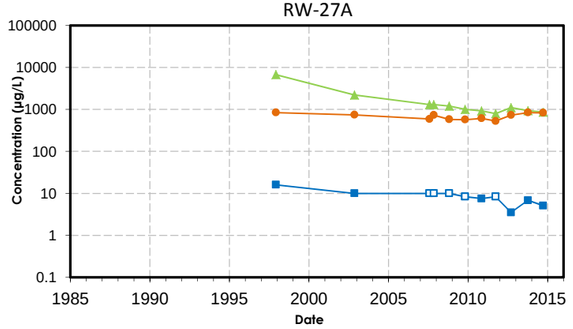






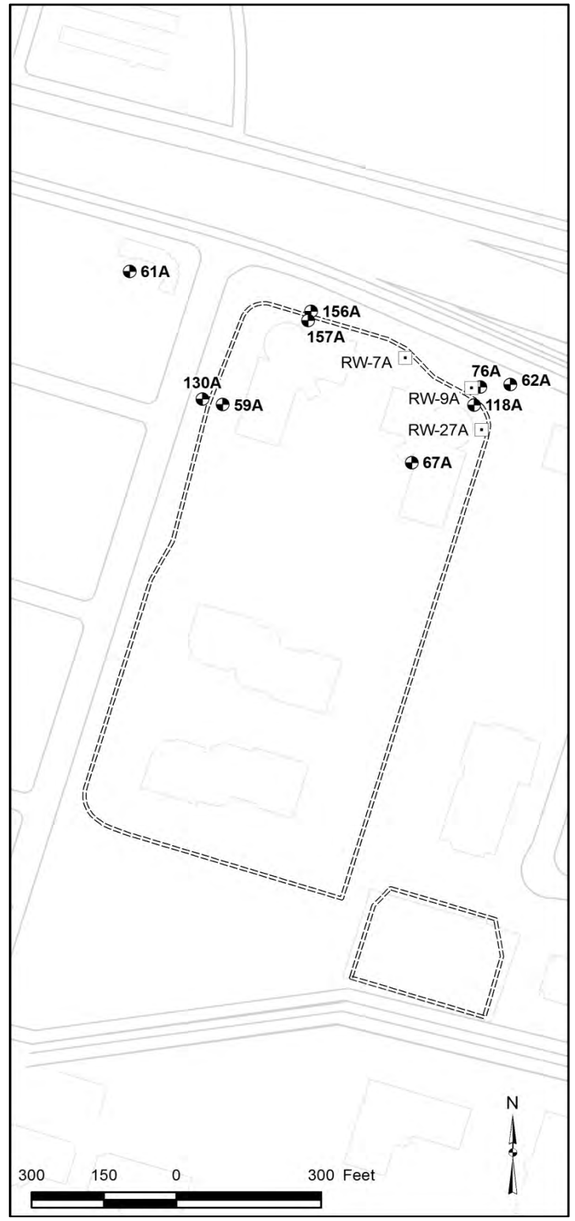






Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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



61A Monitoring Well

RW-7A Extraction Well (On)

Chlorinated Ethenes in Groundwater
A Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure **D-1**

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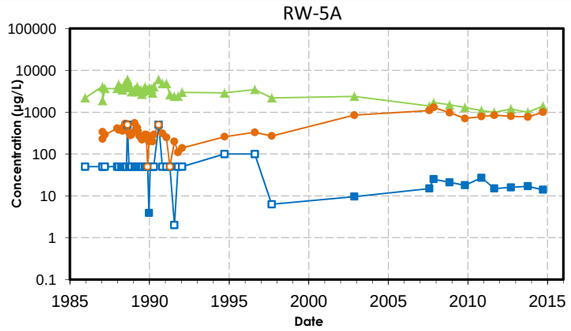

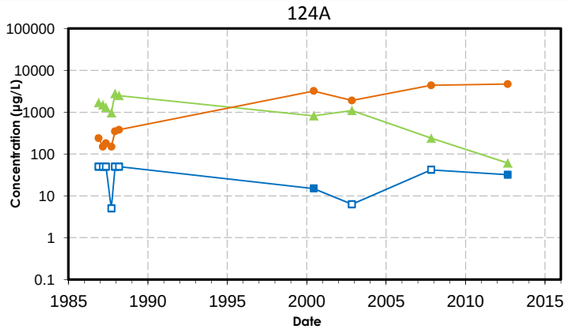

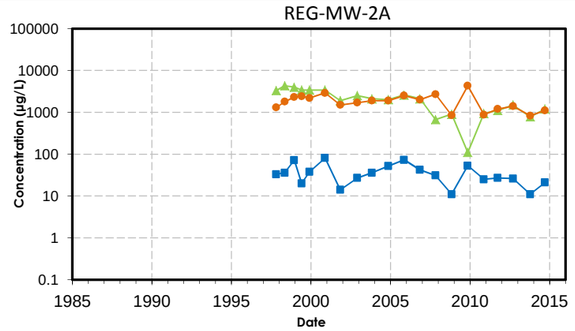

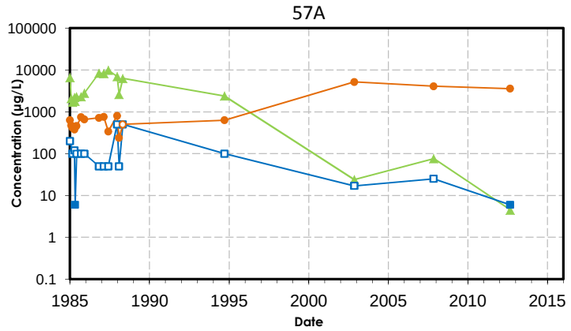

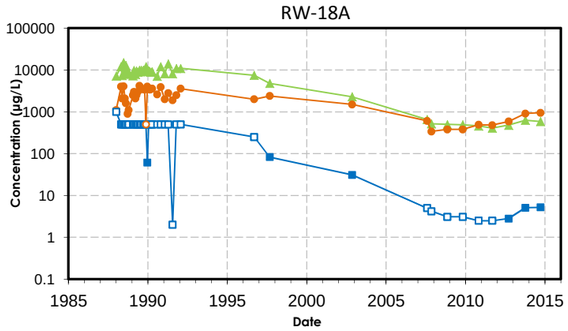

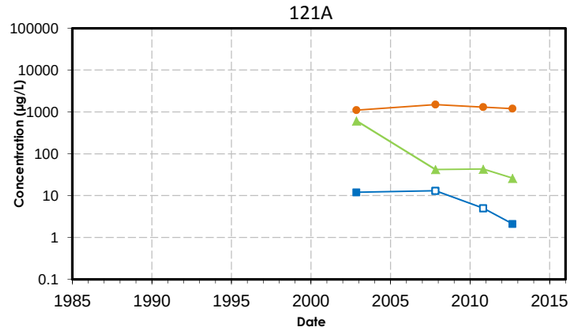

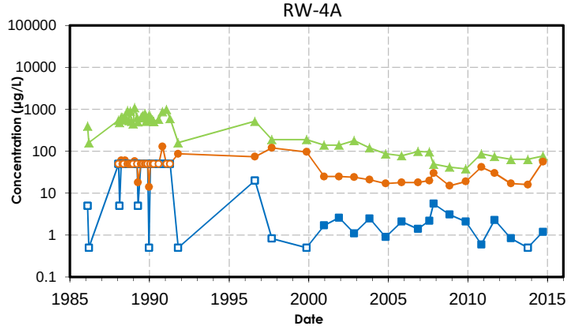

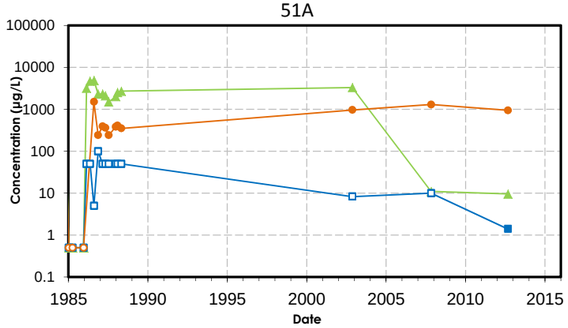

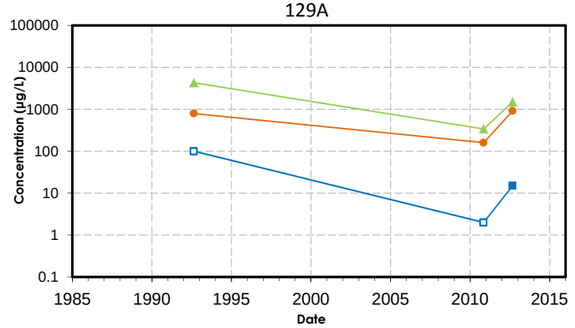

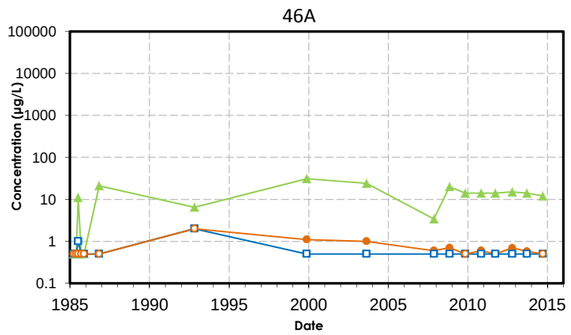

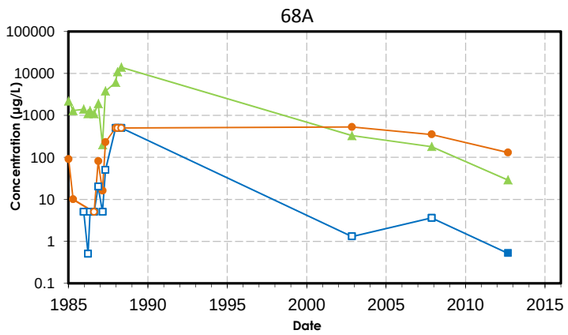

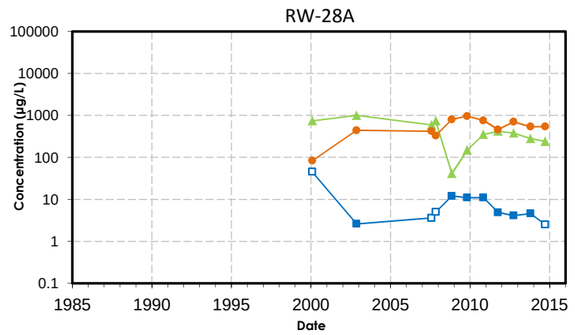

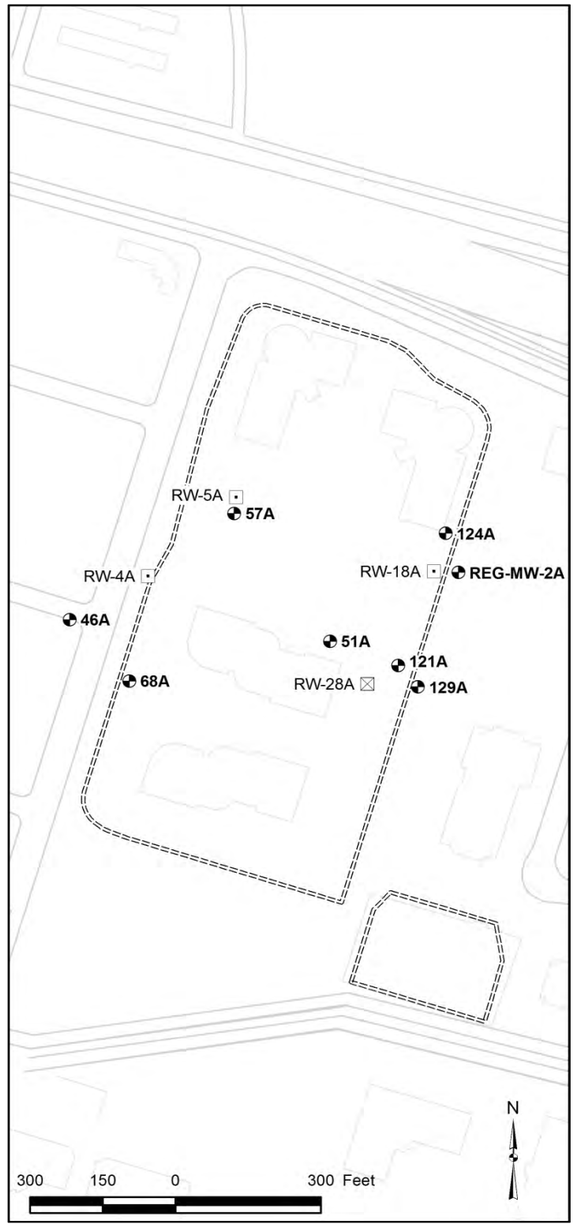

Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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

46A Monitoring Well
RW-4A Extraction Well (On)
RW-28A Extraction Well (Off)

Chlorinated Ethenes in Groundwater
A Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

