Weiss Associates *Environmental Science, Engineering and Management*

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2010 ANNUAL PROGRESS REPORT

for

Former Fairchild Buildings 1-4
515/545 Whisman Road and 313 Fairchild Drive
Middlefield-Ellis-Whisman Area
Mountain View, California

prepared for

Schlumberger Technology Corporation
225 Schlumberger Drive
Sugar Land, TX 77478

June 10, 2011

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Submitted to

USEPA, Region 9, Superfund Division
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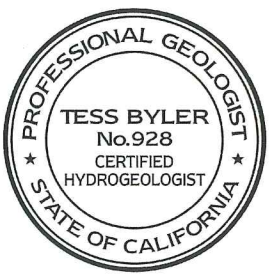
Weiss Associates' work for Schlumberger Technology Corporation was conducted under my supervision. To the best of my knowledge, the data contained in this report are true and accurate and satisfy the scope of work prescribed by the client for this project in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents in this report.



Tess Byler June 10, 2011

Tess Byler, P.G., C.Hg. Date
Senior Project Hydrogeologist
(CA # 928, expiration Nov. 2012)

CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

106 Order	Section 106 Administrative Order for Remedial Design and Remedial Action
Buildings 1 and 2	former Fairchild facilities at 515/545 Whisman Road
Buildings 3 and 4	former Fairchild facilities at 313 Fairchild Drive
ft	feet
ft bgs	feet below ground surface
GAC	granular activated carbon
Geosyntec	Geosyntec Consultants
gpm	gallons per minute
Fairchild	Fairchild Semiconductor Corporation
K	hydraulic conductivity
µg/L	micrograms per liter
mg/kg	milligram per kilogram
MEW	Middlefield-Ellis-Whisman
MCLs	maximum contaminant levels
NASA	National Aeronautics and Space Administration
NPDES	National Pollutant Discharge Elimination System
PRPs	potentially responsible parties
PLC	programmable logic controller
QA/QC	quality assurance and quality control
RAO	remedial action objective
RGRP	Regional Groundwater Remediation Program
ROD	Record of Decision
RRWs	regional recovery wells
SCRWs	source control recovery wells
System 1	groundwater treatment system located at 515 Whisman Road
System 3	groundwater treatment system located at 313 Fairchild Drive
STC	Schlumberger Technology Corporation
TCE	trichloroethene
Site	former Fairchild Facilities at 515 and 545 Whisman Road (Buildings 1 and 2) and 313 Fairchild Drive (Buildings 3 and 4) in Mountain View, California

USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds
Water Board	California Regional Water Quality Control Board - San Francisco Bay Region
Weiss	Weiss Associates

SUMMARY

This *2010 Annual Progress Report for Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Middlefield-Ellis-Whisman Area, Mountain View, California* (the Site; Figures 1, 2, and 3) summarizes Site activities and data from January 1 through December 31, 2010 and monitoring data for the past five years. This 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 (USEPA) and the USEPA's correspondence prescribing annual report contents (USEPA, 1990a and USEPA, 2005). The 2010 Annual Report Remedy Performance Checklist is included as Appendix A.

The groundwater containment and treatment remedy at the Site removes volatile organic compounds (VOCs) from groundwater. It consists of the following components:

- A slurry wall around former Buildings 1-4 that is approximately 40 feet (ft) deep and extends into the A/B1 aquitard that is continuous beneath the Site;
- Two groundwater treatment systems, Fairchild Systems 1 and 3, that remove VOCs using activated carbon under National Pollutant Discharge Elimination System (NPDES) Permit CAG912003, Order No. R2-2009-0059;
- Seventeen source control recovery wells (SCRWs); and
- 34 monitoring wells.

The treatment systems treat groundwater from:

- Four regional recovery wells (RRWs) that are part of the Regional Groundwater Remediation Program (RGRP);
- Four SCRWs from former Fairchild Building 9;
- One SCRW from former Fairchild Building 18; and
- A basement dewatering system in former Fairchild Building 18.

Site activities during this reporting period were conducted in compliance with the 106 Order. They comprise continued operation, monitoring, and maintenance activities of the Buildings 1-4 groundwater remediation systems, quarterly slurry wall water-level monitoring, semiannual groundwater level monitoring in March and November, annual groundwater sampling from November through December 2010, and submittal of information related to the USEPA's Site-wide groundwater focused feasibility study.

Groundwater Treatment: During 2010, approximately 44 million gallons of groundwater were treated and 711 pounds of VOCs were removed by the Site treatment systems. From January 1 through December 31, 2010, System 1 ran 96% of the time, and System 3 ran 97% of the time. The extraction and treatment systems operated within all effluent limits established by the discharge permits.

Groundwater Capture Evaluation: Groundwater elevation and chemical monitoring results from 2010 demonstrate that the Site extraction wells continue to achieve adequate capture compared to target capture based on converging lines of evidence, including graphical flow net analysis and chemical concentration trends. VOC concentrations in groundwater continue to remain well below historical maxima and generally show long-term decreasing trends.

Technical Assessment: The groundwater extraction, treatment, and containment systems are functioning as intended. Since the treatment systems were installed, trichloroethene (TCE) concentrations have generally decreased by an order of magnitude or more.

Planned 2011 Activities: Schlumberger Technology Corporation will continue operating the Fairchild groundwater treatment systems and monitor their performance during 2011. The 2011 Annual Progress Report will be submitted to the USEPA by June 15, 2012.

1. INTRODUCTION

This 2010 Annual Progress Report was prepared by Weiss Associates (Weiss) on behalf of Schlumberger Technology Corporation (STC) for the former Fairchild Semiconductor Corporation (Fairchild) facilities located at 515 and 545 Whisman Road (Buildings 1 and 2), and 313 Fairchild Drive (Buildings 3 and 4) in Mountain View, California (the Site; Figures 1, 2, and 3). Geosyntec Consultants (Geosyntec) assisted with the preparation of this report.

This report summarizes Site activities from January 1 through December 31, 2010 and monitoring data from the past five years. This 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 (USEPA) and the USEPA's correspondence prescribing 2004 and future annual report contents (USEPA, 1990a and USEPA 2005).

1.1 Site Background

Former Fairchild Buildings 1-4 were located at 515/545 North Whisman Road and 313 Fairchild Drive, in Mountain View California (Figure 2). Buildings 1-4 functioned as facilities for chemical mixing and silicon wafer manufacturing at Fairchild Semiconductor Corporation's Linear Division from the early 1960s to 1989. The primary constituent of concern at the Site is trichloroethene (TCE) in groundwater from historical underground tanks and piping, sumps, and/or surface spills. 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	Current Occupants
Buildings 1 and 2 515/545 North Whisman Road	515/545 North Whisman Road	515 North Whisman Road: Symantec 545 North Whisman Road: Symantec
Buildings 3 and 4 313 Fairchild Drive	313/323 Fairchild Drive	313 Fairchild Drive: unoccupied 323 Fairchild Drive: unoccupied

The former Fairchild Buildings 1-4 Site is located within the MEW Area, defined by the USEPA (USEPA, 1989) as an approximate 1/4-square mile area bounded by Middlefield Road on the south, Ellis Street on the east, Whisman Road on the west, and Highway 101 on the north (Figure 2).

Remedial investigation and feasibility studies were completed in 1988 (HLA, 1987; Canonie, 1988), with the USEPA issuing a Record of Decision (ROD) in 1989. The ROD and two subsequent Explanation of Significant Differences specify the remedial actions for the MEW Area (USEPA, 1989, 1990b, 1996). Remedial actions are being conducted pursuant to the 106 Order issued to nine respondents[1] in November 1990, and the MEW Consent Decree entered into by Raytheon Company and Intel Corporation in 1991, by which they agreed to design, construct, and implement the regional remedial action portion of the remedy selected in the ROD.

[1] The nine 106 Order Respondents are Fairchild, Schlumberger Technology Corporation, National Semiconductor Corporation, NEC Electronics, Siltec Corporation, Sobrato Development Companies, General Instrument Corporation, Tracor X-Ray, and Union Carbide Chemicals and Plastics Company.

Remedial actions within the MEW Area include facility-specific activities by the individual potentially responsible parties (PRPs) (such as this facility-specific Site), and a Regional Groundwater Remediation Program (RGRP) that addresses commingled volatile organic compounds (VOCs) that have migrated beyond the facility-specific areas and cannot be attributed to a single source. The primary VOC of concern is TCE.

The land use at the Site is industrial/research/commercial, with nearby residential development.

1.2 Local Hydrogeology

Subsurface geology consists of interbedded sediments ranging in grain size from silty clay to sandy gravel. The water-bearing zones defined for the MEW Area are summarized below:

Groundwater Zones	Approximate Depth Interval (feet below ground surface)
A[a]	20 to 45
B1[b]	50 to 75
B2	75 to 110
B3	120 to 160
C	200 to 240
Deep	>240

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

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

> greater than

The upper groundwater zone is subdivided into two water-bearing zones, the A-zone and the B-zone, which are separated by the A/B1 aquitard. The B-zone has been further subdivided into three zones. From youngest to oldest (shallowest to deepest), these are the B1-, B2-, and B3-zones, separated by aquitards, designated as the B1/B2 aquitard and the B2/B3 aquitard. The lower groundwater zones occur below the B/C aquitard, from about 200 feet below ground surface (ft bgs). The B/C aquitard is the major confining layer beneath the MEW Area. Two lower groundwater zones have been defined: the C-zone and what has been termed deep groundwater, below the C-zone (HLA, 1987; Intel, 1987).

Ranges of hydraulic conductivity (K), hydraulic gradient, and transmissivity of the upper zone, i.e., the zone above the B/C aquitard, calculated from pumping tests conducted at the MEW Area from 1986 through 2005, are presented in the table below (Canonie, 1986a, 1986b, 1987, and 1988; Geomatrix, 2004; HLA, 1986 and 1987; Locus, 1998; PRC, 1991; Navy, 2005; and Weiss, 1995 and 2005).

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

Currently and historically, the horizontal component of groundwater flow beneath the Site is generally towards the north during non-pumping and pumping conditions. The Site groundwater gradients and velocities have been locally altered near source control recovery wells (SCRWs), regional recovery wells (RRWs), and the Fairchild and Raytheon slurry walls (Weiss Associates, 2009).

The vertical component of groundwater flow is generally upward from the B1- to the A-zone, but it is locally downward in some areas of the Site (HLA, 1987). Groundwater extraction has likely exerted an influence on measured vertical gradients. Vertical gradients below the B1-zone are generally upward (Geosyntec et al., 2008).

1.3 Description of Remedy

As specified in the ROD, the remedy consists of groundwater extraction and treatment. The remedy is designed to protect local water supplies and to remediate or control groundwater that contains elevated concentrations of chemicals, including control of discharge of such groundwater to surface water.[2] 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).[3] Soil cleanup standards for the MEW Area are 0.5 milligram per kilogram (mg/kg) of TCE for all soils outside of the slurry walls and 1 mg/kg TCE for soil inside the slurry walls. The ROD states that the chemical ratio of TCE to other chemicals found at the Site is such that achieving the cleanup goal for TCE will result in cleanup of the other Site chemicals to at least their respective federal maximum contaminant levels (MCLs).

Cleanup has been addressed in two stages: initial actions and a long-term remedial phase (USEPA, 1989). Initial cleanup actions included tank removals, well sealing, soil removal and treatment, slurry wall construction, and local groundwater extraction and treatment. The Site is in the long-term remedial phase, which consists of extraction and treatment of groundwater by air stripping towers or liquid-phase granular activated carbon (GAC). Remedial activities are being conducted by individual MEW PRPs as well as the MEW RGRP.

As part of the initial stage, in 1986, Fairchild installed a subsurface slurry wall at Buildings 1-4 that is approximately 40 ft deep and is keyed a minimum of 2 ft into the A/B1 aquitard. Fifteen SCRWs were installed inside the slurry wall for Buildings 1-4, and the extracted groundwater was conveyed to air strippers that Fairchild installed from 1982 through 1986. An additional plume definition program for the MEW Area was completed in 1992, and between 1991 and 1995, preliminary and final design documents for soil and groundwater source control measures were developed and submitted to the USEPA (Canonie, 1993, 1994a, and 1994b). Soil cleanup actions in the initial stage included *in-situ* vapor extraction with treatment by vapor-phase GAC and excavation with treatment by aeration. In 1996, Fairchild completed soil cleanup at 515/545 Whisman Road and 313 Fairchild Drive by excavating and treating 15,000 cubic yards of soil. All soil remediation at the MEW Area was completed by 2001 (USEPA, 2009).