Figure **D-2**

Oakland | April 2016

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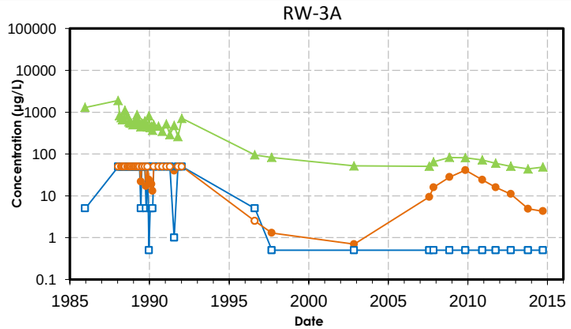
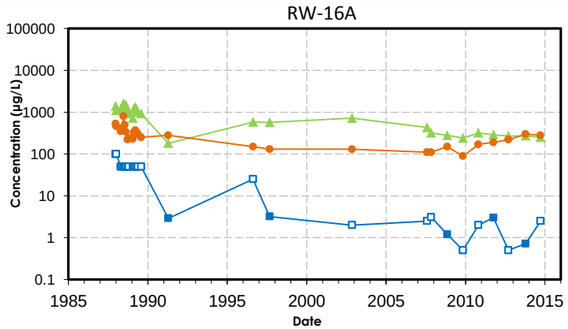
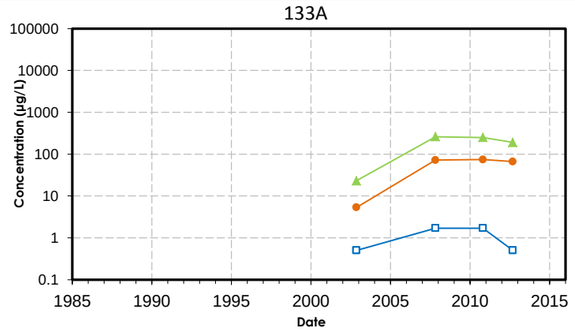
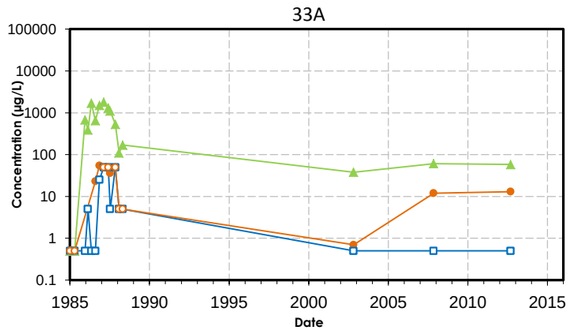
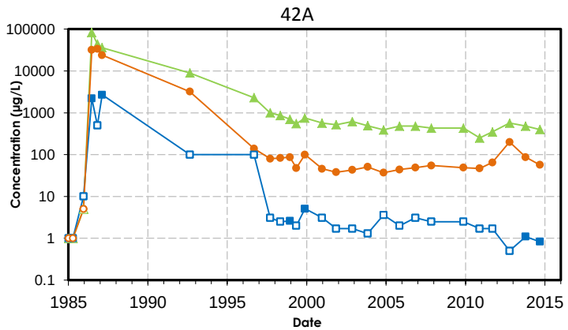
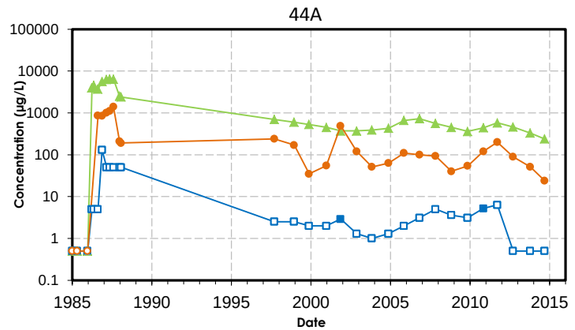


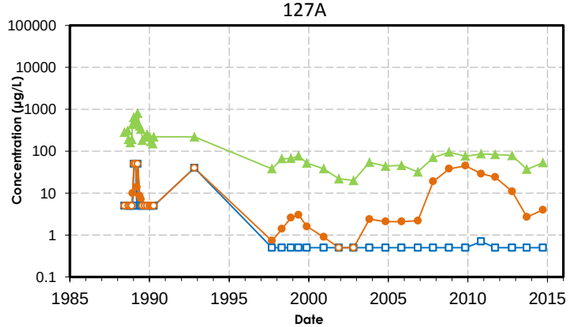


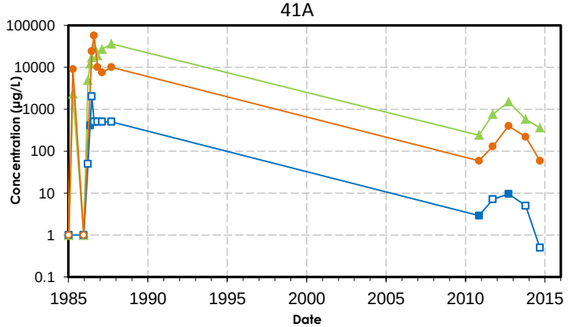


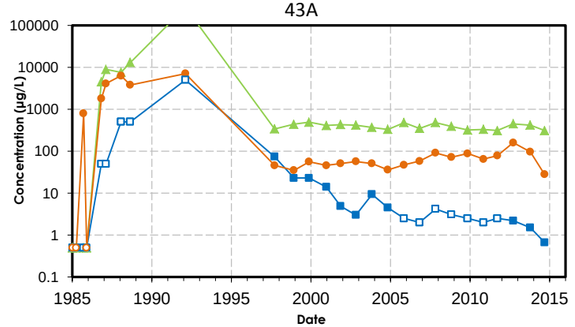


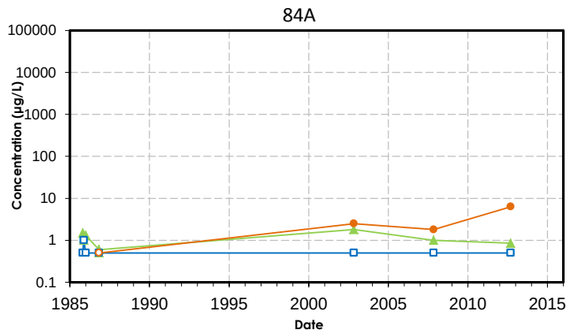


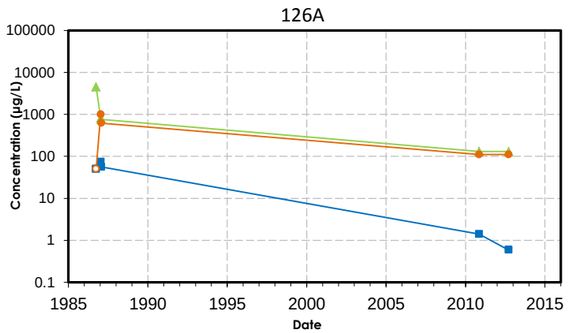


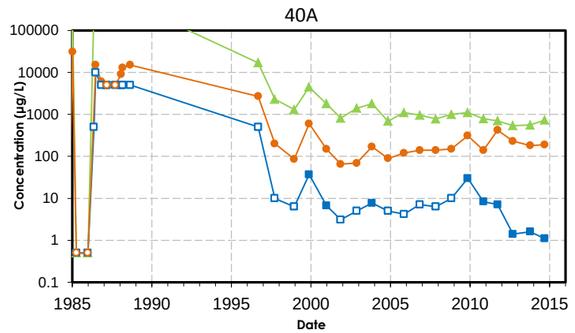


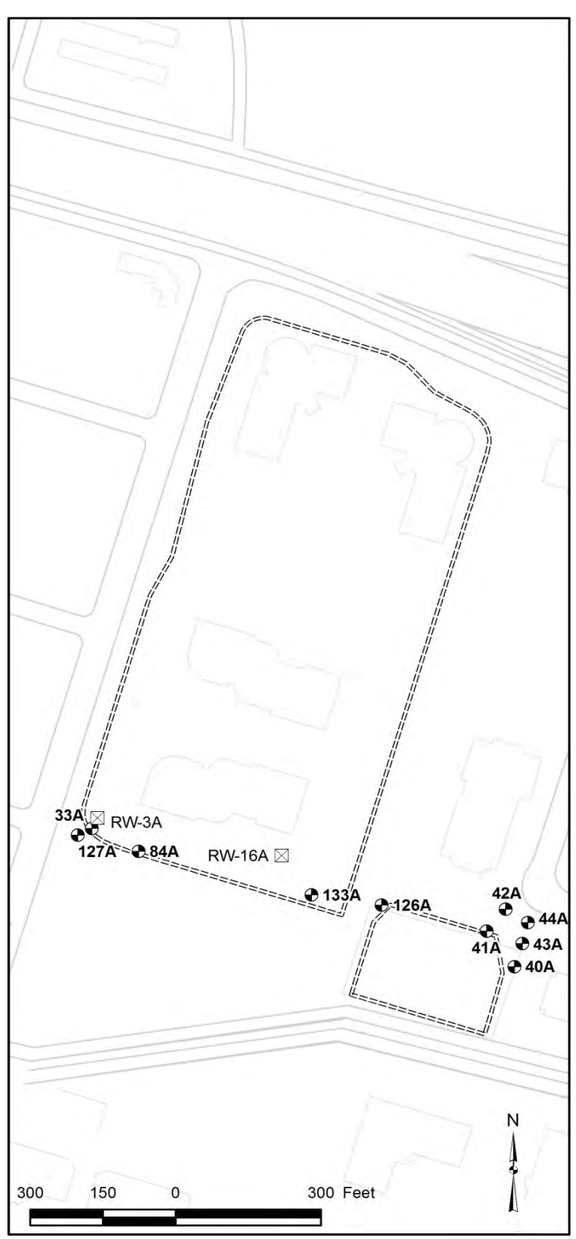












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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

33A Monitoring Well
RW-3A Extraction Well (Off)

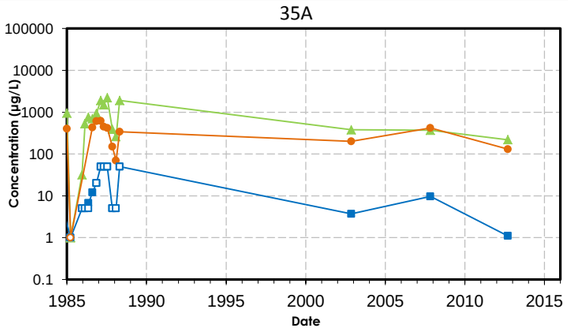
Chlorinated Ethenes in Groundwater
A Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

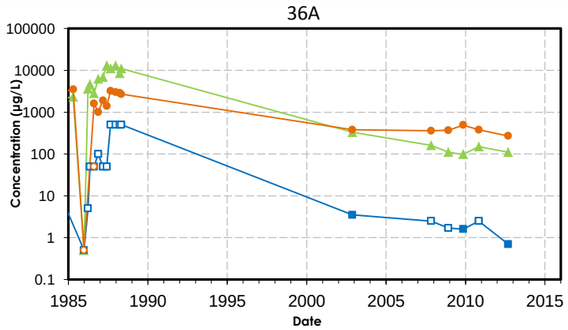
Geosyntec consultants

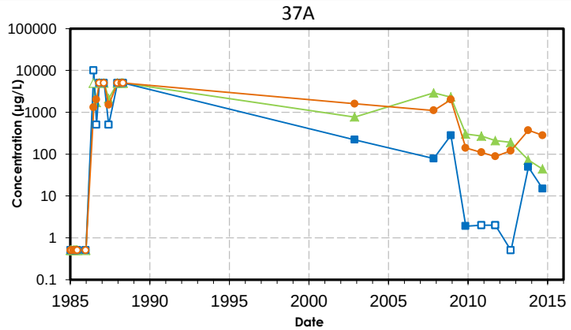
Figure **D-3**

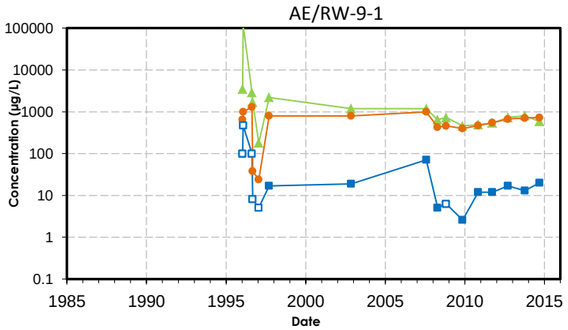
Oakland | April 2016

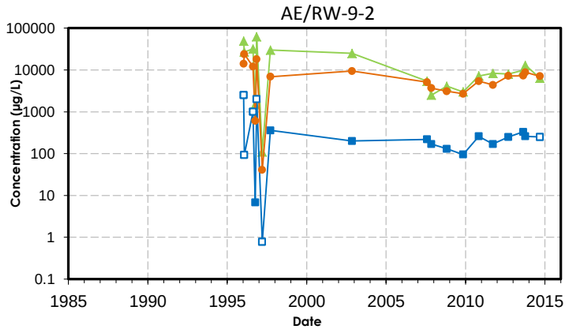
\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-3_TimeSeries.xlsx]

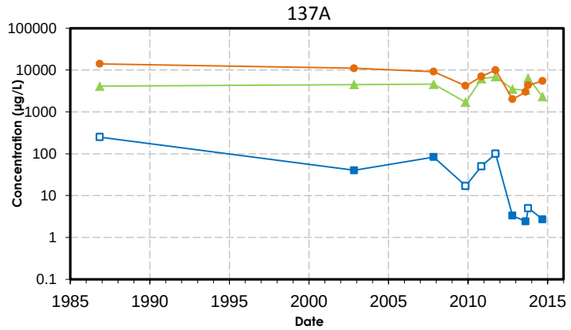


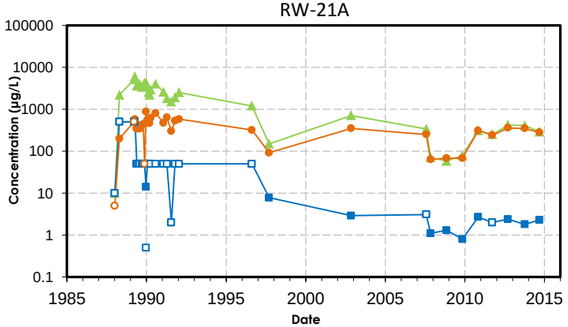


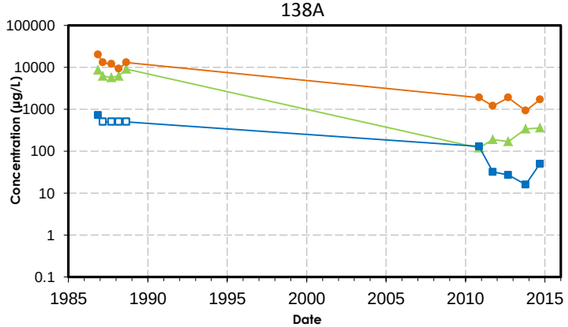


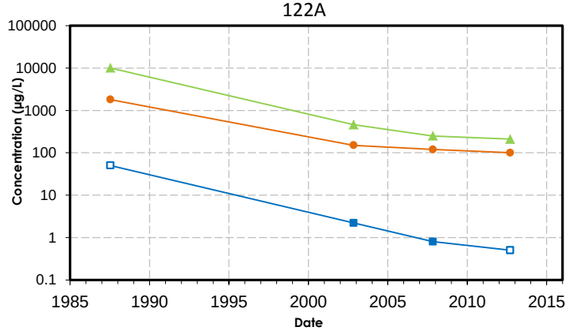


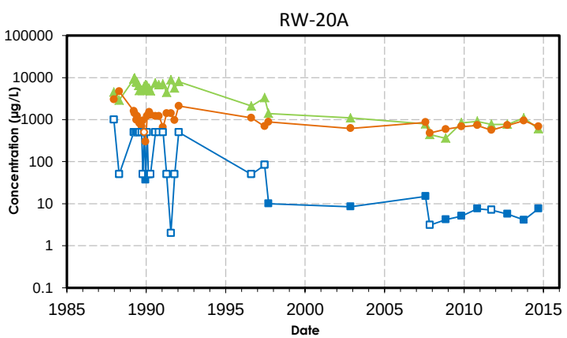


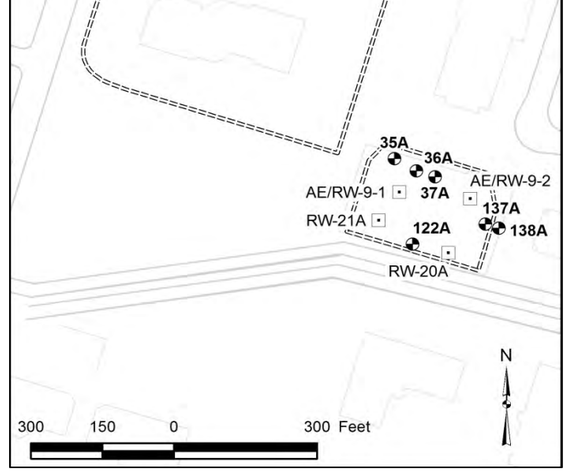












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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

35A Monitoring Well

RW-21A Extraction Well (On)

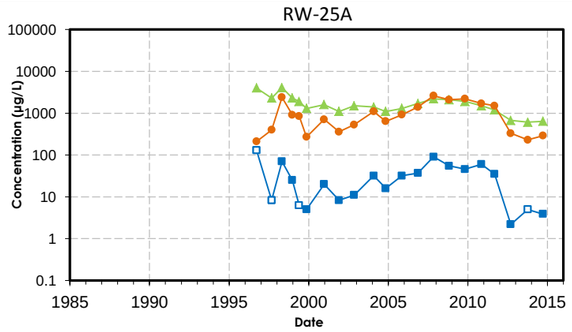
Chlorinated Ethenes in Groundwater
A Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

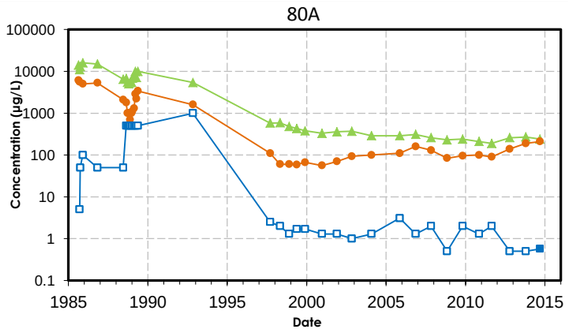
Geosyntec consultants

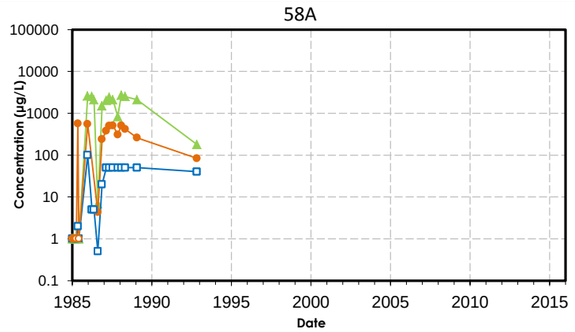
Figure **D-4**

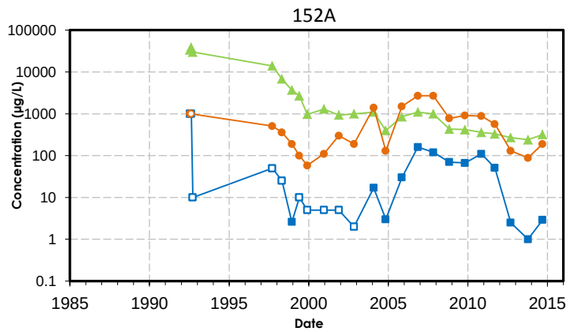
Oakland | April 2016

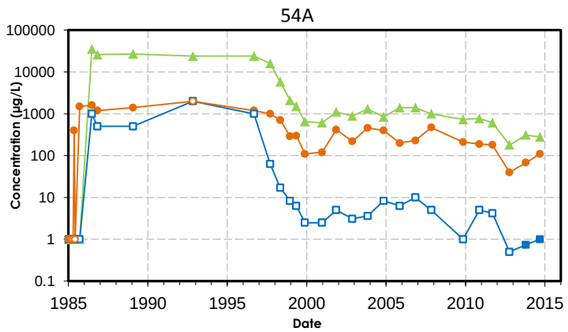
\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-4_TimeSeries.xlsx]

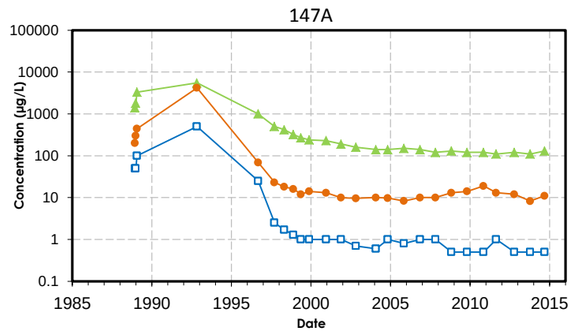


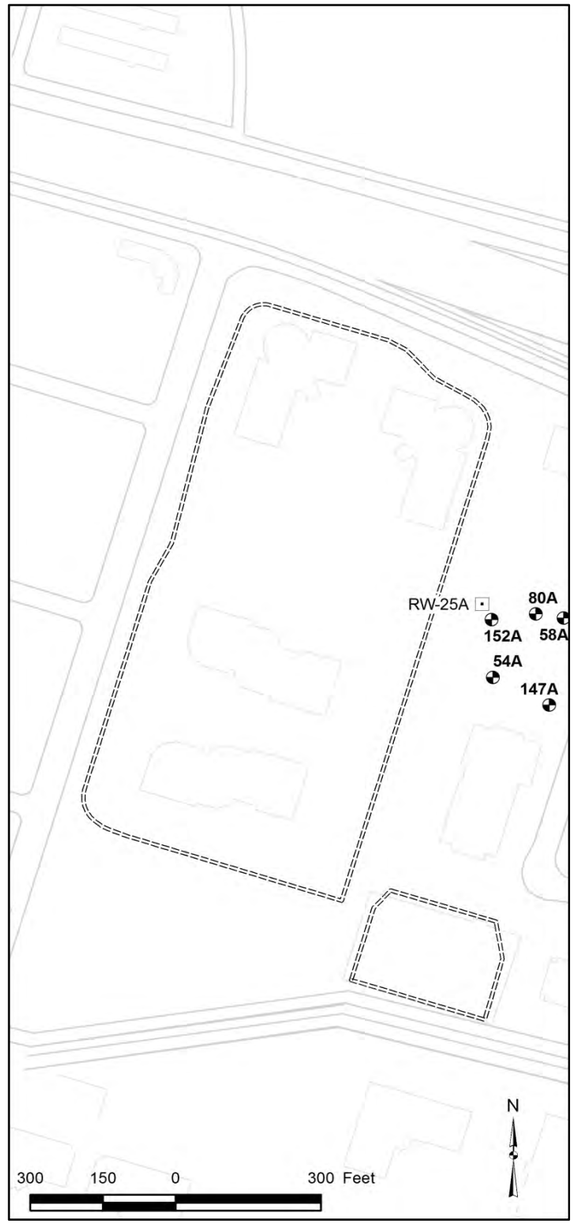












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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

152A Monitoring Well

RW-25A Extraction Well (On)

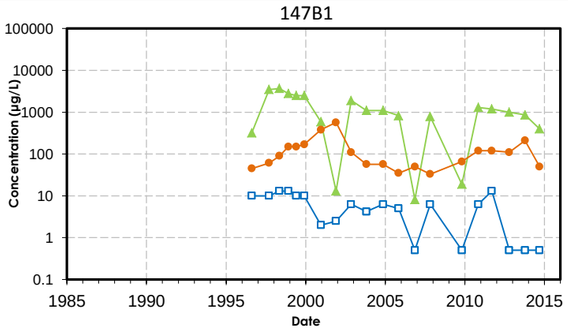
Chlorinated Ethenes in Groundwater
A Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

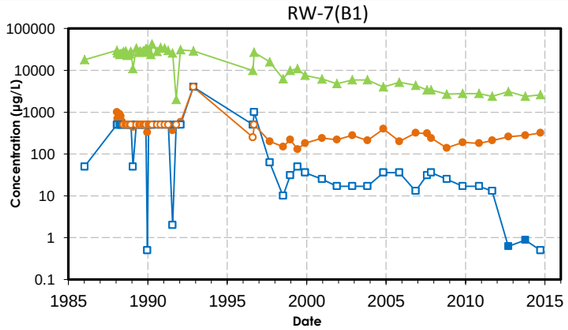
Geosyntec consultants

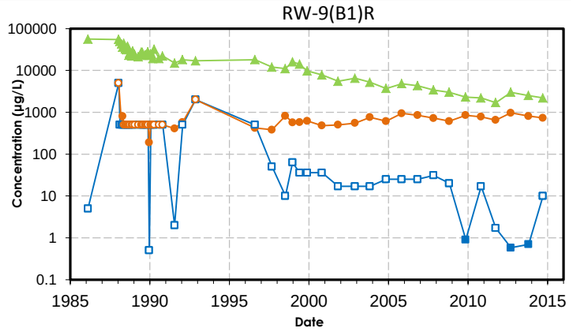
Figure **D-5**

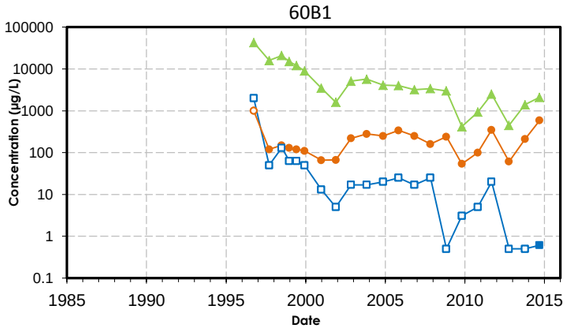
Oakland | April 2016

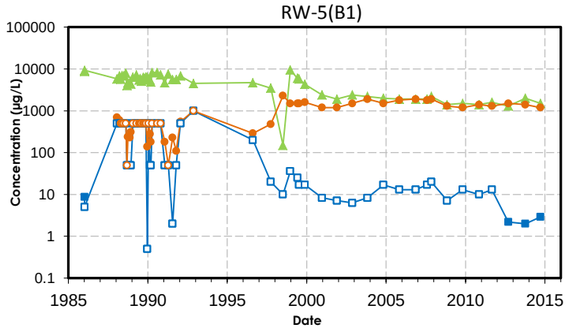
\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-5_TimeSeries.xlsx]

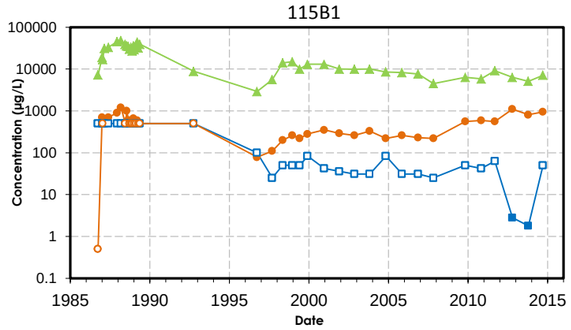


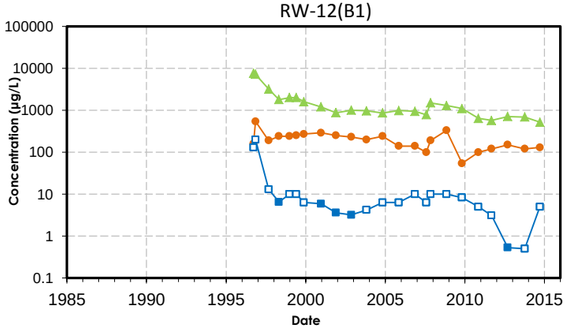


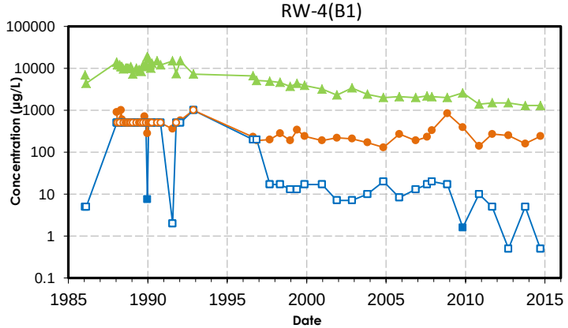


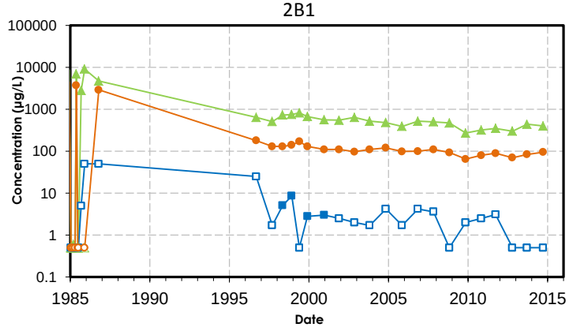


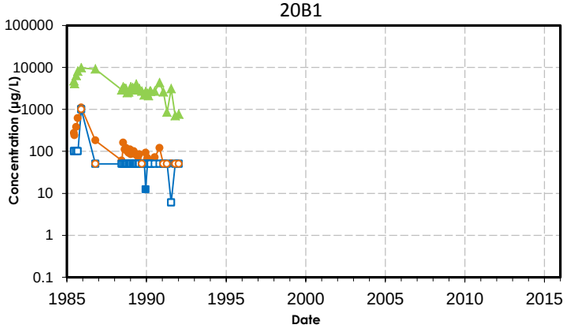


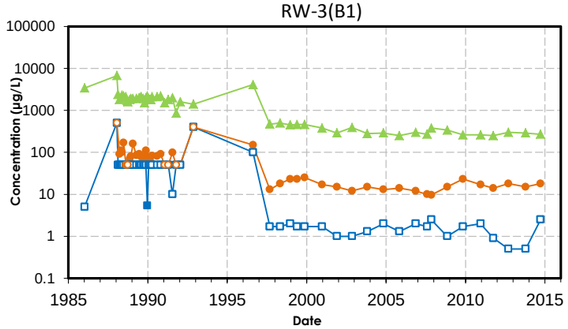


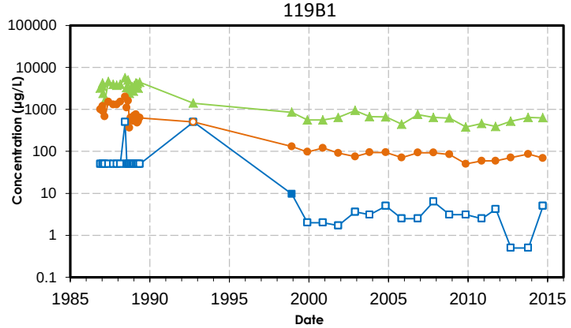






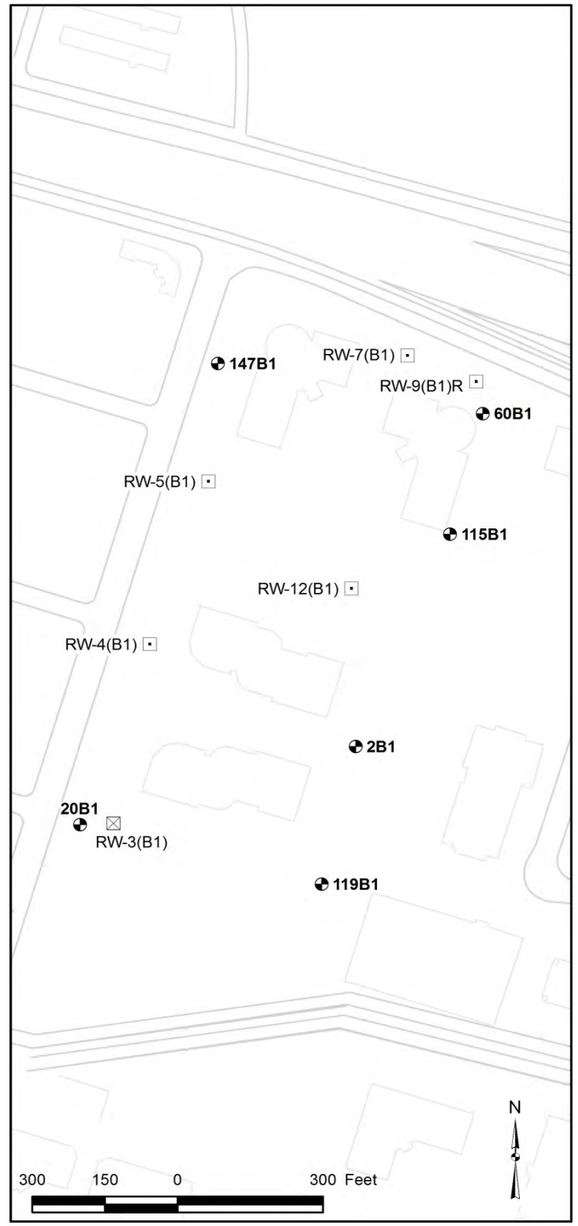






Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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