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

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

As part of the long-term remedial phase, in 2003, the treatment systems were replaced with GAC systems (RMT, 2003). The First Five-Year Remedy review for the MEW Site was completed in 2004 (USEPA, 2004). The Second Five-Year Remedy review was completed in October 2009 (USEPA, 2009).

Currently, groundwater extracted from the Site is conveyed via double-contained piping either to Fairchild System 1 or Fairchild System 3. Eight SCRWs, AE/RW-9-1, AE/RW-9-2, RW-4A, RW-20A, RW-21A, RW-25A, RW-4(B1), and RW-4(B2), and one RRW, 38B2, pump groundwater for treatment at System 1 at 545 Whisman Road. Wells AE/RW-9-1 and AE/RW-9-2 are associated with Building 9, and RW-25A is associated with Building 18. Seven SCRWs, RW-5A, RW-7A, RW-18A, RW-27A, RW-5(B1), RW-7(B1), and RW-12(B1), and three RRWs, RW-9A, RW-9(B1), and RW-9(B2), are currently pumping groundwater to treatment at System 3 at 313 Fairchild Drive. Progress of the remediation during this phase is tracked by taking groundwater samples from extraction and monitoring wells on Site, construction details for which are provided in Table 1.

1.4 Summary of 2010 Site Activities and Deliverables

Table 2 provides the 2010 monitoring and reporting schedule for the Site. Site activities from January through December 2010 were conducted in compliance with the 106 Order (USEPA, 1990a). The activities comprise:

- Continuing groundwater extraction and treatment;
- Monitoring the groundwater treatment systems weekly for operation and flow rates;
- Sampling the treatment systems monthly in compliance with the general VOC permit Water Board Order No. R2-2009-0059 for Fairchild Systems 1 and 3;
- Submitting quarterly Self-Monitoring Reports to the Water Board for volume of water discharged and amount of VOCs extracted and treated under NPDES Permit CAG912003 on February 11, May 14, August 13, and November 15;
- Collecting quarterly groundwater elevation measurements in Site slurry wall well pairs on March 25, May 27, August 26, and November 18;
- Collecting semiannual groundwater elevation measurements in Site monitoring and extraction wells on March 25 and November 18;
- Removing sulfuric acid from the Environmental Compliance Plans in January, 2010 because this constituent is no longer used on-Site;
- Renewing the City of Mountain View Environmental Compliance Plans and permits on April 29, 2010 for Systems 1 and 3;
- Turning on seven extraction wells January through May 2010 as part of system optimization activities;
- Distributing the 2009 Annual Progress Report to the USEPA and MEW Distribution List parties on June 15;
- Performing activities related to USEPA's August 16, 2010 ROD Amendment for Vapor Intrusion;

- Submitting a Notice of Intent requesting permit modification on October 6 to increase the maximum discharge flow rate from 120 gallons per minute (gpm) to 150 gpm at System 1, and from 50 gpm to 85 gpm at System 3;
- Collecting annual groundwater samples from Site monitoring and extraction wells in November and December 2010 to assess remedial progress;
- Collecting additional groundwater samples from the Site in November and December 2010 to assess natural attenuation;
- Annual settlement monitoring on December 7 and 8;
- Assessing the progress of remedial actions during 2010; and
- Planning remedial actions for 2011.

Section 2 of this report summarizes Site groundwater remedial activities conducted during this reporting period. Sections 3 through 7 document additional activities, problems encountered, and a technical assessment; present conclusions and recommendations; and discuss planned activities for 2011. Supporting data are presented in Figures 1 through 15, Tables 1 through 15, and Appendices A through D.

2. GROUNDWATER EXTRACTION AND TREATMENT

A combined total of approximately 44 million gallons of groundwater were treated and 711 pounds of VOCs were removed by the Site treatment systems during this reporting period. Table 3 provides the target flow rates for the groundwater extraction wells. Tables 4 and 5 present the monthly average flow rates and monthly extraction totals for System 1, respectively. Tables 6 and 7 present the monthly average flow rates and monthly extractions totals for System 3, respectively. Tables 8a through 9b summarize results for laboratory analytical data and field parameters from samples collected at Systems 1 and 3 during 2010.

VOC mass removal for the two Site treatment systems is summarized in Tables 10 and 11. Cumulative groundwater extracted and mass removed by Systems 1 and 3 are illustrated in Figures 4 and 5, respectively.

As required by the Site discharge permit, extraction well and treatment system flow readings are recorded weekly and the Site treatment systems are sampled monthly. The results are reported quarterly to the Water Board. Appendix B contains the laboratory analytical reports, and Appendix C provides the quality assurance/quality control (QA/QC) evaluation for samples collected at the Site during 2010.

Treatment system discharges were within all effluent limits established by NPDES Permit CAG912003, Order No. R2-2009-0059.

2.1 Treatment System Description

This section describes the status of the groundwater treatment systems at 515 and 545 Whisman Road, (former Buildings 1 and 2) and 313 Fairchild Drive (former Buildings 3 and 4) during 2010. Containment at the Site is provided by the Buildings 1-4 slurry wall enclosure, which is approximately 1,100 ft long, 500 ft wide, and 40 ft deep, extending a minimum of two ft into the A/B1 aquitard.

2.1.1 Extraction and Treatment at Former Buildings 1 and 2 (System 1)

During 2010, System 1 extracted and removed approximately 24 million gallons of groundwater and 407 pounds of VOCs. During 2010, System 1 included the following extraction and treatment components:

- One operating RRW;
- January through March, 13 SCRWs: four operating, eight temporarily off-line, and one permanently off-line;
- Through April: 13 SCRWs: five operating, seven temporarily off-line, and one permanently off-line;
- May through December, 13 SCRWs: eight operating, four temporarily off-line, and one permanently off-line;
- One basement dewatering sump conveyed to the treatment system from Fairchild Building 18 (Weiss, 2011);

- Two sediment filters in parallel;
- Three 5,000-pound GAC vessels in series; and
- Electrical distribution and control panels, a programmable logic control (PLC), and an auto-dialer.

The status of the System 1 RRW and SCRWs varied throughout 2010 due to extraction well rate optimizations activities (Geosyntec 2010).

2.1.2 Extraction and Treatment at Former Buildings 3 and 4 (System 3)

During 2010, System 3 extracted and removed approximately 20 million gallons of groundwater and 304 pounds of VOCs. During 2010, System 3 included the following extraction and treatment components:

- January through March, three RRWs: two operating and one temporarily off-line;
- January through March, nine SCRWs: five operating, two temporarily off-line, and two permanently off-line;
- April through December, three RRWs: three operating;
- April through December, nine SCRWs: six operating, one temporarily off-line, and two permanently off-line;
- Two sediment filters in parallel;
- Three 5,000-pound GAC vessels in series; and
- Electrical distribution and control panels, a PLC, and an auto-dialer.

The status of the System 3 RRWs and SCRWs varied throughout 2010 due to extraction well rate optimizations activities (Geosyntec 2010).

2.1.3 Status of Extraction and Monitoring Wells

2.1.3.1 Extraction Wells

A summary of the all of the Systems 1 and 3 extraction wells and their current operational status is listed below:

2010 Extraction Well Status			
System 1 Extraction Wells		**System 3 Extraction Wells**	
Operational			
38B2 (RRW)	RW-21A	RW-5A	RW-9(B1) (RRW)
RW-4A	RW-25A	RW-5(B1)	RW-9(B2) (RRW)
RW-4(B1)	AE/RW-9-1	RW-7A	RW-12(B1)
RW-4(B2)	AE/RW-9-2	RW-7(B1)	RW-18A
RW-20A		RW-9A (RRW)	RW-27A
Temporarily Off-line			
RW-3A	RW-16A		
RW-3(B1)	RW-28A		
Permanently Off-line			
RW-3(B2)		RW-5(B2)	RW-7(B2)

Seven wells were restarted in 2010. Four wells remained temporarily off-line since August 2007 with approval by the USEPA (USEPA, 2007). Extraction wells RW-3(B2) and RW-5(B2) have been off-line since 1999, and well RW-7(B2) has been off-line since February 2000 (RMT, 2000).

Extraction well flow rates were set according to the target rates assigned in *Addendum to 3 September 2008 Optimization Evaluation Fairchild Sites* (Geosyntec, 2010).

2.1.3.2. Monitoring Wells

Currently, 34 monitoring wells are used to evaluate the Buildings 1-4 Site. Twenty-two of the monitoring wells are in the A-zone, seven monitoring wells are in the B1-zone, and five monitoring wells are in the B2-zone. Water levels are measured quarterly in 11 slurry wall well pairs and semiannually in other monitoring wells. Water quality samples are collected annually in 23 of the 34 monitoring wells. Monitoring and extraction well construction details are presented in Table 1 and Figure 3.

2.2 Extraction and Treatment System Operation and Maintenance

From January 1 through December 31, 2010, the two Site treatment systems ran nearly continuously. System 1 ran 96% of the time, and System 3 ran 97% of the time. At System 1 during the year, a total of 27.5 tons of spent carbon were generated, and 1.2 tons of spent sediment filters were generated during 2010. At System 3, a total of 17.5 tons of spent carbon were generated, and 0.44 tons of spent sediment filters were generated. The spent carbon is classified as non-hazardous and was sent to Calgon Carbon's Neville Island Pennsylvania facility for reactivation. Spent sediment filters were disposed as hazardous waste at US Ecology's hazardous waste treatment and disposal facility in Beatty, Nevada.

The following list summarizes non-routine maintenance and operational activities conducted on System 1 and the wells that discharged to System 1 during 2010:

Fairchild Treatment *System 1*			
2010 Dates	**Component**	**Description**	**Regulatory Notification**
January 14-15	Treatment System	The treatment system was off-line for approximately 35 hours for a routine carbon change.	Not Required
January 16 and 20	Treatment System	The treatment system was off-line for approximately 6 hours on January 16 and 20, because of floods in the 38B2 vault caused by rainfall.	Not Required
January 22	Treatment System	The treatment system was off-line for approximately one hour because of a flood in the RW-4(B1) well vault caused by rainfall.	Not Required
February 4	AE/RW-9-2	Extraction well AE/RW-9-2 was off-line for approximately 22 hours because of a pump change and repairs to the well head.	Not Required
March 2-3	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
April 12-13	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
May 13-14	Treatment System	The treatment system was off-line for approximately 24 hours for a routine carbon change.	Not Required

Fairchild Treatment *System 1*			
2010 Dates	**Component**	**Description**	**Regulatory Notification**
May 14	RW-4A	Extraction well RW-4A was off-line for approximately 14 hours because of a low-flow alert.	Not Required
June 15-16	Treatment System	The treatment system was off-line for approximately 25 hours for a routine carbon change.	Not Required
June 19	Treatment System	The treatment system was off-line for approximately 33 hours because of a sump high level alert caused by irrigation water.	Not Required
June 21	AE/RW-9-1	Extraction well AE/RW-9-1 was off-line for approximately 2 hours because of a low-flow alert.	Not Required
June 26	Treatment System	The treatment system was off-line for approximately 9 hours because of a flood at well vault RW-3(B1) caused by irrigation water.	Not Required
July 15-16	Treatment System	The treatment system was off-line for approximately 30 hours for a routine carbon change.	Not Required
August 9	AE/RW-9-2	Extraction well AE/RW-9-2 was off-line for approximately 2 hours because of a low-flow alert.	Not Required
August 11-12	Treatment System	The treatment system was off-line for approximately 23 hours for a routine carbon change.	Not Required
September 2-3	AE/RW-9-2	This extraction well tends to accumulate orange colored microbial deposits (fouling) and requires roughly two pump changes every year to maintain performance. The well was off-line for approximately 22 hours because of a low-flow alert and subsequent pump replacement.	Not Required
September 8-9	Treatment System	The treatment system was off-line for approximately 21 hours for a routine carbon change.	Not Required
October 4-5	Treatment System	The treatment system was off-line for approximately 28 hours for a routine carbon change.	Not Required
October 27-28	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
November 5-10	AE/RW-9-2	This extraction well was off-line for a total of approximately 100 hours because of multiple low-flow alerts. The paddle wheel was cleaned and the o-ring changed. At no time was the well off-line for 72 consecutive hours.	Not Required
November 30-December 1	Treatment System	The treatment system was off-line for approximately 24 hours for a routine carbon change.	Not Required
December 13	RW-4(B2)	This well was off-line for approximately 5 hours because of a low-flow alarm.	Not Required
December 16-17	Treatment System	The treatment system was off-line for approximately 30 hours for a routine carbon change.	Not Required

The following list summarizes non-routine maintenance and operational activities conducted on System 3 and the wells that discharged to System 3 during 2010.