119B1 Monitoring Well
RW-3(B1) Extraction Well (On)

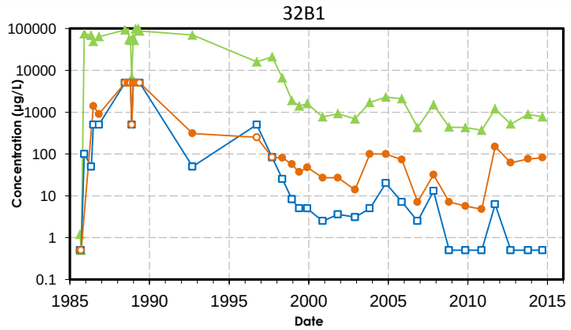
Chlorinated Ethenes in Groundwater
B1 Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

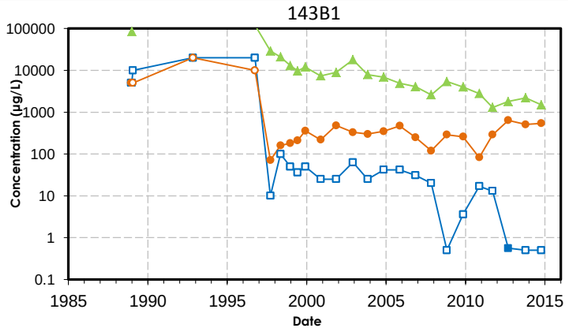
Geosyntec consultants

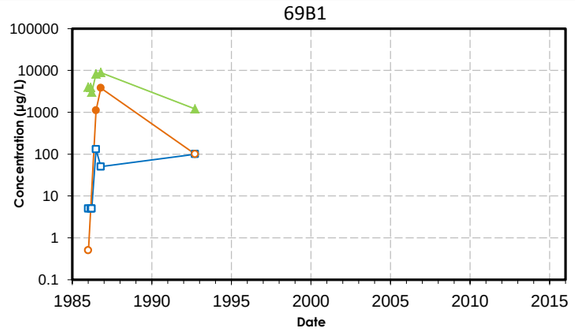
Figure **D-6**

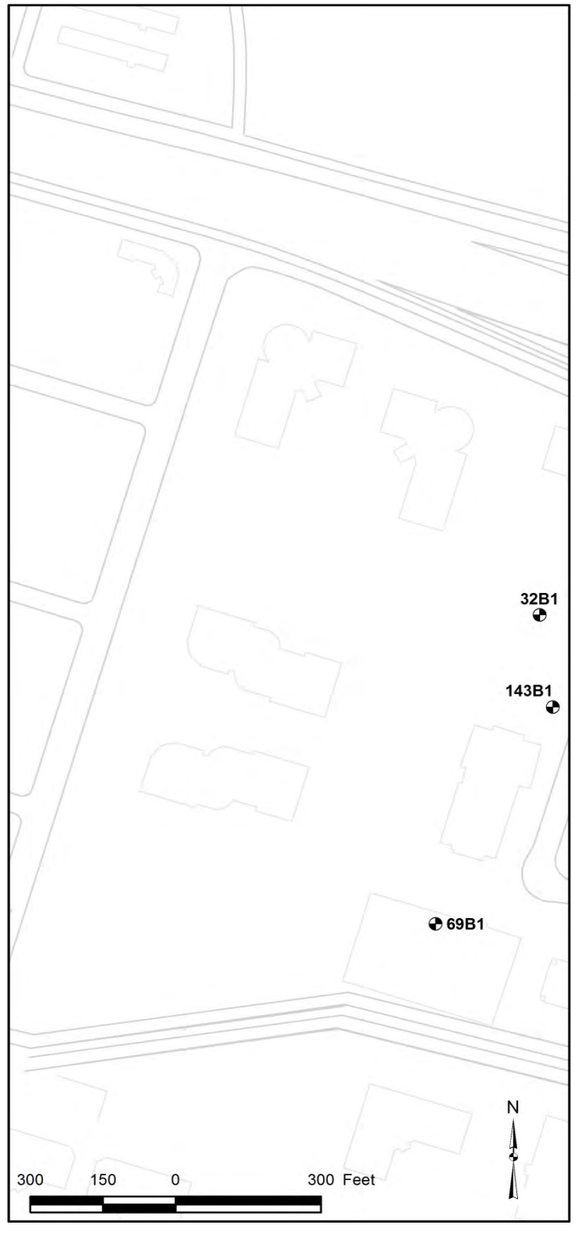
Oakland | April 2016

\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-6_TimeSeries.xlsx]









Trichloroethene

cis-1,2-Dichloroethene

Vinyl Chloride

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

69B1 Monitoring Well

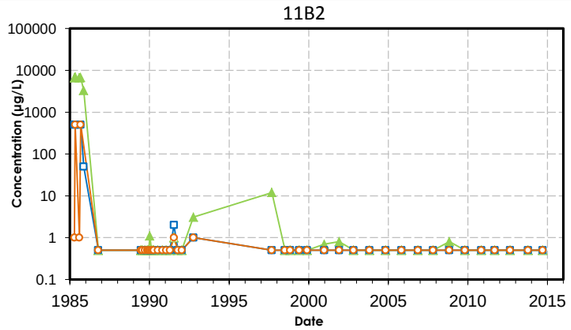
Chlorinated Ethenes in Groundwater
B1 Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

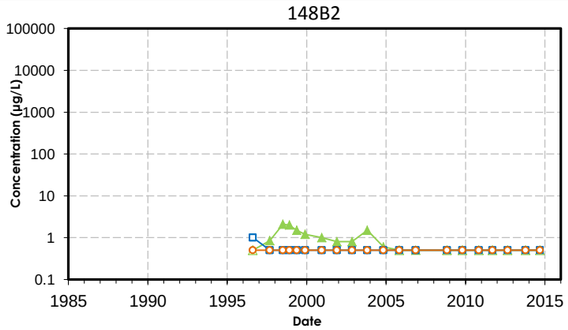
Geosyntec consultants

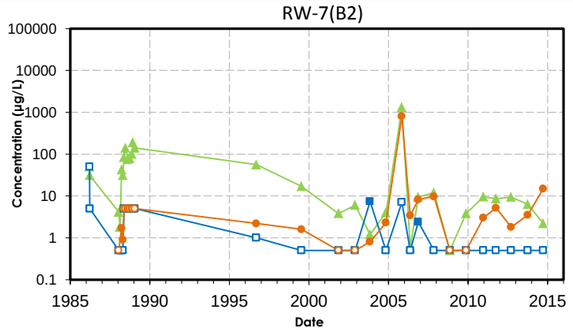
Figure
D-7

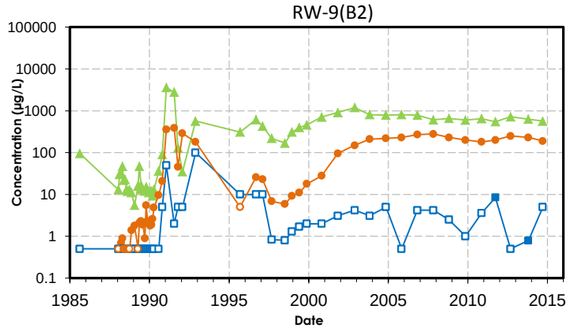
Oakland | April 2016

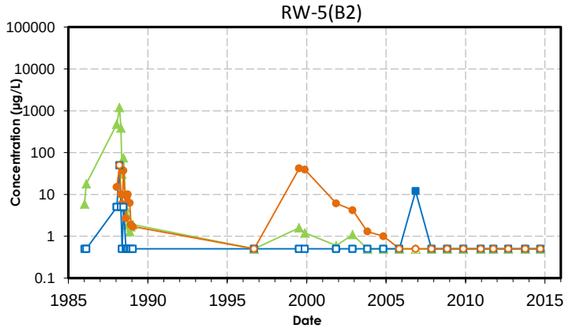
\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-7_TimeSeries.xlsx]

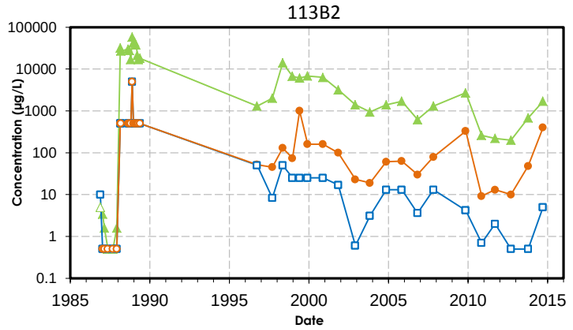


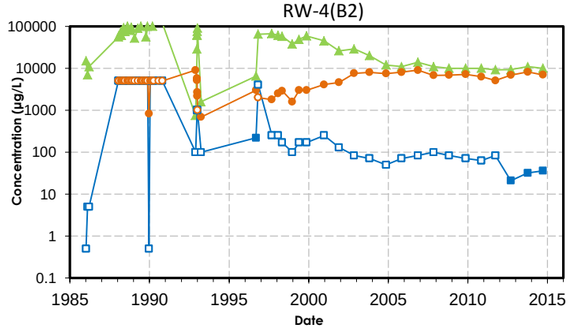


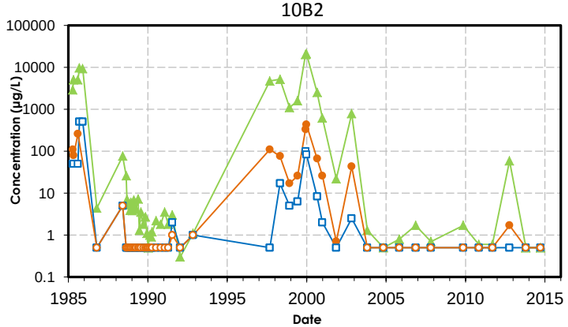


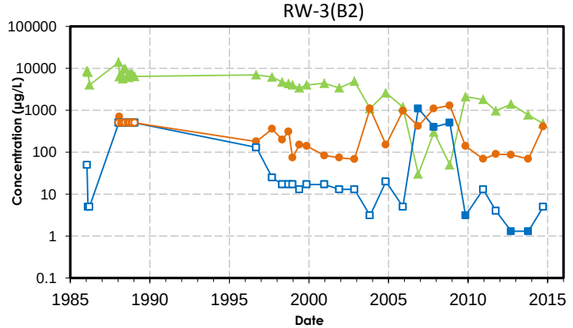


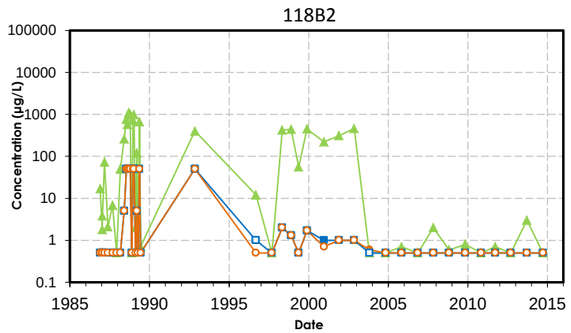


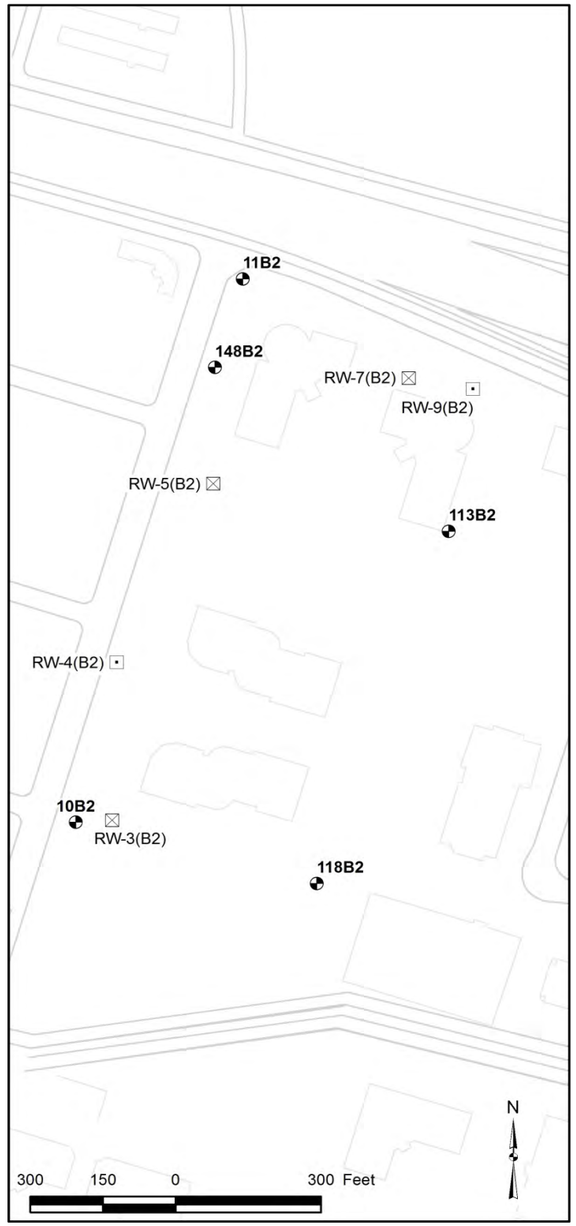












Trichloroethene
cis-1,2-Dichloroethene
Vinyl Chloride

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

118B2 Monitoring Well
RW-4(B2) Extraction Well (On)
RW-3(B2) Extraction Well (Off)

Chlorinated Ethenes in Groundwater
B2 Zone
MEW Former Fairchild Buildings 1-4, 9, and 18 Groundwater Remediation Programs
Mountain View, California

Geosyntec consultants

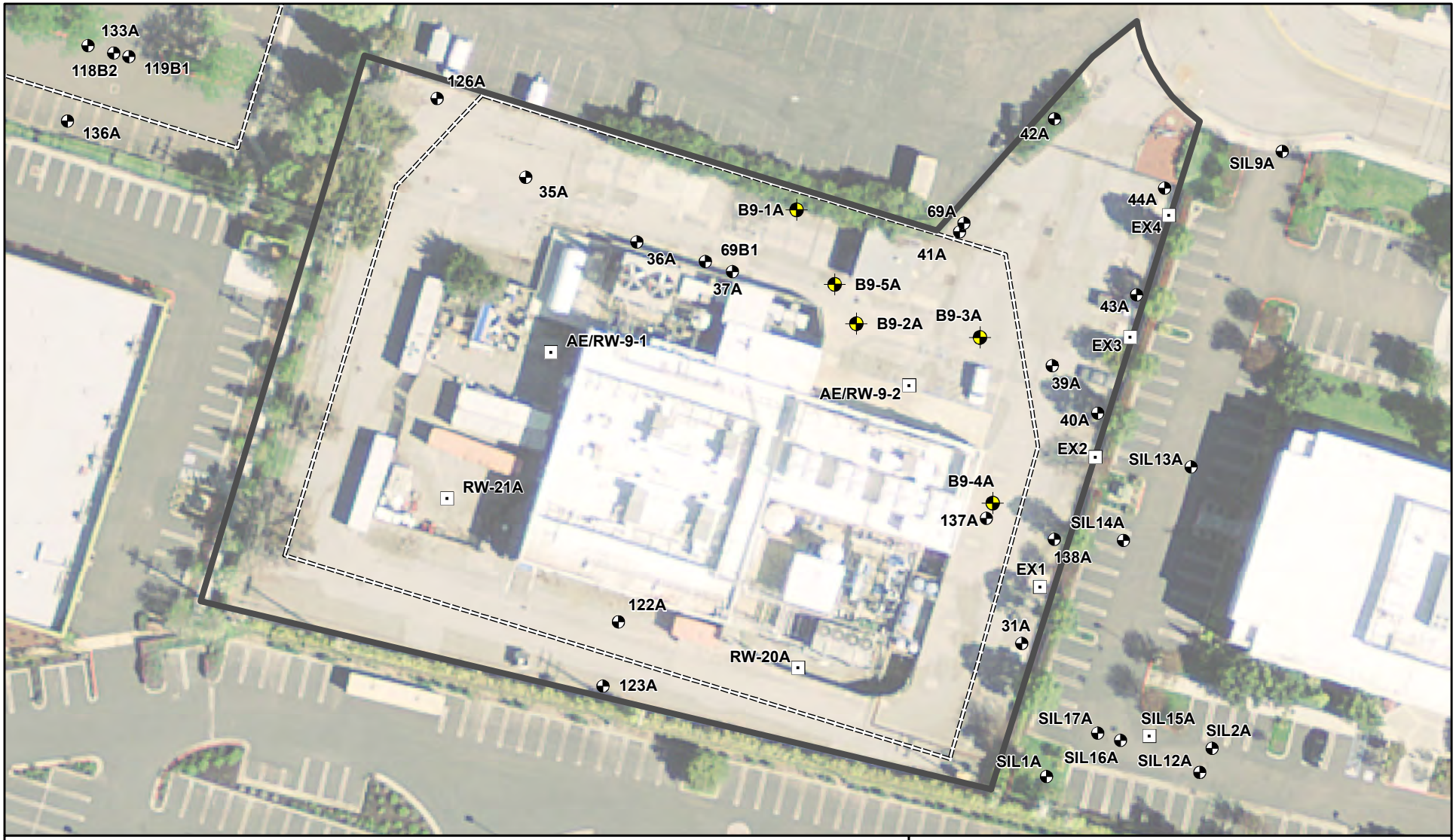
Figure **D-8**

Oakland | April 2016

\\oakland-01\data\GIS\MEW\Excel\Fairchild\2015_AR\Building1-4,9,18\[FigD-8_TimeSeries.xlsx]

APPENDIX E

401 National Avenue Pilot Study
Data Tables



Legend

- Recovery Well
- Recovery Well (Inactive)
- Monitoring Well
- 401 National Avenue
- New Monitoring Well
- ==== Slurry Wall

N

60 30 0 60 Feet

Notes:
Aerial Source: USGS April 2011

Site Plan And Monitoring Well Locations

401 National Avenue
Mountain View, California

Geosyntec consultants

Oakland | April 2016

Figure 1

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Table E-1
Analytical Data Summary - Performance Monitoring Wells
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
AE/RW-9-2	Baseline	2/12/2015	12.68	43.85	31.17	<0.50	6.95	730	2.0	0.99	**1,100**	**7,100**	**230**	**660**	**43**	--	**0.62**	<0.50	<0.010
	Duplicate	2/12/2015	12.68	43.85	31.17	--	6.95	730	2.0	0.99	**1,000**	**7,300**	**240**	--	--	--	--	--	--
	Quarterly	3/18/2015	--	43.85	--	--	6.31	8,379	263.1	3.74	**1,400**	**850**	**7.6 J**	--	--	--	--	--	--
	Quarterly	5/13/2015	12.34	43.85	31.51	**330**	6.10	7,127	261	0.00	**7,000**	**3,500**	**77 J**	**7,200**	**59**	**3,500**	**1.1**	**0.13 J**	**0.29**
	Quarterly	8/27/2015	13.40	43.98	30.58	**86**	6.28	7,430	123.7	0.00	**12,000**	**7,200**	**120**	**6,700**	**64**	**3,600**	**2.4**	<0.50	**0.092**
	Quarterly	12/29/2015	15.03	43.98	28.95	**13**	6.23	6,534	308.8	0.00	**9,500**	**4,800**	**110**	**5,800**	**55**	**3,000**	**10**	<0.50	**0.013**
37A	Baseline	2/11/2015	12.59	43.21	30.62	**0.27 J**	6.90	586	172.0	0.80	**200**	**120**	**3.7 J**	**560**	**35**	--	**0.057**	<0.50	<0.010
	Quarterly	3/18/2015	12.62	43.21	30.59	--	6.26	11,550	425.1	--	**260**	**180**	**6.7**	--	--	--	--	--	--
	Quarterly	5/13/2015	13.49	43.21	29.72	**290**	5.97	7,381	249.9	0.00	**360**	**100**	<10	**7,600**	**55**	**4,000**	**0.13**	<0.20	**0.28**
	Duplicate	5/13/2015	--	--	--	**280**	--	--	--	--	**360**	**100**	**3.3 J**	--	--	--	**0.13**	<0.20	**0.29**
	Quarterly	8/25/2015	15.57	44.37	28.80	**360**	6.46	8,163	142	0.00	**330**	**270**	**18**	**7,900**	**57**	**4,200**	**7.7**	<0.50	**0.34**
	Quarterly	12/29/2015																	
137A	Baseline	2/12/2015	13.67	43.68	30.01	<0.50	6.91	795	1.2	0.01	**4,000**	**11,000**	**57**	**670**	**49**	--	**1.2**	<0.50	<0.010
	Quarterly	3/18/2015	12.97	43.68	30.71	--	6.55	1,033	10.7	--	**2,200**	**9,200**	**100**	--	--	--	--	--	--
	Quarterly	5/13/2015	13.84	43.68	29.84	<0.5	6.92	942	-6.1	0.00	**3,200**	**10,000**	**91**	**700**	**53**	**160**	**1.5**	**0.77**	<0.010
	Quarterly	8/26/2015	15.45	44.26	28.81	**<0.50**	7.03	720	43.3	0.00	**5,300**	**14,000**	**120**	**710**	**53**	**150**	**1.5**	<0.50	<0.010
	Quarterly	12/29/2015	15.32	44.26	28.94	<0.50	6.55	1,007	129.6	0.00	**6,700**	**15,000**	**120 J**	**730**	**50**	**140**	**1.4**	<0.50	<0.010
B9-1A	Baseline	2/12/2015	13.6	43.21	29.61	<0.50	6.49	1,306	72.0	0.42	**70,000**	**9,600**	**220**	**1,200**	**110**	--	**1.1**	<0.50	**0.0013 J B**
	Quarterly	3/18/2015	12.53	43.21	30.68	--	5.57	24,500	654.1	--	**1,100**	**86**	<10	--	--	--	--	--	--
	Duplicate	3/18/2015	--	--	--	--	--	--	--	--	**1,200**	**96**	<50	--	--	--	--	--	--
	Quarterly	5/13/2015	13.23	43.21	29.98	**830**	6.08	16,310	375.5	0.00	**6,800**	**660**	<100	**20,000**	**100**	**8,900**	**0.22**	**0.25**	**0.82**
	Quarterly	8/26/2015	16.23	45.07	28.84	**380**	6.03	9,204	217.4	0.00	**8,700**	**1,300**	<50	**14,000**	**88**	**7,100**	**0.64**	<0.50	**0.32**
	Quarterly	12/30/2015	13.98	45.07	31.09	**64**	5.86	11,500	376.6	0.00	**6,600**	**1,300**	**3.8**	**10,000**	**83**	**5,800**	**24**	<0.50	**0.060**
B9-2A	Baseline	2/12/2015	13.4	43.85	30.45	**0.16 J**	6.77	968	28.1	0.28	**38,000**	**8,600**	<1000	**800**	**51**	--	**0.19**	<0.50	**0.0029 J B**
	Quarterly	3/18/2015	12.19	43.85	31.66	--	5.99	12,220	235.9	--	**3,600**	**480**	<25	--	--	--	--	--	--
	Quarterly	5/13/2015	12.92	43.85	30.93	**390**	6.60	9,172	261.2	0.00	**3,800**	**610**	<25	**9,100**	**48**	**4,900**	**0.12**	<0.20	**0.38**
	Quarterly	8/26/2015	15.48	44.35	28.87	**1.9**	6.52	4,378	175.5	0.00	**4,100**	**660**	<50	**5,200**	**31**	**2,700**	**10**	<0.50	**0.0072 J**
	Quarterly	12/30/2015	15.29	44.35	29.06	**380**	5.77	9,301	635.3	0.00	**3,800**	**580**	<50	**9,000**	**50**	**2,800**	**0.0095 J**	<0.50	**0.34**
B9-3A	Baseline	2/11/2015	13.97	42.48	28.51	<0.50	6.43	1,001	121.1	0.11	**3,000**	**830**	<100	**930**	**140**	--	**0.56**	<0.50	**0.00076 J B**
	Quarterly	3/18/2015	12.53	42.48	29.95	--	5.93	10,900	284.4	--	**2,700**	**570**	<100	--	--	--	--	--	--
	Quarterly	5/13/2015	13.35	42.48	29.13	**920**	6.29	8,290	344.1	0.00	**2,400**	**650**	**4.1 J**	**9,100**	**73**	**4,500**	**0.25**	<0.20	**0.81**
	Quarterly	8/26/2015	15.43	44.3	28.87	**550**	6.01	5,917	190.5	0.00	**2,400**	**620**	<25	**8,400**	**63**	**4,300**	**1.2**	<0.50	**0.48**
	Quarterly	12/29/2015	15.10	44.3	29.2	**97**	6.19	8,229	257.37	0.00	**1,500**	**370**	<25	**7,900**	**80**	**3,900**	**9.8**	<0.50	**0.094**
B9-4A	Baseline	2/12/2015	14.47	43.68	29.21	<0.50	6.43	1,407	77.1	0.18	**3,300**	**11,000**	**78**	**1,200**	**88**	--	**0.42**	<0.50	**0.00084 J B**
	Quarterly	3/18/2015	12.97	43.68	30.71	--	5.64	6,180	312.1	--	**4,500**	**6,300**	<50	--	--	--	--	--	--
	Quarterly	5/13/2015	13.78	43.68	29.9	**180**	5.82	6,384	241.2	0.00	**2,900**	**4,500**	<50	**6,400**	**70**	**3,800**	**0.28**	**0.16 J**	**0.18**
	Quarterly	8/26/2015	15.24	44.14	28.9	**42**	6.11	4,351	111.9	0.00	**2,700**	**4,000**	**9.9**	**5,900**	**65**	**3,000**	**3.2**	<0.50	**0.038**
	Quarterly	12/29/2015	15.01	44.14	29.13	**0.15 J**	5.90	5,683	128.5	0.00	**2,400**	**3,900**	<50	**6,300**	**60**	**2,600**	**17**	**0.44 J**	**0.0028 J**

Table E-1
Analytical Data Summary - Performance Monitoring Wells
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
B9-5A	Baseline	2/12/2015	13.00	43.85	30.85	<0.50	6.71	1,301	25.0	0.01	**310,000**	**43,000**	**530**	**1,200**	**76**	--	**0.34**	<0.50	<0.010
	Quarterly	3/18/2015	11.97	43.85	31.88	--	5.96	18,420	390.4	--	**9,800**	**1,200**	<50	--	--	--	--	--	--
	Quarterly	5/13/2015	12.63	43.85	31.22	**300**	6.27	11,710	312.9	0.00	**17,000**	**2,600**	**21**	**11,000**	**110**	**6,000**	**0.055**	<0.20	**0.32**
	Quarterly	8/26/2015	15.18	44.07	28.89	**16**	6.02	4,952	193	0.00	**8,800**	**2,500**	<50	**6,500**	**68**	**3,700**	**10**	<0.50	**0.025**
	Quarterly	12/30/2015																	

Notes:

ISCO	In situ chemical oxidation	Cr	Total dissolved chromium by EPA Method 6010B
DTW	Depth to water	Cr (VI)	Hexavalent chromium by EPA Method 7199
TOC	Top of casing	--	Sample not collected/Measurement not taken
WL	Water level	<	Analyte not detected above reporting limit shown
EC	Electrical conductivity	ft btoc	Feet below top of casing
ORP	Oxidation-reduction potential	ft MSL	Feet above mean sea level
DO	Dissolved oxygen	us/cm	micro siemens per centimeter
cVOCs	Chlorinated volatile organic compounds	mV	millivolts
TCE	Trichloroethene by EPA Method 8260B	mg/L	milligrams per liter
cDCE	Cis-1,2-Dichloroethene by EPA Method 8260B	ug/L	micrograms per liter
VC	Vinyl chloride by EPA Method 8260B	J	Result is less than reporting limit but greater than or equal to the method detection limit and the concentration is an estimated value
TDS	Total dissolved solids by Standard Method 2540C	B	Compound was detected in the associated laboratory blank sample
Mn	Total dissolved manganese by EPA Method 6010B		No sample due to Construction Activities
Fe	Total dissolved iron by EPA Method 6010B		

Table E-2
Analytical Data Summary - Sentry Wells, SCRWs, and Vishay Treatment System
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)[1]	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)[2]	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
Sentry Wells																			
39A	Baseline	2/12/2015	13.51	42.77	29.26	<0.50	6.51	968	116.2	0.11	**15,000**	**8,600**	**220**	**800**	**44**	--	**0.44**	<0.50	**0.00086 J B**
	Post Event 1 Sampling	3/3/2015	13.47	42.77	29.3	<50	6.16	2,333	230.5	0.00	**20,000**	**8,500**	**170**	**2,540**	**53**	**1,500**	**0.61**	<0.50	<0.010
	Post Event 1 Sampling	3/6/2015	13.33	42.77	29.44	**0.41 J**	6.11	2,442	180.4	6.44	**13,000**	**5,400**	**85 J**	**3,100**	**53**	**1,600**	**0.66**	<0.50	<0.010
	Post Event 1 Sampling	3/9/2015	13.13	42.77	29.64	<0.50	5.89	2,221	212.7	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/16/2015	13.17	42.77	29.60	<0.50	6.04	2,339	200.1	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	13.31	42.77	29.46	<0.50	6.45	1,967	124.1	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	13.83	42.77	28.94	<0.50 / <0.50	6.31	2,157	154.1	0.00	**15,000 / 17,000**	**7,000 / 7,800**	**200 / 200**	**1,700**	**54**	**610**	**0.50**	<0.50	**0.00081 J**
	Post Event 1 Sampling	4/29/2015	14.21	42.77	28.56	<0.50	7.56	1,752	122.4	0.00	**28,000**	**14,000**	**360**	**1,400**	**55**	**550**	**0.63**	**0.36**	**0.0015 J**
	Post Event 1 Sampling	5/26/2015	14.61	42.77	28.16	<0.50	6.70	1,567	158.3	0.00	**48,000**	**23,000**	**540**	**1,300**	**58**	**520**	**0.71**	**0.13 J**	<0.010
	Post Event 1 Sampling	7/2/2015	15.20	43.77	28.57	<0.50	6.67	1,334	79.1	0.00	**32,000**	**20,000**	**970**	**1,100**	**62**	**310**	**0.95**	<0.50	**0.00089 J**
	Post Event 1 Sampling	7/28/2015	17.05	44.35	27.30	<0.50	7.08	1,331	45.7	0.00	**20,000**	**23,000**	**1400**	**980**	**66**	**260**	**0.82**	<0.50	**0.00072 J**
	Post Event 1 Sampling	8/25/2015	17.20	44.35	27.15	<0.50	7.07	1,272	61.3	0.00	**27,000**	**23,000**	**970**	**1,000**	**63**	**260**	**1.2**	<0.50	**0.00085 J**
	Post Event 1 Sampling	9/29/2015	17.72	44.35	26.63	<0.50	6.93	1,132	38.2	0.00	**9,800 / 13,000***	**15,000 / 19,000***	**880**	**1,000**	**58**	**200**	**1.2**	<0.50	<0.010
	Post Event 1 Sampling	10/27/2015	17.89	44.35	26.46	<0.50	6.56	1,092	92.5	0.00	**11,000**	**17,000**	**1,100**	**870**	**60**	**190**	**1.2**	<0.50	**0.00072 J**
	Post Event 1 Sampling	11/19/2015	17.78	44.35	26.57	<0.50	6.98	796	7.0	0.03	**10,000**	**16,000**	**880**	**870**	**65**	**200**	**1.3**	<0.50	**0.00076 J**
	Post Event 2 Sampling	12/29/2015	17.15	44.35	27.2	<0.50	6.61	1,253	147.0	0.00	**17,000**	**21,000**	**910**	**950**	**60**	**200**	**1.1**	<0.50	<0.010
41A	Baseline	2/11/2015	13.3	42.40	29.10	**0.65**	6.69	748	165.9	0.28	**460**	**65**	<10	**640**	**39**	--	**0.021**	<0.50	<0.010
	Post Event 1 Sampling	3/3/2015	13.12	42.40	29.28	**16 J**	5.95	2,884	348.3	0.00	**1,200**	**320**	<5.0	**2,880**	**130**	**1,500**	**0.081**	<0.50	**0.010**
	Post Event 1 Sampling	3/6/2015	13.28	42.40	29.12	**19**	6.10	3,775	305.4	5.38	**1,300**	**360**	<5.0	**5,000**	**140**	**2,200**	**0.046**	<0.50	**0.0096 J**
	Post Event 1 Sampling	3/9/2015	13.18	42.40	29.22	**18**	5.84	4,232	305.4	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/16/2015	13.27	42.40	29.13	**16/14**	5.66	6,599	291.8	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	13.38	42.40	29.02	**21**	5.76	7,140	296.0	1.11	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	13.78	42.40	28.62	**24**	5.74	7,164	277.8	0.00	**1,400**	**300**	<25	**7,300**	**170**	**2,700**	<0.020	<0.50	**0.017**
	Post Event 1 Sampling	4/7/2015	12.52	42.40	29.88	**19**	5.68	6,658	270.4	2.31	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/14/2015	14.01	42.4	28.39	**33**	5.50	7,433	275.9	0.56	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/21/2015	14.09	42.4	28.31	**27**	5.58	7,333	244.7	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/29/2015	14.06	42.4	28.34	**22 / 19**	6.43	6,081	212.9	0.00	**1,300 / 1,400**	**330 / 330**	<25 / <25	**5,900**	**190**	**3,000**	<0.020	<0.20	**0.023**
	Post Event 1 Sampling	5/7/2015	14.28	42.4	28.12	**28**	5.81	6,247	241.5	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/14/2015	14.35	42.4	28.05	**23**	5.74	5,251	206.0	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/19/2015	14.36	42.4	28.04	**16**	5.84	4,440	213.9	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	14.4	42.4	28.00	**15 / 15**	6.11	4,021	206.7	0.00	**1,100 / 1,100**	**310 / 290**	<10 / <25	**4,000**	**110**	**2,200**	<0.020	<0.20	**0.016**
	Post Event 1 Sampling	6/2/2015	14.53	42.4	27.87	**15**	6.16	3,724	152.8	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/9/2015	14.57	42.4	27.83	**20**	5.77	3,249	224.9	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/17/2015	14.83	42.4	27.57	**14**	5.73	3,190	173.3	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/23/2015	14.9	42.4	27.50	**14**	6.08	3,530	188.4	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/30/2015	15.01	42.4	27.39	**11 / 11**	7.11	3,033	228.2	0.00	**880 / 880**	**260 / 260**	<10 / <10	**2,900**	**78**	**1,300**	**0.0068 J**	<0.50	**0.011**
	Post Event 1 Sampling	7/7/2015	15.15	42.4	27.25	**8.3**	5.96	2,797	165.0	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/14/2015	16.97	44.2	27.23	**6.9**	5.83	2,643	80.7	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/21/2015	17.13	44.2	27.07	**3.5**	6.36	2,597	58.3	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/29/2015	17.23	44.2	26.97	**2.9 H / 2.8 H**	6.04	2,764	34.2	0.00	**700 / 870**	**240 / 230**	<10 / <10	**2,500**	**83**	**1,100**	**0.087**	<0.50	**0.0040 J**
	Post Event 1 Sampling	8/4/2015	17.28	44.2	26.92	**3.6**	5.70	3,175	100.0	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	8/11/2015	17.26	44.2	26.94	**2.2**	5.96	3,699	113.7	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	8/26/2015	17.38	44.32	26.94	**0.55**	6.26	2,597	175.3	0.00	**720**	**290**	<25	**3,400**	**80**	**1,800**	**1.1**	<0.50	**0.0015 J**
	Post Event 1 Sampling	9/29/2015	17.72	44.32	26.60	<0.50	6.37	2,900	62.1	0.00	**800 / 1,000***	**300 / 380***	<10	**2,800**	**79**	**1,200**	**1.4**	<0.50	**0.0013 J**
	Post Event 1 Sampling	10/28/2015	18.02	44.32	26.30	<0.50	5.94	2,522	178.4	0.00	**1,100**	**400**	<10	**2,900**	**71**	**1,600**	**2.0**	<0.50	**0.0017 J**
	Post Event 1 Sampling	11/18/2015	17.96	44.32	26.36	<0.50	6.04	3,097	116.6	0.00	**890**	**360**	<10	**3,200**	**96**	**1,600**	**2.6**	<0.50	<0.010
	Post Event 2 Sampling	12/30/2015	17.38	44.32	26.94	<0.50	5.99	3,307	337.2	0.00	**750**	**370**	<5.0	**2,600**	**140**	**1,100**	**0.91**	<0.50	**0.0013 J**
31A	Baseline	2/12/2015	14.08	43.87	29.79	<0.50	6.61	918	16.2	0.02	**420**	**400**	<10	**750**	**35**	--	**0.46**	**0.31 J**	<0.010
	Post Event 1 Sampling	3/12/2015	14.38	43.87	29.49	<0.50	7.03	1,133	85.1	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/16/2015	13.38	43.87	30.49	<0.50	7.00	1,120	13.1	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	13.54	43.87	30.33	<0.50	6.61	1,175	81.1	1.44	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	14.26	43.87	29.61	<0.50	6.68	1,177	25.2	0.00	**250**	**410**	**6.5 J**	**780**	**36**	**120**	**0.74**	**0.45 J**	**0.00086 J**
	Post Event 1 Sampling	4/29/2015	14.68	43.87	29.19	<0.50	7.17	1,151	39.4	0.00	**320**	**500**	**7.1 J**	**750**	**39**	**150**	**0.95**	**0.46**	<0.010
	Post Event 1 Sampling	5/26/2015	15.08	43.87	28.79	<0.50	6.99	1,047	-3.0	0.00	**260**	**530**	**8.3 J**	**740**	**36**	**140**	**0.88**	**0.58**	<0.010
	Post Event 1 Sampling	7/1/2015	15.54	43.87	28.33	<0.50	6.10	1,055	20.0	0.00	**310**	**480**	**8.9**	**760**	**36**	**140**	**0.74**	**0.64**	<0.010
	Post Event 1 Sampling	7/28/2015	16.42	43.87	27.45	<0.50	7.06	1,117	30.1	0.00	**350**	**460**	**5.5**	**750**	**36**	**140**	**0.67**	<0.50	<0.010
	Post Event 1 Sampling	8/25/2015	16.76	44.4	27.64	<0.50 / <0.50	7.00	1,104	79.8	0.00	**310 / 310**	**490 / 490**	**6.5 / 6.7**	**790**	**38**	**150**	**0.71 / 0.70**	<0.50 / <0.50	**0.0010 J / 0.00073 J**
	Post Event 1 Sampling	9/30/2015	17.28	44.4	27.12	<0.50 / <0.50	6.83	988	42.1	0.00	**260 / 310**	**370 / 490**	**5.1** / <10	**760**	**35**	**160**	**0.64 / 0.65**	<0.50 / <0.50	<0.010 / <0.010
	Post Event 1 Sampling	10/27/2015	17.42	44.4	26.98	<0.50 / <0.50	6.07	1,005	25.0	0.00	**320 / 350**	**430 / 450**	**5.7** / <10	**770**	**36**	**160**	**0.62 / 0.60**	<0.50 / <0.50	**0.0013 J / 0.00083 J**
	Post Event 1 Sampling	11/18/2015	16.93	44.4	27.47	<0.50 / <0.50	6.36	1,095	33.1	0.00	**270 / 350**	**430 / 390**	**4.9** / <10	**790**	**37**	**160**	**0.67 / 0.61**	<0.50 / <0.50	**0.0017 J / 0.00096 J**
	Post Event 2 Sampling	12/29/2015	16.35	44.4	28.05	<0.50 / <0.50	6.14	1,156	123.7	0.00	**400 / 390**	**550 / 550**	**5.0 / 4.8 J**	**800**	**33 F1**	**140**	**0.58 / 0.59**	<0.50 / <0.50	<0.010 / <0.010