Fairchild Treatment *System 3*			
2010 Dates	**Component**	**Description**	**Regulatory Notification**
January 13	Treatment System	The treatment system was off-line for approximately 7 hours because of a sump high level alert due to clogged filters.	Not Required
February 3-4	Treatment System	The treatment system was off-line for approximately 25 hours for a routine carbon change.	Not Required
February 9	Treatment System	The treatment system was off-line for approximately 8 hours because of a sump high level alert due to rain.	Not Required
April 2	Treatment System	The treatment system was off-line for approximately 5 hours because of a sump high level alert due to clogged filters. A new sump pump was installed April 5.	Not Required
May 13	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
July 1-2	Treatment System	The treatment system was off-line for approximately 8 hours because of a sump high level alert due to clogged filters.	Not Required
July 15	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
July 16-17	Treatment System	The treatment system was off-line for approximately 13 hours because of a sump high level alert. The sump pump failed to come online after the carbon change. It was turned on July 17.	Not Required
September 1-2	Treatment System	The treatment system was off-line for approximately 14 hours because of a sump high level alert due to clogged filters.	Not Required
September 8-9	Treatment System	The treatment system was off-line for approximately 29 hours for a routine carbon change.	Not Required
October 2	Treatment System	The treatment system was off-line for approximately 6 hours because of a sump high level alert due to rain.	Not Required
October 27-28	Treatment System	The treatment system was off-line for approximately 25 hours for a routine carbon change.	Not Required
December 16-17	Treatment System	The treatment system was off-line for approximately 30 hours for a routine carbon change.	Not Required

The USEPA and Water Board are required to be notified of extraction well and system down-time events as per the following guidelines:

1. USEPA: *The owner and/or operator of the RGRP/Fairchild treatment system will make a best effort to orally notify USEPA within 24 hours of a RRW, SCRW, or system shutdown that occurs for more than 72 hours.*

2. Water Board: *If the treatment system is shut down for more than 120 consecutive hours after the start up period (maintenance, repair, violations, etc.) the reason(s) for shut down, proposed corrective action(s), and estimated start-up date shall be orally reported to the Water Board within five days of shut down and a written submission shall also be provided within 15 days of shut down.*

As shown above, no notifications of well or system shut-downs were required during 2010.

2.3 Groundwater Level Monitoring

During this reporting period, groundwater elevations were recorded in all Site monitoring wells on March 25 and November 18, 2010. Water levels were measured in slurry wall well pairs quarterly from March through November 2010 (Table 12). Hydrographs of Site slurry wall well pair water levels are presented in Figures 6 through 9.

Potentiometric surface maps and estimated capture zones for Buildings 1-4 are presented in Figures 10 through15.

2.4 Groundwater Quality Monitoring

The 2010 annual groundwater quality sampling event was conducted in November and December 2010. The event included supplemental sampling for geochemical parameters (Geosyntec, 2011b). In addition, monitoring well 129A, located on the east side of the Buildings 1-4 slurry wall, was sampled for VOCs. This well was last sampled in 1992, with 5,880 µg/L total VOCs detected. The 2010 results demonstrate that total VOC concentrations in this well have decreased to 516 µg/L, of which 340 µg/L are TCE.

Chemical analytical results for the previous five years (2006 through 2010) are summarized in Table 13. TCE isopleths are presented in Figures 11, 13, and 15 and are based on concentration contours using data from all MEW wells sampled in 2010 as presented in the MEW RGRP Annual Progress Report (Geosyntec, 2011).

Time–concentration graphs for monitoring and extraction wells in the Buildings 1-4 area are presented in Appendix D. The data presented in Table 13 and Appendix D show that for the wells sampled in 2010, TCE concentrations in groundwater in most Site wells are well below historical maximums and indicate steady to declining concentration trends.

2.5 Hydraulic Control and Capture Zone Analysis

2.5.1 Methodology

Capture zone analysis is the process of evaluating field observations of hydraulic heads and groundwater chemistry to estimate the capture zone achieved by the groundwater extraction system, and then comparing the estimated capture zone with a target capture zone to determine if capture is sufficient (USEPA, 2008).

Hydraulic capture from the Buildings 1-4 extraction wells was estimated for March and November 2010 by graphical flow net evaluation of groundwater flow streamlines drawn perpendicular to groundwater contours to derive time-dependent estimated capture zones snapshots. The graphical analysis was guided by calculated distances to the stagnation point and capture zone width using the analytical solution of Javandel and Tsang (1986). Because the calculation method assumes a homogeneous, isotropic, two-dimensional groundwater flow zone and is dependent on a regionally estimated value of transmissivity, the calculated distances are of secondary importance compared with measured water-level data and the resulting potentiometric surface.

The following six steps were used for the Buildings 1-4 capture evaluation:

Step 1: Review Site data, Site conceptual model, and remedy objectives.

Step 2: Define Site-specific target capture zones.

Step 3: Generate potentiometric surface maps using interpolation of measured water levels.

Step 4: Calculate capture zone width.

Step 5: Evaluate concentration trends for wells outside of the target capture zone.

Step 6: Estimate capture using steps 1-5, compare to target capture zone(s), and assess uncertainties and data gaps (Section 2.5.4).

2.5.2 Comparison with Target Captures

The target capture areas for the SCRWs outside the Site slurry wall are the modeled capture zones depicted in the final remedial design document for the MEW Area South of Highway 101, (Canonie, 1994; Smith, 1996). Target capture for wells inside the slurry wall was assumed to be the width of the slurry wall, since the wall provides the primary containment method. Estimated 2010 capture based on graphical flow net evaluation depicted in Figures 10 through 15 indicates that actual capture snapshots in March and November are similar to target captures for all operating extraction wells. Estimated captures in the A/A1, B1/A2, and B2- zones are generally similar or somewhat larger than target captures.

2.5.3 Horizontal and Vertical Gradients

Groundwater elevations were recorded quarterly in March, May, August, and November 2010 in the following slurry wall monitoring well pairs: 127A/33A, 128A/84A, 136A/133A, 130A/59A, 76A/118A, 156A/157A, 129A/121A, 20B1/33A, 60B1/118A, 115B1/124A, and 119B1/133A (Table 12). These well pairs are used to evaluate the direction of horizontal gradient across the slurry wall and the direction of vertical gradient across the A/B aquitard. Well pair locations and horizontal gradient direction are shown in Figure 10.

Figures 6 through 9 present graphs of hydraulic head difference between slurry wall well pairs at the Site grouped by upgradient, crossgradient, downgradient, and vertical gradient well pairs. The results of the well pair analysis indicate:

- Horizontal gradients were generally inward on the upgradient (south) and crossgradient (west and east) sides of the slurry wall. Gradients were generally outward on the downgradient (north) side of the slurry wall.
- Inside the slurry wall, vertical gradients between the B1-zone and A-zone in 2010 were upward in well pair 119B1/133A and downward in well pairs 20B1/33A and 60B1/118A. The vertical gradient for well pair 115B1/124A changed from upward to downward in November 2010. Vertical gradient measurements in these wells since 1987 are variable (Figure 9).

The horizontal and vertical gradients recorded during this reporting period are generally consistent with historical observations.

2.5.4 Capture Assessment

The 2010 capture evaluation is summarized below:

Step	2010 Status
Step 1: Review Site Data and Site Conceptual Model and Remedy Objectives	Site data, Site conceptual model (Geosyntec 2011a), and remedy objectives were reviewed and determined to be adequate to assess capture.
Step 2: Define "Target Capture Zone(s)"	Target capture is defined on the basis of modeled capture developed during remedial design; it is shown in Figures 10-15. For wells within the slurry wall, target capture is the slurry wall boundaries.
Step 3a: Create Water Level Maps	Potentiometric surface contours are presented in Figures 10 through 15. Water levels at extraction wells were measured through piezometers constructed in the filter packs and therefore were considered reliable for use in constructing potentiometric surface maps. Water levels inside and outside the slurry wall enclosures were contoured separately. Graphical flow net analysis of the potentiometric surface contours was used in addition to the calculated capture zone widths.
Step 3b: Water Level Pairs	As shown in Table 12 and Figures 6 through 9, inward gradients exist in five upgradient and crossgradient slurry wall well pairs. Three well pairs at the downgradient end of the slurry wall and one well pair at the southwest corner of the wall (up- /crossgradient) have outward gradients. Vertical gradients are both upward and downward between the A- and B1-zones.
Step 4a: Calculate Capture Zone Widths	Tables 14 and 15 present the results of the capture zone width calculations for March and November 2010.
Step 5: Evaluate Concentration Trends	Long-term trends in VOC concentrations are generally decreasing to stable, as indicated by the time concentration plots in Appendix D.
Step 6: Estimate Capture Zones and Compare with Target Capture Zone(s)	Vertical and horizontal VOC plume capture in 2010 meets target captures for all groundwater zones on the basis of converging lines of evidence, including graphical flow net analysis and relatively stable 5 µg/L isoconcentration contours since 1992 in the A/A1 and B1/A2 groundwater zones.

3. OTHER ACTIVITIES

3.1 Optimization

Extraction well rates were optimized in 2010 (Geosyntec, 2010). The following wells that were temporarily shut down with USEPA approval since 2007 were turned back on:

- System 1: RW-4A, RW-20A, RW-21A, and RW-4(B1).
- System 3: RW-9A, RW-12(B1).

The 2010 target and annual average rates are provided in Table 3. Monthly average rates are shown in Table 4. The well pumps were adjusted frequently during the year to meet or exceed their target extraction rates.

3.2 Air/Vapor Intrusion

The USEPA issued a ROD amendment on August 16, 2010 to address vapor intrusion. The MEW parties continued to work with the USEPA and local entities to implement the ROD amendment during 2010.

3.3 Annual Settlement Survey

An annual soil settlement survey was performed on December 7 and 8, 2010. The purpose of these annual measurements is to evaluate any potential adverse effects on the Site facilities and whether long-term remedial groundwater extraction could affect ground settlement in the MEWArea.

A qualified geotechnical engineer reviewed settlement and water-level elevation data and concluded that the measured values of ground elevation change do not appear to be related to groundwater extraction. Additional information on the settlement survey can be found in the *RGRP* 2010 Annual Progress Report (Geosyntec, 2011b).

4. PROBLEMS ENCOUNTERED

Section 2.2 summarizes all non-routine operations and maintenance events at Systems 1 and 3. No other problems related to the Buildings 1-4 Site were encountered.

5. TECHNICAL ASSESSMENT

The following assessment of the groundwater remedy performance for the Site is based on data collected through 2010.

- The remedy is functioning as intended. The Buildings 1-4 treatment systems continue to function as planned. The *2010 Annual Report Remedy Performance Checklist* for the Site and four other former Fairchild facilities is included as Appendix A.

- Plume capture has been achieved. Groundwater elevation and chemical monitoring results from 2010 demonstrate that the SCRWs and RRWs at the Site continue to achieve adequate capture as indicated by graphical flow net analysis and chemical concentration trends.

- TCE concentrations are stable to decreasing over time. TCE concentration trends in Buildings 1-4 wells within and downgradient of the slurry wall indicate stable or declining concentrations over time based on review of concentration-time plots in Appendix D and Table 13. Current concentrations are below historical TCE concentrations for this area, and TCE isopleths indicate a stable perimeter, with an overall reduction in VOC mass.

- Vertical gradients are variable. Vertical gradients between the B1-zone and the A-zone were upwards at well pair 119B1/133A, and downward in well pairs 20B1/33A and 60B1/118A during 2010. The gradient for well pair 115B1/124A was upward for three of four quarters during 2010 but was downward in the fourth quarter measurement collected November 2010. The vertical gradients recorded during this reporting period are consistent with historical observations.

- Slurry wall horizontal gradients are variable. Horizontal gradients in 2010 were consistently inward along the upgradient (southern) and crossgradient (western and eastern) sides of the slurry walls, and outward along the downgradient (northern) side of the slurry wall. These horizontal gradients are generally consistent with historical observations.

6. CONCLUSIONS AND RECOMMENDATIONS

The Buildings 1-4 remedy is functioning as intended. Capture snapshots from March and November 2010 meet or exceed target capture areas as indicated by converging lines of evidence, including graphical flow net analysis and concentration trends.

Approximately 44 million gallons of groundwater were treated and 711 pounds of VOCs were removed by the Site treatment systems during 2010. From January 1 through December 31, 2010, Site Treatment Systems 1 and 3 operated nearly continuously (at 96% and 97%, respectively), and no significant problems related to system operations were noted in 2010.

7. UPCOMING WORK IN 2011 AND PLANNED FUTURE ACTIVITIES

Activities planned for 2011 include:

- Continuing groundwater extraction, treatment, and monitoring in accordance with the Site monitoring and reporting schedule.
- Continuing coordination with the USEPA on the ROD amendment for vapor intrusion and the MEW Area groundwater focused feasibility study.