Table E-2
Analytical Data Summary - Sentry Wells, SCRWs, and Vishay Treatment System
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)[1]	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)[2]	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
43A	Baseline	2/11/2015	14.06	43.38	29.32	**20**	6.66	726	181.2	0.20	**360**	**67**	**2.2 J**	**680**	**37**	--	**0.21**	<0.50	**0.018 B**
	Post Event 1 Sampling	3/6/2015	14	43.38	29.38	--	6.33	1,604	171.0	Note 2	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/12/2015	13.75	43.38	29.63	**12**	7.09	1,060	154.5	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/16/2015	13.76	43.38	29.62	**9.1 H**	6.55	1,076	200.1	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	13.9	43.38	29.48	**3.5 / 3.7**	6.60	1,114	119.6	1.33	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	14.41	43.38	28.97	**24**	7.08	1,084	122.0	0.00	**420**	**75**	<10	**720**	**37**	**94**	**0.19**	<0.50	**0.024**
	Post Event 1 Sampling	4/29/2015	14.79	43.38	28.59	**15**	7.81	974	110.9	0.00	**470**	**91**	<10	**690**	**39**	**120**	**0.25**	<0.20	**0.016**
	Post Event 1 Sampling	5/26/2015	15.19	43.38	28.19	**4.1**	7.15	949	178.6	0.00	**370**	**74**	**2.1 J**	**680**	**39**	**110**	**0.32**	<0.20	**0.0050 J**
	Post Event 1 Sampling	7/1/2015	15.78	44.38	Event 1 Samp	**1.7**	6.44	969	56.9	0.00	**370 B**	**130**	**7.3 J**	**680**	**39**	**110**	**0.32**	<0.50	**0.0017 J**
	Post Event 1 Sampling	7/29/2015	18.18	45.45	27.27	**0.49 J**	6.63	1,008	-3.9	0.00	**410**	**120**	**4.4 J**	**760**	**40**	**120**	**0.28**	<0.50	**0.00083 J**
	Post Event 1 Sampling	8/25/2015	18.38	45.45	27.07	**1.1**	7.03	983	57.4	0.00	**440**	**200**	**7.9**	**720**	**42**	**120**	**0.35**	<0.50	**0.0021 J**
	Post Event 1 Sampling	9/30/2015	18.8	45.45	26.65	**0.49 J**	6.89	904	-2.2	0.00	**330**	**170**	**8.7**	**700**	**38**	**130**	**0.40**	<0.50	<0.010
	Post Event 1 Sampling	10/29/2015	19.03	45.45	26.42	**3.5**	6.31	929	118.7	0.00	**370**	**150**	**7.7**	**680**	**37**	**140**	**0.44**	<0.50	**0.0032 J**
	Post Event 1 Sampling	11/18/2015	18.92	45.45	26.53	**0.70**	6.45	1,025	102.7	0.00	**330**	**170**	**12**	**750**	**40**	**150**	**0.46**	<0.50	**0.0013 J**
	Post Event 2 Sampling	12/30/2015	18.29	45.45	27.16	**1.1**	6.10	1,193	488.9	0.00	**430**	**260**	**14**	**720**	**39**	**150**	**0.59**	<0.50	**0.0016 J**
116A	Baseline	2/11/2015	12.22	40.97	28.75	<0.50	6.76	786	40.8	0.22	**31,000**	**3,000**	<250	**740**	**47**	--	**1.9**	<0.50	**0.0052 J B**
	Post Event 1 Sampling	3/12/2015	12.22	40.97	28.75	<0.50	7.04	1,194	48.3	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/16/2015	12.23	40.97	28.74	<0.50	6.82	1,210	54.6	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	12.34	40.97	28.63	<0.50	6.74	1,241	45.2	0.06	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	12.72	40.97	28.25	<0.50	7.14	1,235	30.1	0.00	**36,000**	**4,200**	**110**	**870**	**51**	**190**	**2.1**	<0.50	**0.0010 J**
	Post Event 1 Sampling	4/29/2015	13.04	40.97	27.93	<0.50	6.76	1,155	126.5	0.00	**39,000**	**4,600**	<500	**840**	**54**	**240**	**2.5**	<0.20	**0.0017 J**
	Post Event 1 Sampling	5/27/2015	13.44	40.97	27.53	<0.50	6.70	1,119	12.8	0.00	**33,000**	**5,200**	<500	**820**	**51**	**230**	**2.3**	**0.14 J**	<0.010
	Post Event 1 Sampling	7/2/2015	13.93	40.97	27.04	<0.50	6.64	1,137	30.8	0.00	**40,000**	**3,900**	<250	**820**	**51**	**230**	**2.2**	<0.50	**0.0011 J**
	Post Event 1 Sampling	7/28/2015	14.28	40.97	26.69	<0.50	6.13	1,138	54.2	0.00	**37,000**	**4,200**	<250	**790**	**52**	**240**	**2.2**	<0.50	**0.0011 J**
	Post Event 1 Sampling	8/25/2015	14.50	40.97	26.47	<0.50	7.12	1,129	43.7	0.00	**38,000**	**5,400**	**140**	**830**	**55**	**220**	**2.2**	<0.50	**0.0013 J**
	Post Event 1 Sampling	9/30/2015	14.83	40.97	26.14	<0.50	7.00	1,026	7.7	0.00	**29,000**	**4,900**	**140**	**840**	**51**	**250**	**2.1**	<0.50	<0.010
	Post Event 1 Sampling	10/29/2015	14.99	40.97	25.98	<0.50	6.28	1,035	37.9	0.00	**33,000**	**5,300**	**140 J**	**810**	**52**	**240**	**1.9**	<0.50	<0.010
	Post Event 1 Sampling	11/20/2015	15.01	40.97	25.96	<0.50	6.41	1,045	112.6	0.00	**32,000**	**4,400**	**170 J**	**860**	**55**	**230**	**2.1**	<0.50	**0.0014 J**
	Post Event 2 Sampling	12/30/2015	14.46	40.97	26.51	<0.50	6.47	1,271	234.0	0.00	**44,000**	**5,700**	**180 J**	**810**	**52**	**220**	**2.1**	<0.50	<0.010
138A	Baseline	2/12/2015	13.91	43.6	29.69	<0.50	6.80	962	-66.0	0.01	**78**	**2,400**	**110**	**820**	**42**	--	**1.6**	**1.3**	<0.010
	Post Event 1 Sampling	3/12/2015	13.38	43.6		<0.50	7.13	1,177	-53.8	0.00	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/17/2015	13.41	43.6	30.19	<0.50	6.65	1,175	-41.1	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	13.45	43.6	30.15	<0.50	6.91	1,218	-56.1	1.55	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	14.02	43.6	29.58	<0.50	6.75	1,212	-39.5	0.00	**47 / 59**	**1,900 / 1,800**	**65 / 77**	**820**	**41**	**140**	**1.7**	**1.2**	**0.00098 J**
	Post Event 1 Sampling	4/29/2015	14.43	43.6	29.17	<0.50	7.57	1,183	-66.7	0.00	**50**	**2,100**	**89**	**810**	**45**	**170**	**2.0**	**1.4**	**0.0015 J**
	Post Event 1 Sampling	5/26/2015	14.88	43.6	28.72	<0.50	7.07	1,071	-66.3	0.00	**68**	**2,300**	**82**	**800**	**42**	**160**	**1.7**	**1.4**	<0.010
	Post Event 1 Sampling	7/1/2015	15.40	43.6	28.20	<0.50	6.44	1,098	-45.0	0.00	**61**	**2,000**	**86**	**780**	**41**	**160**	**1.6**	**1.3**	<0.010
	Post Event 1 Sampling	7/29/2015	16.43	44.39	27.96	<0.50	7.23	1,133	-45.7	0.00	**43 J**	**1,800**	**55**	**880**	**43**	**170**	**1.5**	<0.50	**0.00076 J**
	Post Event 1 Sampling	8/25/2015	16.70	44.39	27.69	<0.50	7.19	1,098	-2.9	0.00	**39**	**1,900**	**68**	**780**	**45**	**180**	**1.6**	**0.18 J**	**0.00074 J**
	Post Event 1 Sampling	9/30/2015	17.18	44.39	27.21	<0.50	7.04	983	-49.8	0.00	**51**	**2,200**	**65**	**800**	**42**	**180**	**1.5**	**0.23 J**	<0.010
	Post Event 1 Sampling	10/27/2015	17.33	44.39	27.06	<0.50	6.83	989	-51.7	0.00	**67**	**2,000**	**94**	**780**	**42**	**170**	**1.4**	<0.50	**0.00081 J**
	Post Event 1 Sampling	11/18/2015	17.20	44.39	27.19	<0.50	6.52	1,073	-55.1	0.00	**90**	**2,100**	**91**	**780**	**45**	**180**	**1.6**	**0.30 J**	<0.010
	Post Event 2 Sampling	12/29/2015	16.55	44.39	27.84	<0.50	6.43	1,100	59.6	0.00	**85**	**2,400**	**86**	**780**	**39**	**160**	**1.5**	<0.50	<0.010
69B1	Baseline	2/11/2015	12.46	42.62	30.16	**1.5**	6.96	507	144.0	1.78	**270**	**14**	<5.0	**490**	**34**	--	<0.020	<0.50	**0.0013 J B**
	Post Event 1 Sampling	3/12/2015	12.73	42.62	29.89	**1.3**	7.32	711	79.1	0.43	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/17/2015	12.77	42.62	29.85	**1.2**	7.01	733	91.2	0.04	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/24/2015	12.95	42.62	29.67	**1.2**	6.97	770	250.4	1.78	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/1/2015	13.26	42.62	29.36	**1.4**	6.80	762	235.0	0.83	**270**	**15**	<5.0	**470**	**35**	**68**	<0.020	<0.20	**0.0017 J**
	Post Event 1 Sampling	4/29/2015	13.49	42.62	29.13	**1.2**	7.36	731	252.6	1.91	**320**	**20**	<5.0	**500**	**40**	**83**	**0.015 J**	<0.20	**0.0019 J**
	Post Event 1 Sampling	5/27/2015	13.87	42.62	28.75	**1.3**	6.96	695	87.0	0.00	**270**	**21**	<5.0	**480**	**38**	**81**	<0.020	<0.20	<0.010
	Post Event 1 Sampling	6/30/2015	14.24	43.62	29.38	**1.3**	6.30	681	118.8	0.43	**250**	**14**	<2.5	**500**	**37**	**77**	<0.020	<0.50	**0.0011 J**
	Post Event 1 Sampling	7/28/2015	16.04	44.33	28.29	**1.2**	7.36	707	80.5	0.22	**290**	**15**	<2.5	**490**	**38**	**79**	<0.020	<0.50	**0.0013 J**
	Post Event 1 Sampling	8/25/2015	16.34	44.33	27.99	**1.2**	7.38	699.0	94.20	**4.03**	**320**	**21**	<5.0	**510**	**39**	**80**	<0.020	<0.50	**0.0017 J**
	Post Event 1 Sampling	9/29/2015	16.38	44.33	27.95	**1.3**	7.20	665.0	126.40	**0.64**	**250 / 330***	**16 / 20***	<5.0	**590**	**37**	**84**	<0.020	<0.50	**0.0014 J**
	Post Event 1 Sampling	10/28/2015	16.50	44.33	27.83	**1.4**	6.41	620	85.2	0.51	**310**	**19**	<5.0	**460**	**37**	**81**	**0.028**	<0.50	**0.0073 J**
	Post Event 1 Sampling	11/19/2015	16.62	44.33	27.71	**1.3**	6.61	672	190.6	0.00	**280**	**17**	<5.0	**480**	**39**	**81**	<0.020	<5.0	**0.0017 J**
	Post Event 2 Sampling	12/30/2015																	
EX-1	Baseline	2/13/2015	18.91	44.20	25.29	<0.50	6.75	820	113.6	3.79	**2,700**	**850**	**50**	**780**	**37**	--	**0.55**	<0.20	<0.010
	Post Event 1 Sampling	3/9/2015	15.30	44.20	28.90	<0.50	6.81	884	54.6	1.63	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/1/2015	18.80	44.20	25.40	<0.50	7.40	1,388	263.6	3.52	--	--	--	**800**	**36**	**140**	**0.67**	<0.20	<0.010
	Post Event 1 Sampling	4/29/2015	19.40	44.20	24.80	<0.50	7.87	1,204	121.9	4.54	--	--	--	**800**	**41**	**170**	**0.73**	<0.20	<0.010