The effectiveness and progress of Buildings 1-4 remedial actions during 2011 will continue to be evaluated using data generated from operation, maintenance, and monitoring activities in accordance with the Site monitoring and reporting schedule. All activities will be documented in the *2011 Annual Progress Report*, which will be submitted to the USEPA by June 15, 2012.

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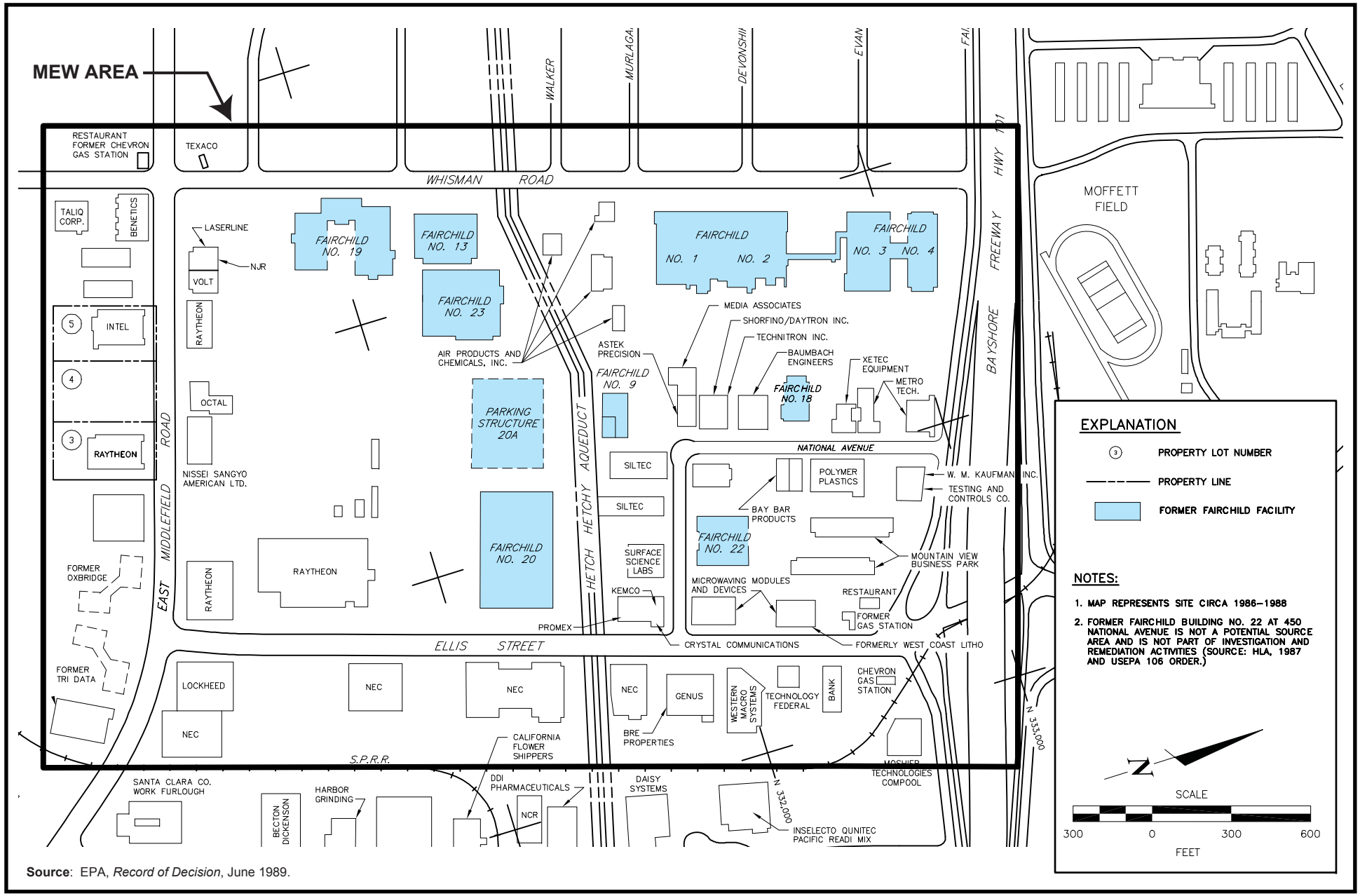
FIGURES

Figure 1. Site Location, MEW Area, Mountain View, California



Source: EPA, *Record of Decision*, June 1989.

Figure 2. Previous Building Configurations, Former Fairchild Facilities, MEW Area, Mountain View, California

MEW Area

Perimeter Rd
Bayshore Fwy/Hwy 101
Fairchild Dr
Evandale Ave
Devonshire Ave
Murlagan Ave
Sherland Ave
Flynn Ave
Bailey Rd
Dailey Rd
Ellis St

61A
11B2
21B1
156A
157A
147B1
148B2
59A
130A
RW-7A
RW-7(B1)
RW-9(B1)R
76A
62A
RW-7(B2)
RW-9A
RW-9(B2)
60B1
118A
RW-27A
RW-5(B1)
RW-5(B2)
RW-5A
67A
Fairchild System 3
57A
113B2
124A
115B1
REG-MW-2A
RW-25A
RW-4A
RW-12(B1)
RW-18A
RGRP - South
46A
RW-4(B1)
31B3
51A
RW-4(B2)
23B2
121A
RW-28A
129A
68A
38B2
2B1
RW-3A
33A
RW-3(B1)
Fairchild System 1
10B2
20B1
127A
RW-3(B2)
RW-16A
84A
128A
118B2
133A
119B1
136A
AE/RW-9-1
RW-21A
AE/RW-9-2
RW-20A
Former Fairchild Building 9 Site
Fairchild System 19
Former Fairchild Building 19 Site
Raytheon System
Raytheon Site

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- 515 /545 Whisman Road and 313 Fairchild Drive (Current - 515 /545 North Whisman Road and 313/323 Fairchild Drive)
- Fairchild Groundwater Treatment Systems 1 and 3
- Groundwater Treatment Plant
- Slurry Wall
- Building
- Road
- Treatment-System Pipeline (arrows show direction of flow)
- Treatment-System Discharge Pipeline (arrows show direction of flow)

N

0 250 500 750 Feet

Figure 3

Site Map and Well Network
Former Fairchild Buildings 1 through 4
Mountain View, California

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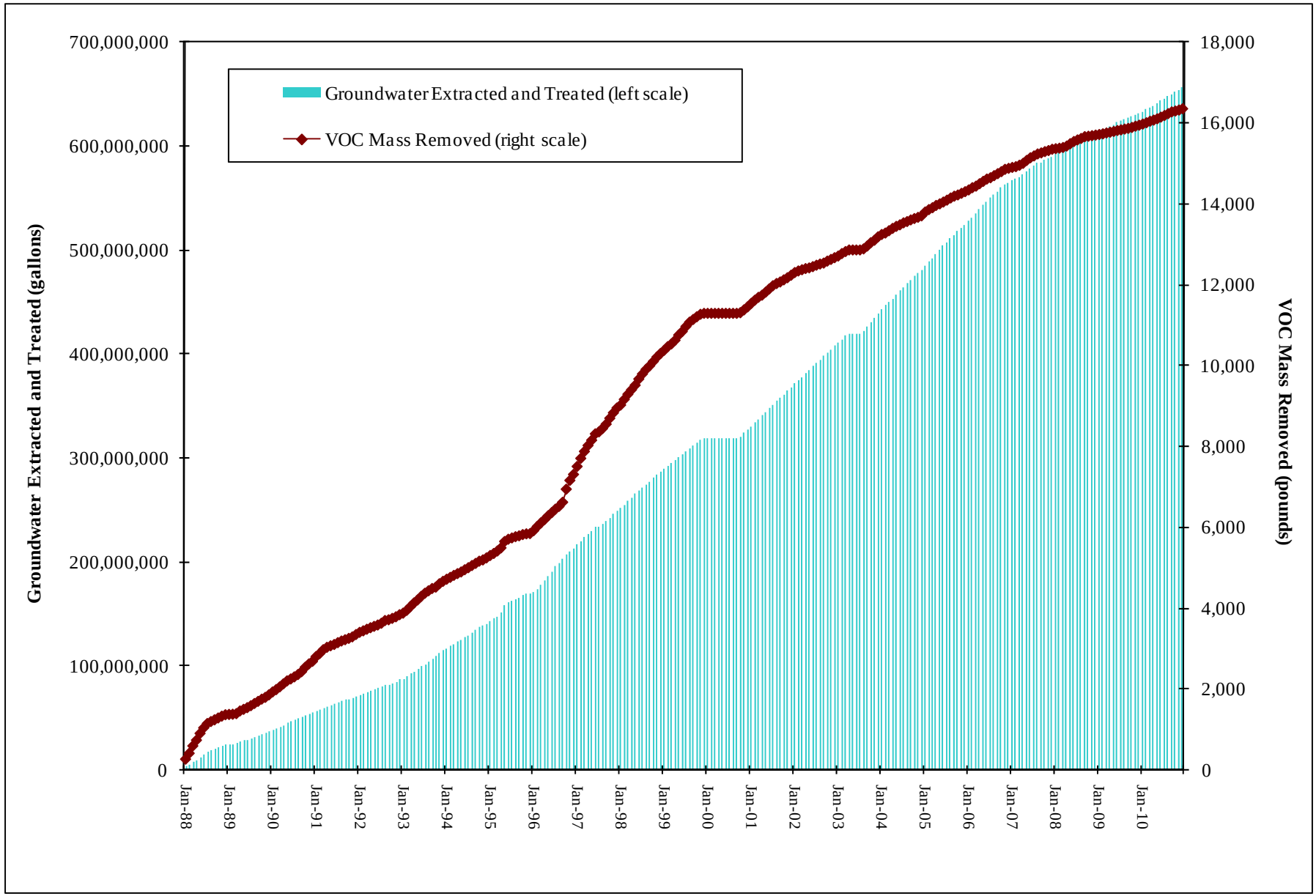


Figure 4. Cumulative Groundwater and VOC Mass Removal Summary, Fairchild System 1, 515 Whisman Road, Mountain View, California.

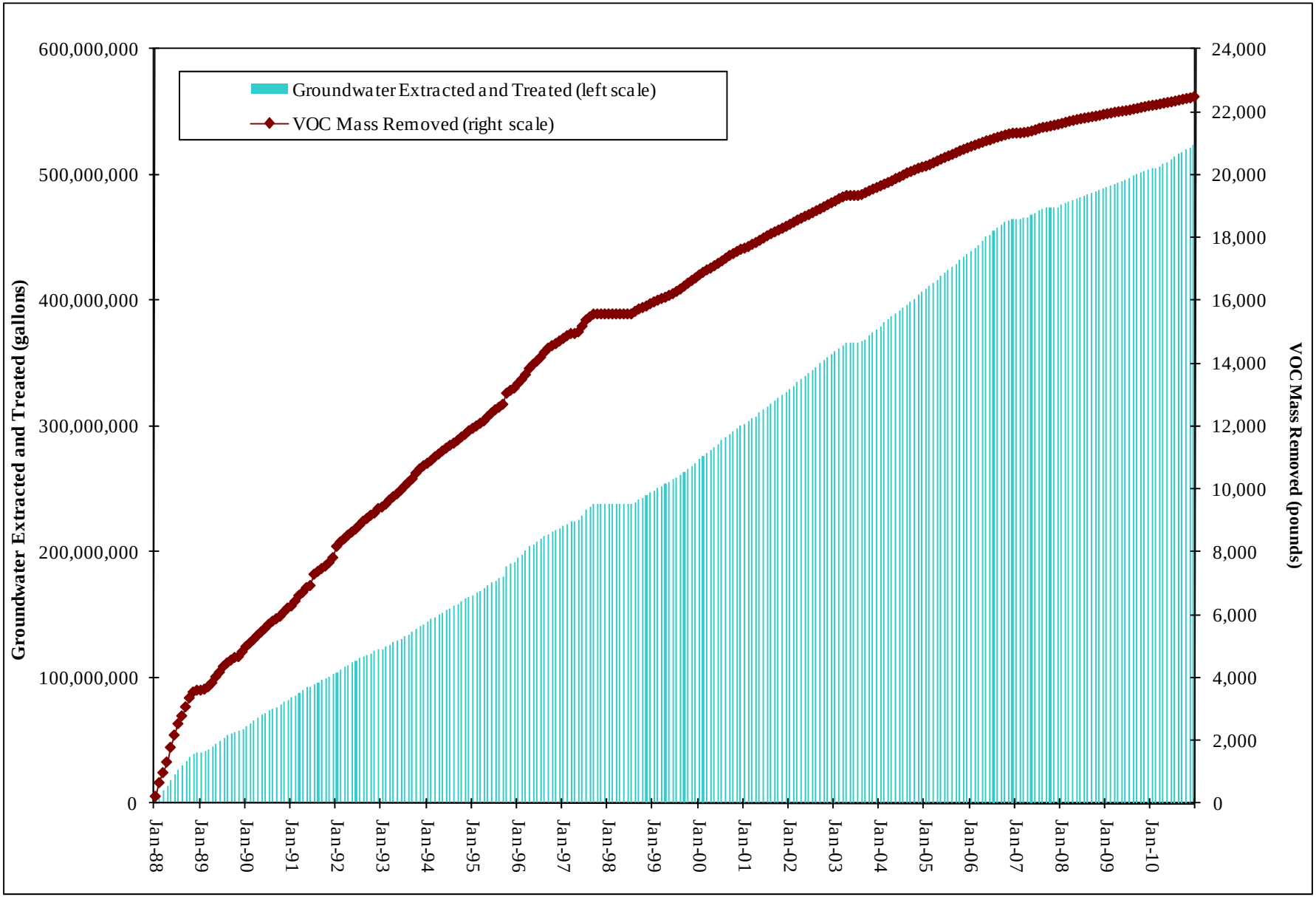
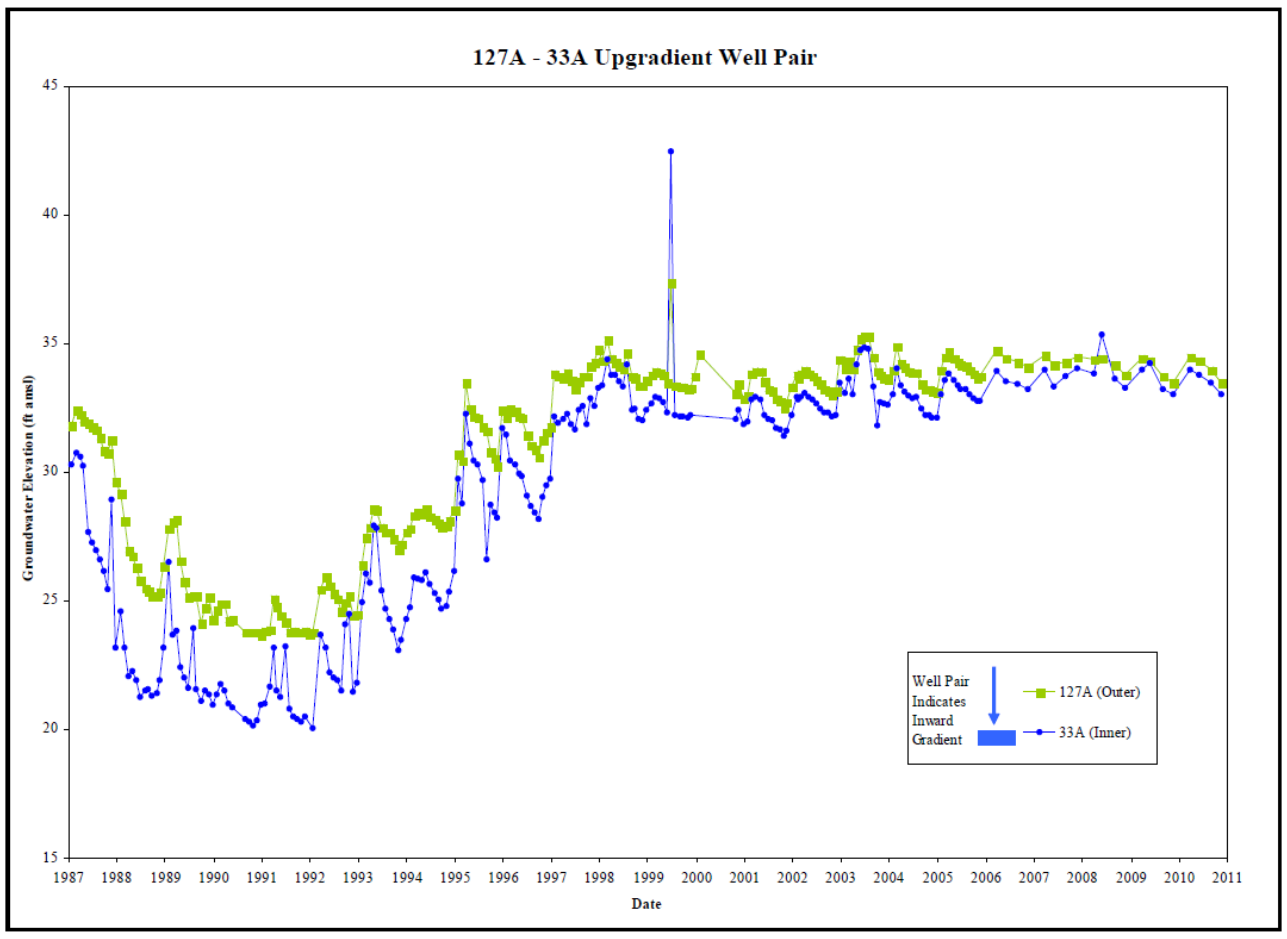


Figure 5. Cumulative Groundwater and VOC Mass Removal Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California.



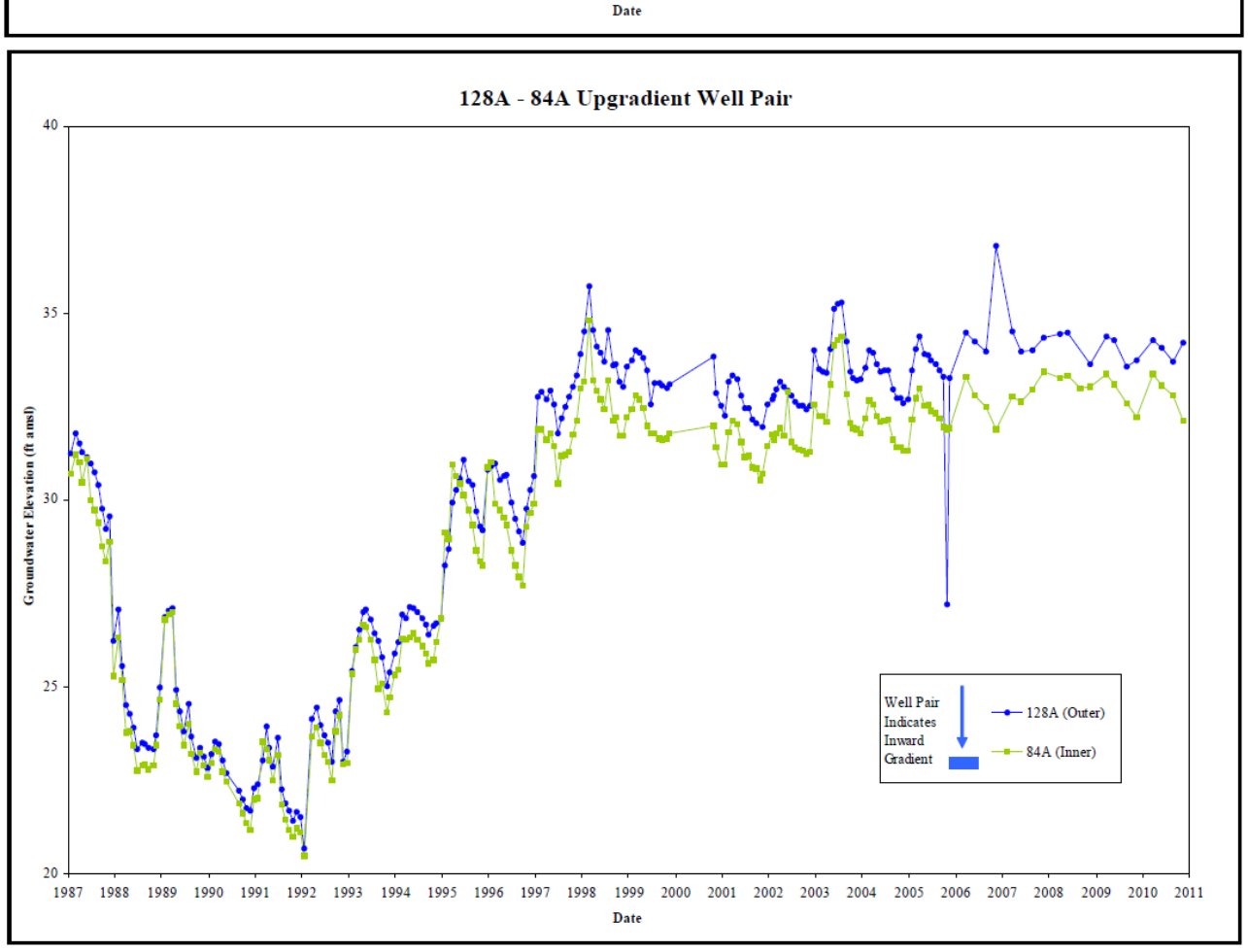
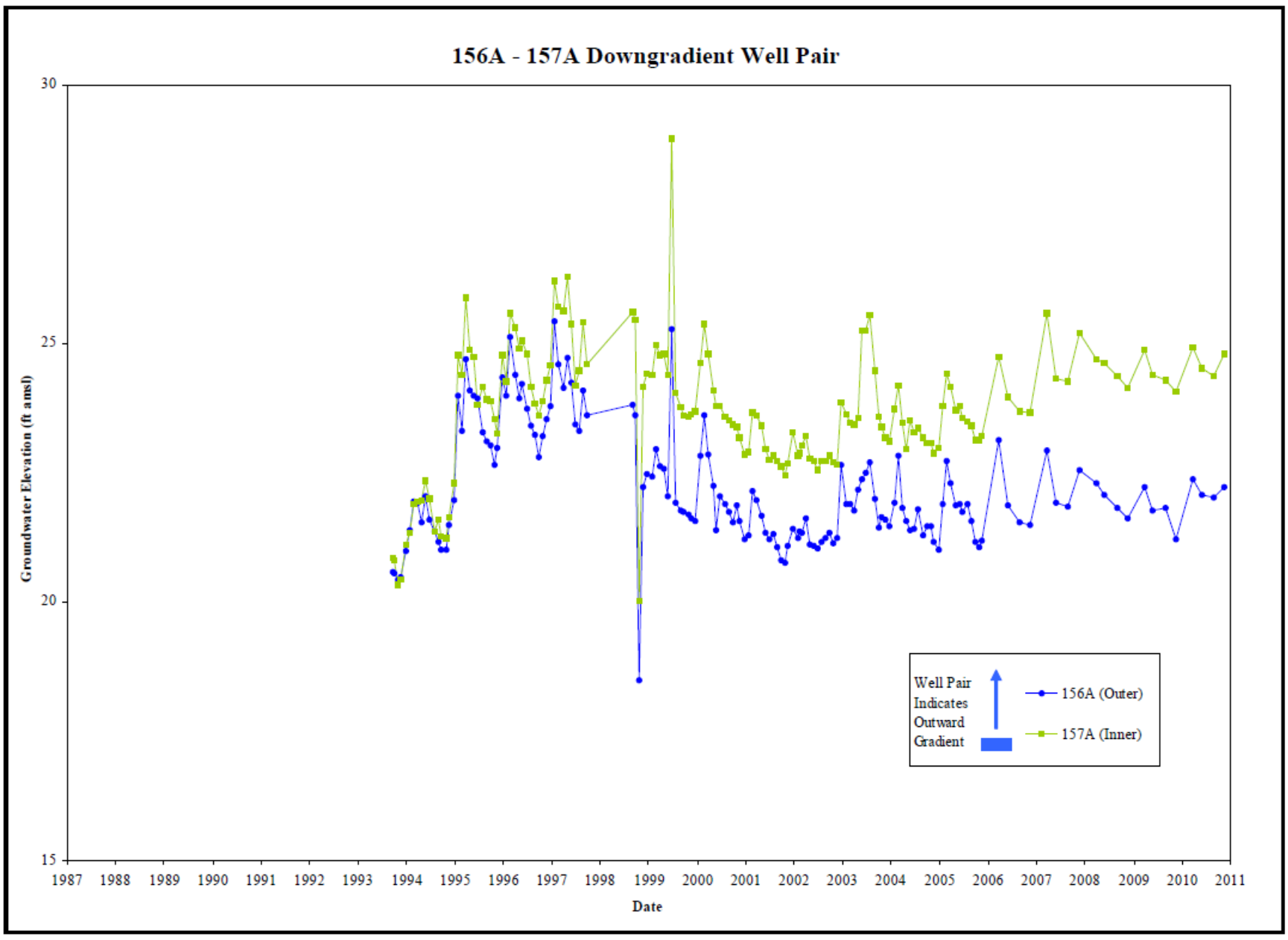