Table E-2
Analytical Data Summary - Sentry Wells, SCRWs, and Vishay Treatment System
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)[1]	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)[2]	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
EX-1	Post Event 1 Sampling	5/7/2015	19.60	44.20	24.60	--	7.01	1,208	79.0	2.16	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	19.60	44.20	24.60	<0.50	7.08	1,089	105.5	2.58	--	--	--	**800**	**39**	**160**	**0.55**	<0.20	<0.010
	Post Event 1 Sampling	7/1/2015	19.82	44.20	24.38	<0.50	6.75	1,278	212.7	2.07	--	--	--	**820**	**39**	**150**	**0.55**	<0.50	<0.010
	Post Event 1 Sampling	7/28/2015	21.40	44.20	22.80	<0.50	7.43	1,130	57.7	4.39	--	--	--	**780**	**41**	**160**	**0.59**	<0.50	<0.010
	Post Event 1 Sampling	8/27/2015	23.60	44.20	20.60	<0.50	7.41	1,313	151.8	4.65	--	--	--	**850**	**37**	**160**	**0.65**	<0.50	<0.010
	Post Event 1 Sampling	10/1/2015				<0.50	7.00	1,172	164.5	2.16	--	--	--	**780**	**39**	**170**	**0.57**	<0.50	<0.010
	Post Event 1 Sampling	10/27/2015				<0.50	7.12	1,051	1.1	2.72	--	--	--	**790**	**39**	**170**	**0.58**	<0.50	**0.0010 J**
	Post Event 1 Sampling	11/18/2015	19.80	44.20	24.40	<0.50	7.00	1,129	-3.1	3.10	--	--	--	**830**	**39**	**160**	**0.34**	<0.50	<0.010
	Post Event 2 Sampling	12/30/2015																	
EX-2	Baseline	2/13/2015		44.10	44.10	<0.50	6.80	775	160.2	4.21	**1,200**	**440**	<50	**720**	**38**	--	**0.048**	<0.20	<0.010
	Post Event 1 Sampling	3/9/2015	15.63	44.10	28.47	**0.83**	6.92	825	215.6	3.01	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/1/2015	17.9	44.10	26.20	<0.50	7.36	1,154	258.5	4.98	--	--	--	**730**	**35**	**120**	**0.076**	**0.18 J**	<0.010
	Post Event 1 Sampling	4/29/2015	17.30	44.10	26.80	<0.50	8.32	1,173	53.9	3.34	--	--	--	**740**	**39**	**140**	**0.081**	<0.20	<0.010
	Post Event 1 Sampling	5/26/2015	19.20	44.10	24.90	<0.50	6.70	1,011	157.7	2.45	--	--	--	**730**	**37**	**140**	**0.087**	<0.20	<0.010
	Post Event 1 Sampling	7/1/2015	19.98	44.10	24.12	<0.50	7.36	494	203.3	2.58	--	--	--	**730**	**36**	**130**	**0.079**	<0.50	<0.010
	Post Event 1 Sampling	7/28/2015	20.50	44.10	23.60	<0.50	7.62	1,006	80.4	4.35	--	--	--	**720**	**38**	**140**	**0.36**	<0.50	<0.010
	Post Event 1 Sampling	8/26/2015	21.00	44.10	23.10	<0.50	7.44	783	188.7	4.69	--	--	--	**770**	**36**	**140**	**0.37**	<0.50	<0.010
	Post Event 1 Sampling	10/1/2015	21.30	44.10	22.80	<0.50	7.19	1,086	136.0	4.54	--	--	--	**730**	**37**	**140**	**0.39**	<0.50	<0.010
	Post Event 1 Sampling	10/27/2015	21.80	44.10	22.30	<0.50	7.44	965	15.1	3.77	--	--	--	**730**	**38**	**140**	**0.36**	<0.50	**0.00080 J**
	Post Event 1 Sampling	11/18/2015	21.60	44.10	22.50	<0.50	7.23	1,046	21.1	4.80	--	--	--	**760**	**40**	**140**	**0.29**	<0.50	<0.010
	Post Event 2 Sampling	12/30/2015																	
EX-3	Baseline	2/13/2015	17.39	43.80	26.41	**28**	6.96	772	184.6	6.65	**590**	**76**	<25	**700**	**38**	--	**0.33**	<0.20	**0.020**
	Post Event 1 Sampling	3/9/2015	16.69	43.80	27.11	**0.28 J**	6.72	828	209.2	1.08	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/1/2015	17.4	43.80	26.40	**13**	7.37	1,176	288.0	7.14	--	--	--	**700**	**36**	**110**	**0.43**	<0.20	**0.013**
	Post Event 1 Sampling	4/29/2015	17.4	43.8	26.40	**12**	7.52	1,149	130.1	5.89	--	--	--	**710**	**39**	**130**	**0.47**	<0.20	**0.012**
	Post Event 1 Sampling	5/26/2015	19.1	43.8	24.70	**11**	7.02	1,006	143.1	3.89	--	--	--	**730**	**38**	**120**	**0.45**	<0.20	**0.011**
	Post Event 1 Sampling	7/1/2015	20.05	43.8	23.75	**8.8**	8.55	467	209.9	4.26	--	--	--	**700**	**37**	**120**	**0.41**	<0.50	**0.0076 J**
	Post Event 1 Sampling	7/28/2015	20.50	43.8	23.30	**6.7**	7.03	567	83.6	3.51	--	--	--	**690**	**39**	**130**	**0.42**	<0.50	**0.0072 J**
	Post Event 1 Sampling	9/4/2015	--	43.8	--	**6.8**	7.72	1,020	121.2	2.29	--	--	--	**700**	**37**	**140**	**0.42**	<0.50	**0.0071 J**
	Post Event 1 Sampling	10/1/2015	21.40	43.8	22.40	**4.0**	7.25	1,059	-25.5	4.87	--	--	--	**710**	**36**	**140**	**0.45**	<0.50	**0.0060 J**
	Post Event 1 Sampling	10/27/2015	21.70	43.8	22.10	**2.9**	7.30	947	88.3	3.52	--	--	--	**720**	**38**	**140**	**0.43**	<0.50	**0.0035 J**
	Post Event 1 Sampling	11/20/2015	21.10	43.8	22.70	**1.6**	8.10	958	132.1	2.23	--	--	--	**740**	**39**	**140**	**0.46**	<0.50	**0.0033 J**
	Post Event 2 Sampling	12/30/2015																	
EX-4	Baseline	2/13/2015	16.69	43.70	27.01	**0.27 J**	6.72	795	146.5	2.84	**1,100**	**160**	<25	**700**	**39**	--	**0.60**	<0.20	<0.010
	Post Event 1 Sampling	3/9/2015	15.90	43.70	27.80	**0.38 J**	6.72	908	258.3	1.18	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/1/2015	17.10	43.70	26.60	**0.32 J**	7.36	1,105	245.7	3.21	--	--	--	**700**	**37**	**110**	**0.66**	<0.20	<0.010
	Post Event 1 Sampling	4/29/2015	17.80	43.70	25.90	**0.16 J**	7.74	1,154	143.9	1.96	--	--	--	**710**	**41**	**140**	**0.75**	<0.20	<0.010
	Post Event 1 Sampling	5/26/2015	18.10	43.70	25.60	**0.21 J**	6.49	962	163.4	0.72	--	--	--	**740**	**39**	**130**	**0.65**	<0.20	<0.010
	Post Event 1 Sampling	7/1/2015	18.96	43.70	24.74	**0.11 J**	7.63	974	154.6	1.90	--	--	--	**700**	**39**	**130**	**0.57**	<0.50	**0.00080 J**
	Post Event 1 Sampling	7/28/2015	19.50	43.70	24.20	<0.50	6.82	512	76.5	1.84	--	--	--	**700**	**41**	**130**	**0.54**	<0.50	<0.010
	Post Event 1 Sampling	8/26/2015	19.60	43.70	24.10	**0.13 J**	6.79	790	134.4	2.29	--	--	--	**760**	**37**	**130**	**0.54**	<0.50	<0.010
	Post Event 1 Sampling	10/1/2015	20.40	43.70	23.30	<0.50	6.93	1,048	98.6	2.69	--	--	--	**720**	**37**	**140**	**0.60**	<0.50	<0.010
	Post Event 1 Sampling	10/27/2015	20.70	43.70	23.00	<0.50	7.27	896	18.3	1.67	--	--	--	**710**	**39**	**150**	**0.54**	<0.50	**0.00070 J**
	Post Event 1 Sampling	11/20/2015	20.40	43.70	23.30	<0.50	7.60	905	242.1	0.66	--	--	--	**720**	**40**	**150**	**0.58**	<0.50	<0.010
	Post Event 2 Sampling	12/30/2015																	
GSF-1A	Baseline	2/13/2015	11.75	39.46	27.71	<0.50	6.87	871	159.7	5.03	**690**	**310**	<10	**700**	**40**	--	**0.95**	<0.20	<0.010
	Post Event 1 Sampling	4/1/2015	12.5	39.46	26.96	<0.50	7.60	1,107	280.1	3.56	--	--	--	**710**	**38**	**120**	**0.67**	<0.20	<0.010
	Post Event 1 Sampling	4/29/2015	12.40	39.46	27.06	<0.50	7.93	1,084	114.9	3.77	--	--	--	**730**	**42**	**140**	**0.98**	<0.20	<0.010
	Post Event 1 Sampling	5/26/2015	13.00	39.46	26.46	<0.50	6.91	974	104.2	3.16	--	--	--	**700**	**41**	**140**	**0.92**	<0.20	<0.010
	Post Event 1 Sampling	07/01/015	13.39	39.46	26.07	<0.50	7.12	977	160.0	2.80	--	--	--	**710**	**41**	**140**	**0.82**	<0.50	<0.010
	Post Event 1 Sampling	7/29/2015	13.70	39.46	25.76	<0.50	6.37	1,147	36.6	2.07	--	--	--	**880**	**51**	**150**	**0.056**	<0.50	**0.0011 J**
	Post Event 1 Sampling	9/4/2015	--	39.46	--	<0.50	7.51	1,023	145.7	3.15	--	--	--	**780**	**41**	**150**	**0.43**	<0.50	<0.010
	Post Event 1 Sampling	10/1/2015	14.60	39.46	24.86	<0.50	7.22	1,036	-37.6	3.10	--	--	--	**720**	**39**	**140**	**0.95**	<0.50	<0.010
	Post Event 1 Sampling	10/27/2015	14.80	39.46	24.66	<0.50	7.24	926	50.2	2.84	--	--	--	**700**	**41**	**140**	**0.90**	<0.50	<0.010
	Post Event 1 Sampling	11/20/2015	14.80	39.46	24.66	<0.50	7.15	798	238.8	0.74	--	--	--	**510**	**43**	**150**	**0.89**	<0.50	<0.010
	Post Event 2 Sampling	12/30/2015																	
GSF-1B1	Baseline	2/13/2015	27.10	39.46	12.36	**1.4**	7.06	1,580	159.0	2.47	**2,700**	**27 J**	<50	**510**	**36**	--	<0.020	<0.20	<0.010
	Post Event 1 Sampling	4/1/2015	26.50	39.46	12.96	**1.3**	7.97	758	264.2	2.32	--	--	--	**510**	**35**	**81**	<0.020	<0.20	**0.0018 J**
	Post Event 1 Sampling	4/29/2015	27.10	39.46	12.36	**1.3**	8.63	815	94.1	2.30	--	--	--	**510**	**41**	**95**	**0.022**	<0.20	**0.0018 J**
	Post Event 1 Sampling	5/26/2015	29.50	39.46	9.96	**1.3**	7.18	717	115.9	2.75	--	--	--	**490**	**39**	**90**	<0.020	<0.20	**0.0015 J**
	Post Event 1 Sampling	7/1/2015	30.93	39.46	8.53	**1.4**	7.44	724	273.0	2.12	--	--	--	**520**	**37**	**87**	<0.020	<0.50	**0.0017 J**

Table E-2
Analytical Data Summary - Sentry Wells, SCRWs, and Vishay Treatment System
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)[1]	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)[2]	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr
GSF-1B1	Post Event 1 Sampling	7/29/2015	32.70	39.46	6.76	**1.3**	6.31	757	26.0	1.97	--	--	--	**560**	**40**	**89**	<0.020	<0.50	**0.0016 J**
	Post Event 1 Sampling	8/27/2015	32.90	39.46	6.56	**1.3**	7.53	775	65.0	2.01	--	--	--	**510**	**37**	**88**	<0.020	<0.50	**0.0018 J**
	Post Event 1 Sampling	10/1/2015	23.70	39.46	15.76	**1.4 H**	7.38	748	17.4	4.50	--	--	--	**500**	**37**	**94**	<0.020	<0.50	**0.0015 J**
	Post Event 1 Sampling	10/27/2015	24.05	39.46	15.41	**1.4**	6.92	662	97.7	2.90	--	--	--	**510**	**38**	**93**	<0.020	<0.50	**0.0018 J**
	Post Event 1 Sampling	11/20/2015	25.30	39.46	14.16	**1.4**	7.47	545	222.8	0.46	--	--	--	**750**	**40**	**94**	**0.0050 J**	**0.38 J**	**0.0013 J**
	Post Event 2 Sampling	12/30/2015																	
Vishay Treatment System Influent/Effluent																			
Vishay Influent	Baseline	2/13/2015	--	--	--	**3.4**	6.73	721	179.1	3.00	**1,900 / 1,800**	**200 / 190**	<50 / <50	**660**	**38**	--	**0.23**	<0.20	<0.010
	Post Event 1 Sampling	3/6/2015	--	--	--	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/26/2015	--	--	--	**2.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/17/2015	--	--	--	**2.1**	6.99	710	243.7	2.36	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/29/2015	--	--	--	**1.5**	7.10	936	196.6	2.60	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/30/2015	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/29/2015	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	9/2/2015	--	--	--	**0.93**	7.12	1,154	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/1/2015	--	--	--	**0.61**	7.07	983	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/27/2015	--	--	--	**0.60**	7.04	885	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	11/19/2015	--	--	--	<0.50	7.26	724	--	--	--	--	--	--	--	--	--	--	--
	Post Event 2	12/30/2015																	
Vishay Effluent	Baseline	2/13/2015	--	--	--	**12.0**	8.44	749	178.2	8.50	<0.50	<0.50	<0.50	**620**	**39**	--	**0.24**	<0.20	**0.0018 J**
	Post Event 1 Sampling	3/6/2015	--	--	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/26/2015	--	--	--	**6.4**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	--	--	--	**8.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/17/2015	--	--	--	**5.2**	7.91	750	193.8	8.45	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/29/2015	--	--	--	**3.3**	8.53	940	177.4	8.72	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	--	--	--	**3.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/30/2015	--	--	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/29/2015	--	--	--	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	9/2/2015	--	--	--	**6.7**	8.47	1,108	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/1/2015	--	--	--	**14**	8.48	954	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/27/2015	--	--	--	**4.3 J**	7.60	858	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	11/19/2015	--	--	--	**3.9 J**	8.70	700	--	--	--	--	--	--	--	--	--	--	--
	Post Event 2 Sampling	12/30/2015																	
Pre Contingency	Post Event 1 Sampling	3/26/2015	--	--	--	**8.6**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	--	--	--	**11.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/17/2015	--	--	--	**10.0**	7.24	711	251.7	11.48	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/29/2015	--	--	--	**9.6**	7.17	941	278.4	8.79	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	--	--	--	**12.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/1/2015	--	--	--	**13.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/29/2015	--	--	--	**10.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	9/2/2015	--	--	--	**10.0**	7.04	1,134	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/1/2015	--	--	--	**74 H**	6.97	991	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/27/2015	--	--	--	**6.5 J**	7.15	943	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	11/19/2015	--	--	--	**8.8 J**	6.99	720	--	--	--	--	--	--	--	--	--	--	--
	Post Event 2 Sampling	12/30/2015																	
Post Contingency	Post Event 1 Sampling	3/26/2015	--	--	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	3/31/2015	--	--	--	**8.4**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/17/2015	--	--	--	**6.2**	6.97	698	254.5	8.88	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	4/29/2015	--	--	--	**5.6**	7.11	969	258.0	10.84	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	5/26/2015	--	--	--	**6.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	6/30/2015	--	--	--	**9.3**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	7/29/2015	--	--	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	9/2/2015	--	--	--	**8.4**	7.06	1,162	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/1/2015	--	--	--	**31 H**	6.88	1,000	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	10/27/2015	--	--	--	**5.0 J**	7.05	964	--	--	--	--	--	--	--	--	--	--	--
	Post Event 1 Sampling	11/19/2015	--	--	--	**4.8 J**	7.21	724	--	--	--	--	--	--	--	--	--	--	--
	Post Event 2 Sampling	12/30/2015																	

Table E-2
Analytical Data Summary - Sentry Wells, SCRWs, and Vishay Treatment System
401 National Avenue ISCO Pilot Study
Mountain View, California

Well ID	Event	Date	DTW (ft btoc)	TOC Elevation (ft MSL)	WL Elevation (ft MSL)	Cr(VI) (ug/L)[1]	Field Parameters				cVOCs (ug/L)			TDS (mg/L)	Anions (mg/L)		Total Dissolved Metals (mg/L)		
							pH	EC (us/cm)	ORP (mV)	DO (mg/L)[2]	TCE	cDCE	VC		Chloride	Sulfate	Mn	Fe	Cr

Notes:
405 National Avenue Source Control Recovery Wells (SCRWs) were shut down on 4 March 2015 and offline prior to collection of samples on 9 March 2015.
1. Wells 39A and 41A analyzed for hexavalent chromium by EPA Method 7196 on 3 March 2015. All other samples analyzed for hexavalent chromium by EPA Method 7199.
2. DO not required to be measured as part of monitoring plan of pilot study wells.
* Laboratory error with their internal lab calibration which biased VOC results low. Adjusted concentrations are included with original concentrations

ISCO	In Situ Chemical Oxidation
TOC	Top of casing
WL	Water level
DTW	Depth to water
EC	Electrical conductivity
Cr (VI)	Hexavalent chromium by EPA Method 7196/ 7199
ORP	Oxidation-reduction potential
DO	Dissolved oxygen
cVOCs	Chlorinated volatile organic compounds
TCE	Trichloroethene by EPA Method 8260B
cDCE	Cis-1,2-Dichloroethene by EPA Method 8260B
VC	Vinyl chloride by EPA Method 8260B
TDS	Total dissolved solids by Standard Method 2540C
Mn	Total dissolved manganese by EPA Method 6010B
Fe	Total dissolved iron by EPA Method 6010B

Cr	Total dissolved chromium by EPA Method 6010B
--	Sample not collected/Measurement not taken
<	Analyte not deteced above reporting limit shown
ft btoc	Feet below top of casing
ft MSL	Feet above mean sea level
us/cm	micro siemens per centimeter
mV	millivolts
mg/L	milligrams per liter
ug/L	micrograms per liter
J	Result is less than reporting limit but greater than or equal to the method detection limit and the concentration is an estimated value
H	Sample analyzed slightly outside of analytical method holding time
B	Compound was detected in associated laboratory blank sample
	Well temporarily inaccessible due to ongoing construction activities. Vishay Treatment system temporarily shut down for relocation.
	WL not gauged due to blockage in the riser