Figure 6. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Upgradient Wells, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California



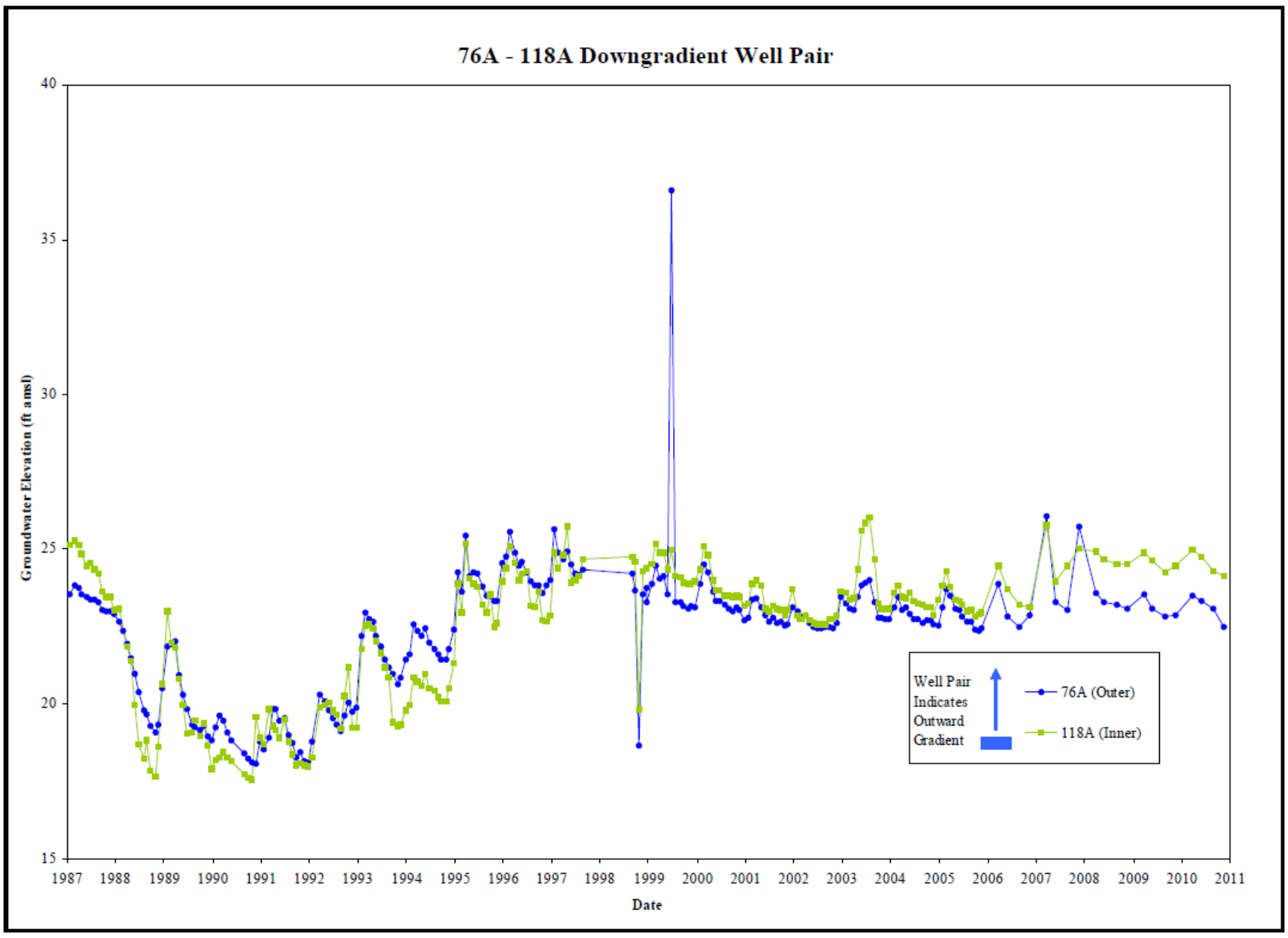
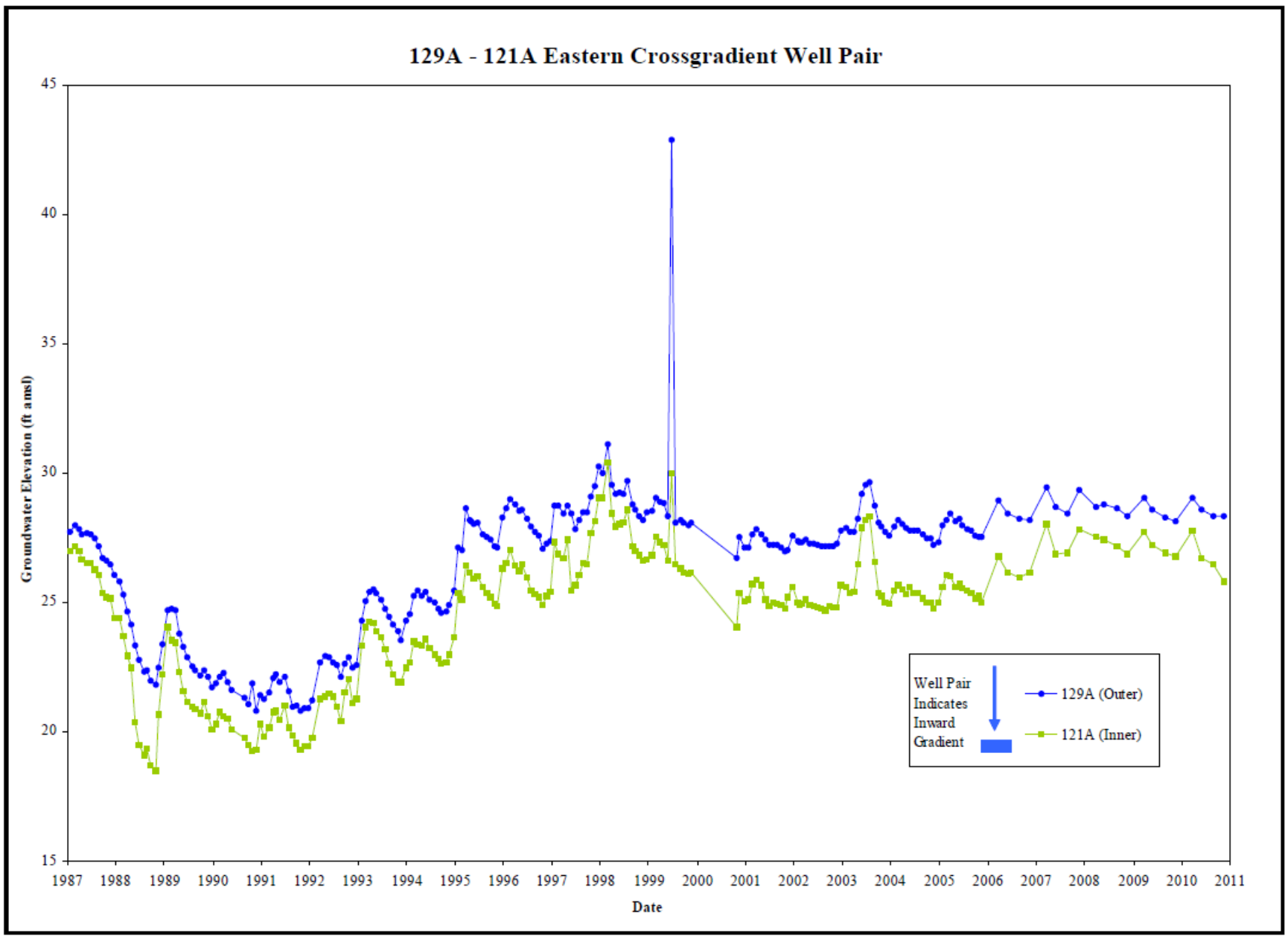


Figure 7. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Downgradient Wells, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California



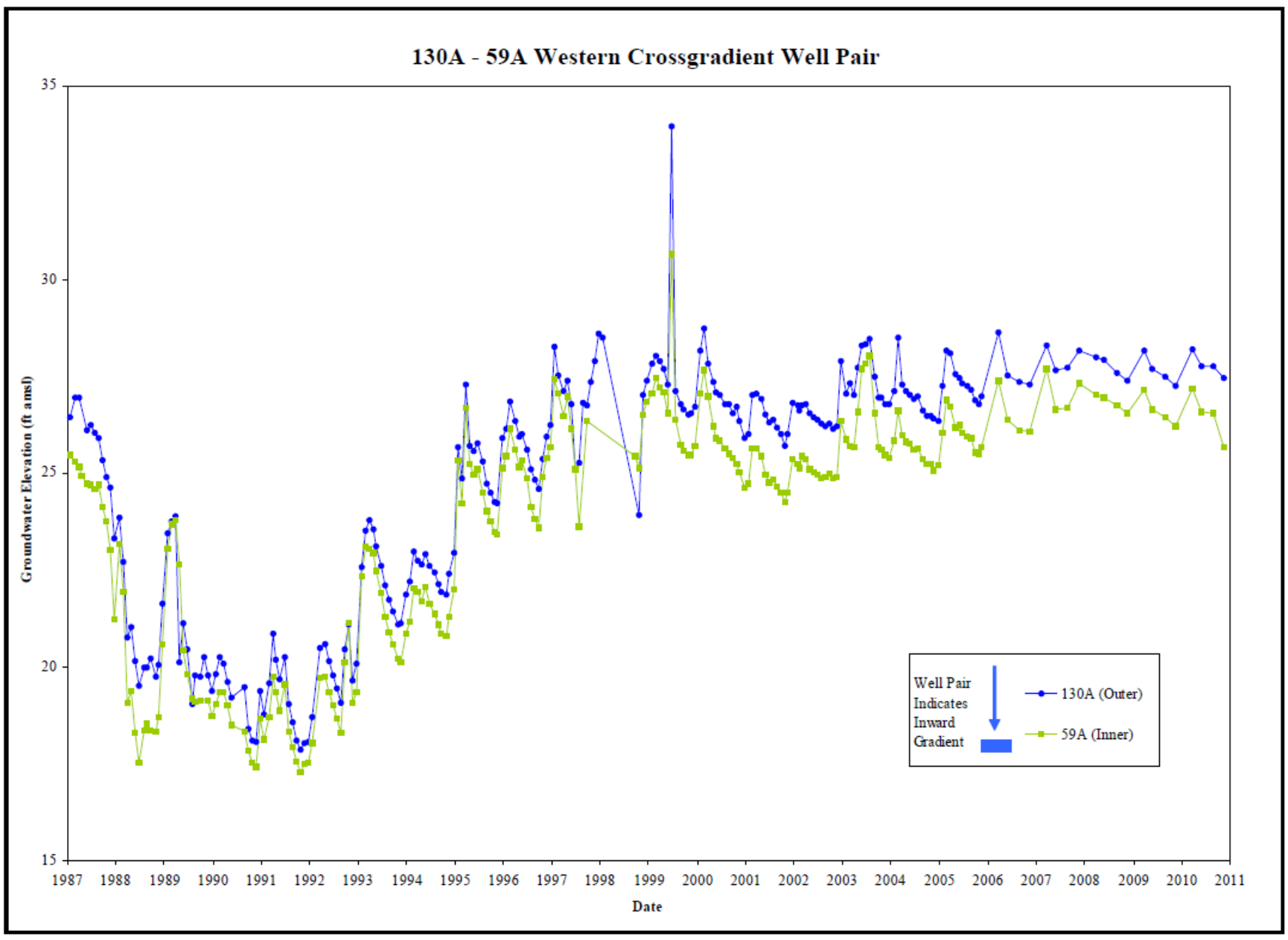
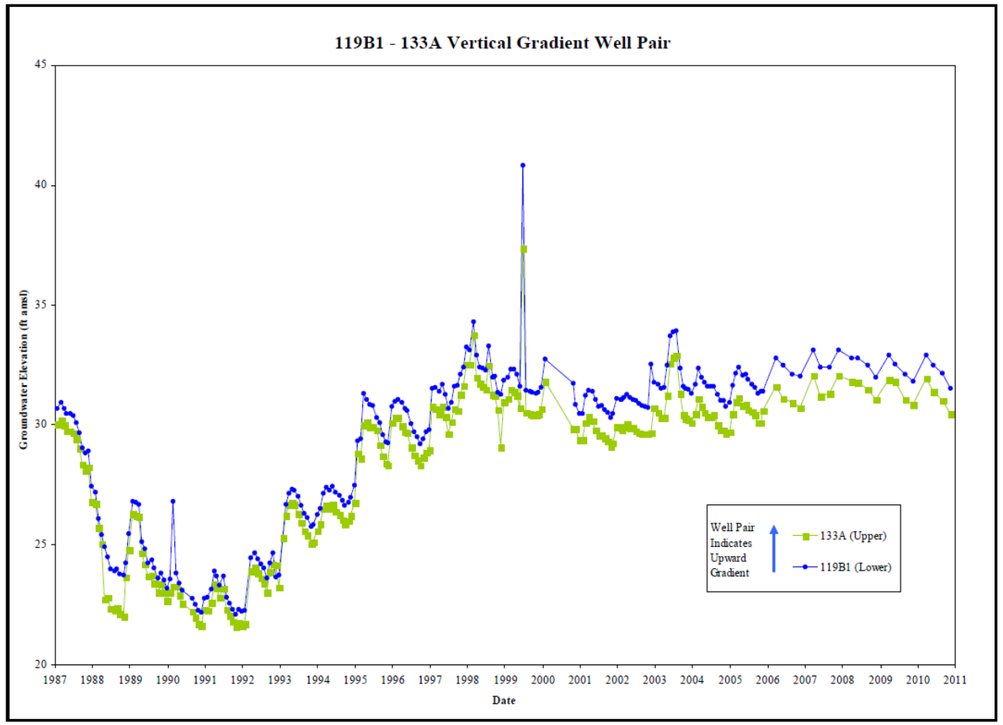
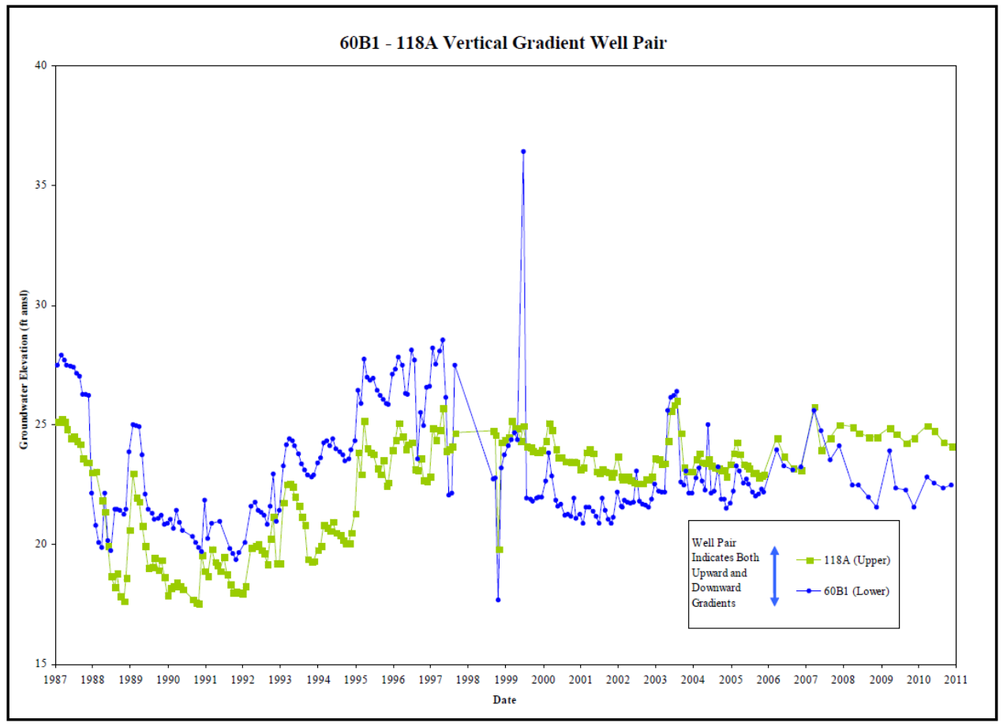
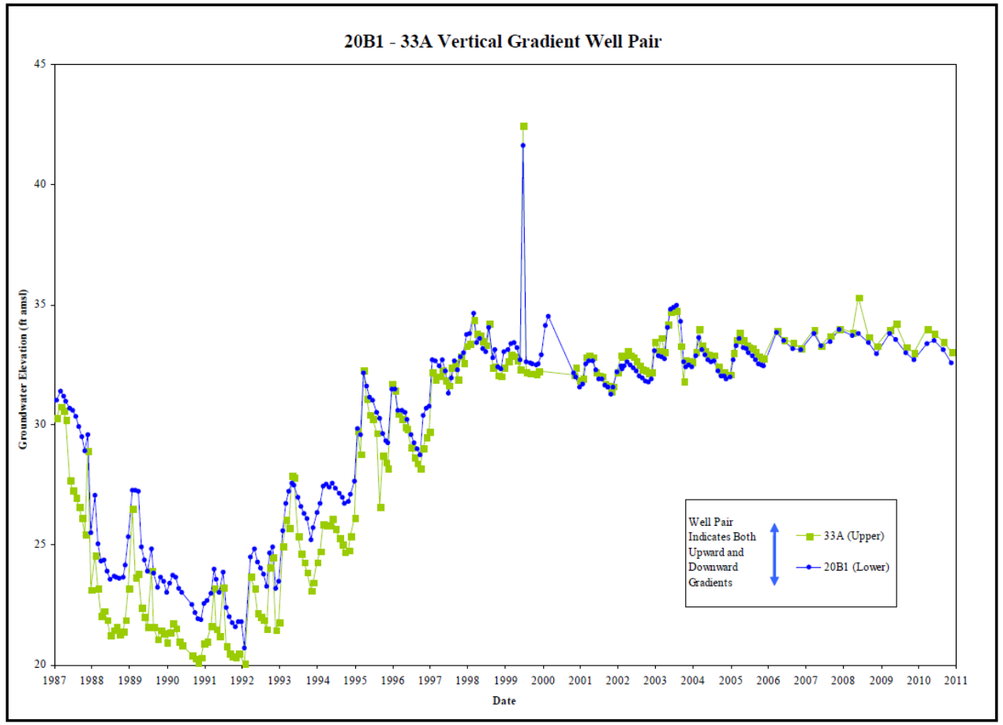


Figure 8. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Crossgradient Wells, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California







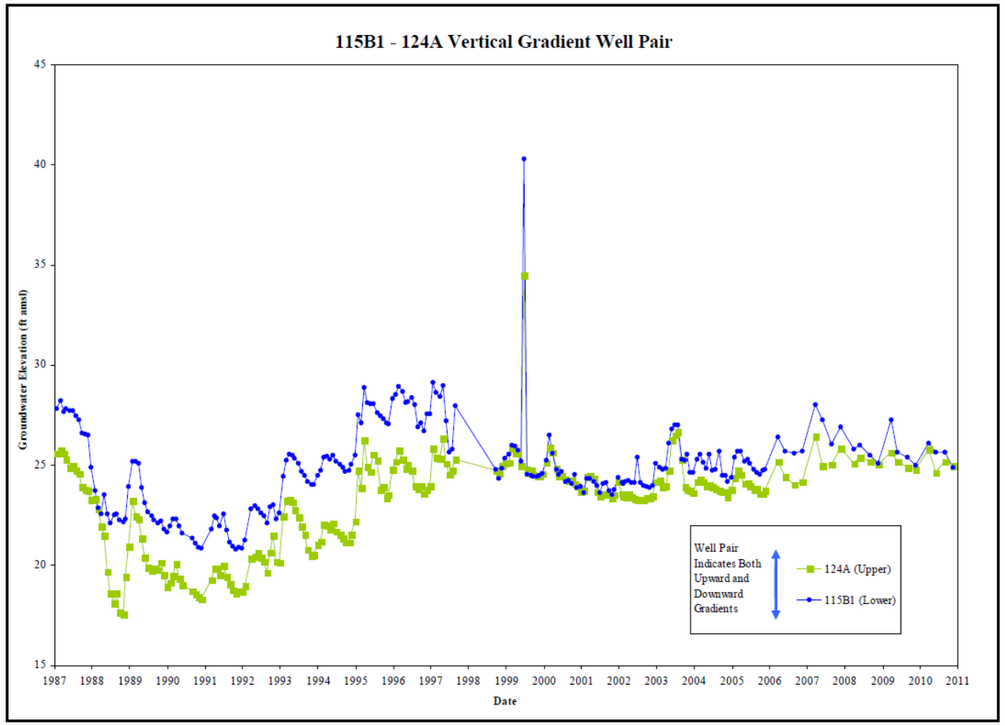


Figure 9. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Vertical Gradient Wells, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

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Former Buildings 1 through 4

Building 1 through 4 Slurry Wall

Building 9 Slurry Wall

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, March 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road
- Slurry Wall Well Pair and Gradient Direction

(3.1) = Average pumping rate in gallons per minute for the period between March 24-31, 2010

Notes:
Groundwater elevation contours based on MEW Regional data presented in the 2010 Annual Report (Geosyntec 2011).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 100 200 300 Feet

Figure 10
A/A1 Groundwater Elevation Contours, Target Capture Area and Estimated March 25, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

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02-June-2011

Former Buildings 1 through 4

Building 1 through 4 Slurry Wall

Building 9 Slurry Wall

Bayshore Fwy/Hwy 101

N. Whisman Rd

Fairchild Dr

Evandale Ave

Devonshire Ave

Murlagan Ave

Nathaniel Ave

Great Driveway

61A 156A 157A RW-7A (9.7) RW-9A (4.8) 76A 62A 130A 59A 118A RW-27A (3.5) 67A RW-5A (2.2) 57A 124A RW-4A (4.2) RW-18A (3.4) REG-MW-2A RW-25A 46A 51A 121A RW-28A 129A 68A RW-3A 33A 127A 84A 128A RW-16A 133A 136A AE/RW-9-1 AE/RW-9-2 RW-21A RW-20A

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, November 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

2010 TCE Concentration Range

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

(2.2) = Average pumping rate in gallons per minute for the period between November 17-24, 2010

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2010 Annual Report (Geosyntec 2011).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

N

0 100 200 300 Feet

Figure 11
A/A1 Groundwater Elevation Contours and TCE Isopleths, Target Capture Area and Estimated November 18, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

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02-June-2011

Former Buildings 1 through 4

Raytheon Slurry Wall

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, March 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

(3.6) = Average pumping rate in gallons per minute for the period between March 24-31, 2010

Notes:
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 200 400 600 Feet

Figure 12

B1/A2 Groundwater Elevation Contours, Target Capture Area and Estimated March 25, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Weiss Associates
Environmental Science, Engineering, and Management Services

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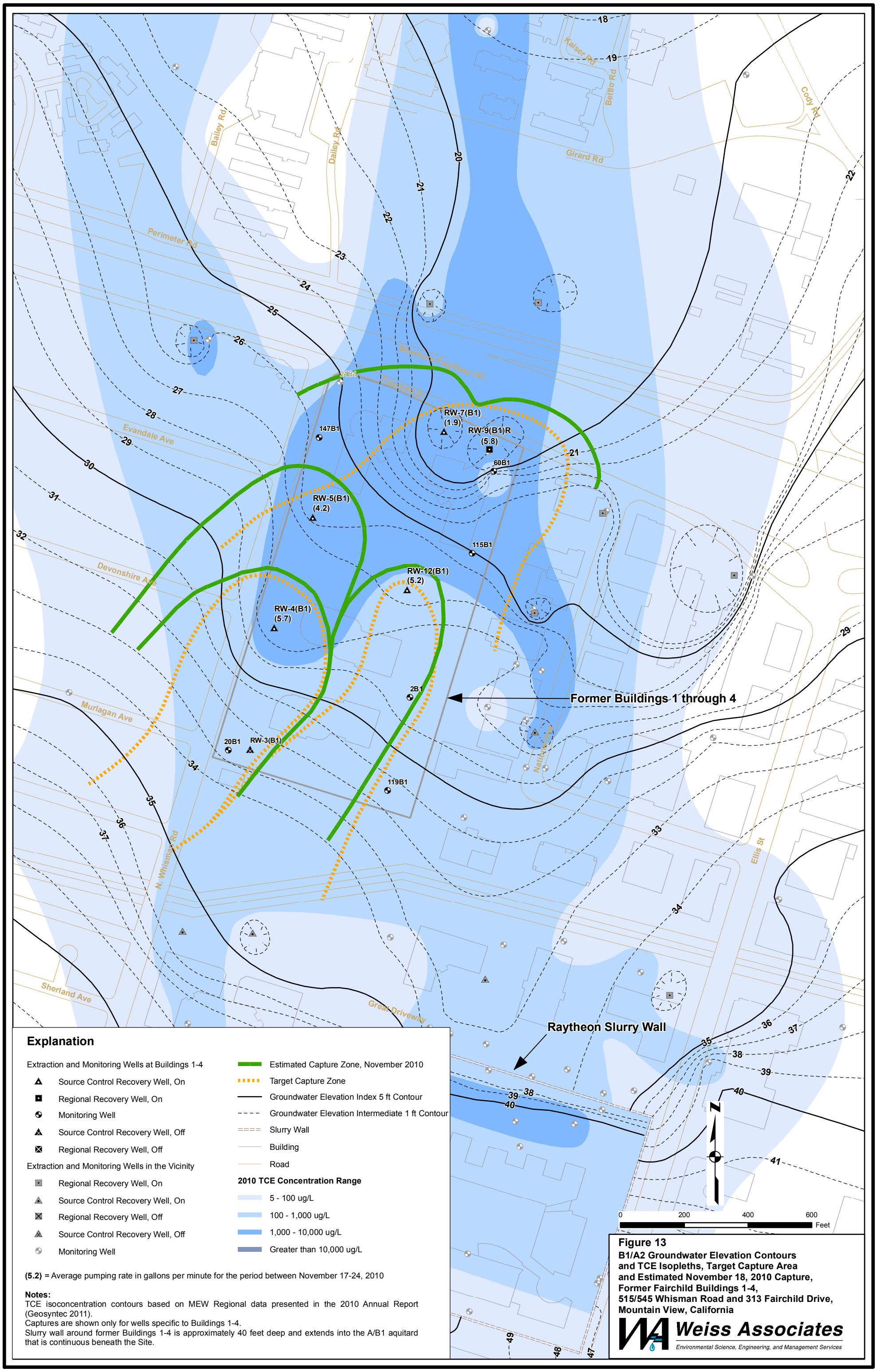
02-June-2011



Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, November 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

2010 TCE Concentration Range

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

(5.2) = Average pumping rate in gallons per minute for the period between November 17-24, 2010

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2010 Annual Report (Geosyntec 2011).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

Figure 13
B1/A2 Groundwater Elevation Contours and TCE Isopleths, Target Capture Area and Estimated November 18, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Weiss Associates
Environmental Science, Engineering, and Management Services

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02-June-2011

Former Buildings 1 through 4

Raytheon Slurry Wall

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, March 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

(4.2) = Average pumping rate in gallons per minute for the period between March 24-31, 2010

Notes:
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 300 600 900 Feet

Figure 14

B2 Groundwater Elevation Contours, Target Capture Area and Estimated March 25, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Weiss Associates
Environmental Science, Engineering, and Management Services

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02-June-2011

Former Buildings 1 through 4

Raytheon Slurry Wall

Explanation

Extraction and Monitoring Wells at Buildings 1-4

- Source Control Recovery Well, On
- Regional Recovery Well, On
- Monitoring Well
- Source Control Recovery Well, Off
- Regional Recovery Well, Off

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well, On
- Source Control Recovery Well, On
- Regional Recovery Well, Off
- Source Control Recovery Well, Off
- Monitoring Well

- Estimated Capture Zone, November 2010
- Target Capture Zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

2010 TCE Concentration Range

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

(1.1) = Average pumping rate in gallons per minute for the period between November 17-24, 2010

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2010 Annual Report (Geosyntec 2011).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 300 600 900 Feet

Figure 15
B2 Groundwater Elevation Contours and TCE Isopleths, Target Capture Area and Estimated November 18, 2010 Capture, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

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Environmental Science, Engineering, and Management Services

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02-June-2011

TABLES

Table 1. Extraction and Monitoring Well Details, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Well ID	Date Installed	Zone[a]	Reference Elevation[b] (ft amsl)	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
118A	09/19/86	A	39.78	4	21	10.5	20.5	6	21	Mon
121A	09/24/86	A	41.82	4	38	26	36	12	38	Mon
124A	09/26/86	A	38.86	4	26	14	24	9	26	Mon
127A	10/01/86	A	43.79	4	22	15	20	13	22	Mon
128A	10/07/86	A	43.38	4	30	18	28	16	30	Mon
129A	10/08/86	A	41.47	4	38	26	36	12	38	Mon
130A	10/08/86	A	41.57	4	31	14	29	11	31	Mon
133A	10/10/86	A	43.75	4	32	15	30	13	32	Mon
156A	07/29/93	A	40.22	4	30	19.5	29.5	15	30	Mon
157A	07/29/93	A	40.50	4	30	19.5	29.5	15	30	Mon
33A	02/11/82	A	43.74	2	34	14	34	14	34	Mon
46A	04/16/82	A	42.10	2	34	14	34	14	34	Mon
51A	02/18/82	A	44.22	2	34	14	34	12	34	Mon
57A	02/16/82	A	39.21	2	35	15	35	12	35	Mon
59A	02/17/82	A	39.56	2	30	15	30	12	30	Mon
61A	04/06/82	A	37.18	2	31	16	31	10	31	Mon
62A	02/12/82	A	37.88	2	30	10	30	10	30	Mon
67A	07/22/82	A	39.77	4	31	21	31	10	31	Mon
68A	07/26/82	A	43.26	4	31	21	31	10	31	Mon
76A	07/15/85	A	40.08	4	22	10	20	7.5	22	Mon
84A	10/14/85	A	43.38	4	30	18	28	15	30	Mon
REG-MW-2A	9/24/97	A	38.11	6	30	18.5	15	25	30	Mon
RW-3A	10/23/85	A	43.34	6	32	19.6	29.6	11	32	Ext
RW-4A	01/28/86	A	42.66	6	32	18	28	11	32	Ext
RW-5A	11/20/85	A	36.86	6	32	19.5	29.5	11	32	Ext
RW-7A	12/13/85	A	37.18	6	37	15	35	11	37	Ext
RW-9A	07/19/85	A	37.83	6	25	13	23	10	25	Ext
RW-16A	12/02/88	A	43.89	8	33	22	32	11	33.5	Ext
RW-18A	12/07/87	A	37.53	6	36	25	35	11	37	Ext
RW-20A	12/09/87	A	43.57	8	37.5	26.5	36.5	11	38	Ext
RW-21A	12/07/87	A	43.16	6	37	21	36	11	38	Ext
RW-25A	07/26/95	A	38.32	6	32	21	31	18	32	Ext
RW-27A	11/07/97	A	38.41	6	27.5	15	25	12	27.5	Ext
RW-28A	02/08/00	A	42.33	6	31.0	18	28	15	31	Ext
AE/RW-9-1	09/13/95	A	43.15	6	36	8	33	6	36	Ext
AE/RW-9-2	09/13/95	A	43.85	6	38	8	37	6	38	Ext
115B1	09/25/86	B1	38.76	4	65	59	64	57.5	65	Mon
119B1	10/16/86	B1	42.96	4	64	52	62	50	64	Mon
147B1	09/05/95	B1	37.82	6	62	50	60	47	62	Mon
2B1	04/07/82	B1	43.43	4	60	47	59	47	60	Mon
20B1	05/23/85	B1	43.89	4	68	57	67	55	68	Mon
60B1	07/11/85	B1	39.64	4	75	63	73	60	75	Mon
67B1	11/28/85	B1	36.93	4	67	56	62	52	67	Mon

Table 1. Extraction and Monitoring Well Details, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Well ID	Date Installed	Zone[a]	Reference Elevation[b] (ft amsl)	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
RW-3(B1)	10/17/85	B1	43.28	6	59	46	56	41	59	Ext
RW-4(B1)	12/10/85	B1	42.61	6	63	50	60	49	63	Ext
RW-5(B1)	10/29/85	B1	37.87	6	62	43	58	40	62	Ext
RW-7(B1)	12/13/85	B1	36.29	6	67	55	65	45	67	Ext
RW-9(B1)R	02/05/86	B1	38.59	6	71.5	59	69	58	71.5	Ext
RW-12(B1)	09/21/95	B1	40.51	6	68	52	62	49	63	Ext
10B2	03/19/85	B2	43.90	2	95	85	90	83	95	Mon
11B2	03/14/85	B2	37.19	2	92	87	92	85	92	Mon
113B2	09/23/86	B2	39.01	4	86	69	84	67	86	Mon
118B2	10/13/86	B2	43.21	4	91	84	89	81	91	Mon
148B2	09/05/95	B2	37.72	6	87	75	85	72	87	Mon
38B2	08/02/85	B2	44.09	4	90	78	88	71	90	Ext
RW-3(B2)	10/23/85	B2	42.96	6	94	76	91	69	94	Ext
RW-4(B2)	12/19/85	B2	41.79	6	93	74.5	89.5	72	93	Ext
RW-5(B2)	11/01/85	B2	37.98	6	97.6	84	94	67	97.5	Ext
RW-7(B2)	02/28/86	B2	38.76	6	93	80	90	76	93	Ext
RW-9(B2)	07/19/85	B2	37.88	6	95	82.6	92.6	80	95	Ext

Notes:

General Notes

Wells associated with the Buildings 1-4 Site are shown in **bold.** All are shown in Figure 3.

Water levels for extraction wells are taken from a 2" piezometer located next to the well.

Referenced Notes

a = The letter in the well ID identifies each well's respective water-bearing zone. There are six designated water-bearing zones in the MEW area: A, B1, B2, B3, C, and deep aquifer (DW).

b = Reference Elevations are in National Geodetic Vertical Datum from 1929 (NGVD 29).

Abbreviations:

---- = data not available
amsl = above mean sea level
btoc = below top-of-casing
Ext = extraction well
ft = feet
Mon = monitoring well

Table 2. 2010 Monitoring and Reporting Schedule, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
118A[a]			S		S			S			1, S	
121A[b]			S		S			S			1, 7, S	
124A[b]			S		S			S			S	
127A			S		S			S			1, S	
128A			S		S			S			S	
129A[a]			S		S			S			1,S	
130A			S		S			S			1, S	
133A[b]			S		S			S			1, 7, S	
156A			S		S			S			1, S	
157A[a]			S		S			S			1, S	
33A[b]			S		S			S			S	
46A[a]			WL								1,WL	
51A[b]			WL								WL	
57A[b]			WL								WL	
59A[b]			S		S			S			S	
61A[a]			WL								1,WL	
62A			WL								1,WL	
67A[b]			WL								W	
68A[b]			WL								W	
76A[a]			S		S			S			1, S	
84A[b]			S		S			S			S	
REG-MW-2A			WL								1,WL	
RW-3A			WL								1,WL	
RW-4A			WL								1,WL	
RW-5A			WL								1,WL	
RW-7A			WL								1,WL	
RW-9A[c]			WL								1,WL	
RW-16A			WL								1, 7, WL	
RW-18A			WL								1, 7, WL	
RW-20A[d]			WL								1,WL	
RW-21A[d]			WL								1,WL	
RW-25A[e]			WL								1,WL	
RW-27A			WL								1,WL	
RW-28A			WL								1, 7, WL	
AE/RW-9-1[d]			WL								1,WL	
AE/RW-9-2[d]			WL								1,WL	
115B1			S		S			S			1, 7, S	
119B1			S		S			S			S	
147B1			WL								1,WL	
2B1			WL								1,WL	
20B1			S		S			S			S	
60B1			S		S			S			1, 7, S	
67B1[a]			WL								1,WL	
RW-3(B1)			WL								1,WL	
RW-4(B1)			WL								1,WL	
RW-5(B1)			WL								1,WL	
RW-7(B1)			WL								1,WL	
RW-9(B1)R[c]			WL								1, 7, WL	
RW-12(B1)			WL								1,WL	
10B2			WL								1,WL	
11B2			WL								1,WL	
113B2			WL								1, WL	
118B2			WL								1,WL	
148B2			WL								1,WL	
38B2[c]			WL								1, 6, WL	
RW-3(B2)			WL								1,WL	
RW-4(B2)			WL								1,WL	
RW-5(B2)[a]			WL								1,WL	
RW-7(B2)[c]			WL								1,WL	
RW-9(B2)[c]			WL								1,WL	

Table 2. 2010 Monitoring and Reporting Schedule, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sys1 Influent	3	1,3	3		1,2			1			1	1
Sys1 Midpoint[f]	1	1	1	1	1	1	1	1	1	1	1	1
Sys1 Effluent	1,3	1,3	1,3	1	1, 2	1	1,3	1,3	1	1,2,4,5	1,3	1
Sys3 Influent				2	1, 2	1, 2	2	1, 2	2	2	1, 2	2
Sys3 Midpoint[f]	1	1	1	1	1	1	1	1	1	1	1	1
Sys3 Effluent	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1, 2	1,2,4,5	1, 2	1, 2
Stevens Creek[g,h]												
Reporting												
Quarterly NPDES Reports[i]		2/11/2010			5/14/2010			8/13/2010			11/15/2010	
USEPA Annual Progress Report						6/15/2010						

Notes:

General Notes

Wells associated with the Buildings 1-4 Site are shown in **bold.** All are shown in Figure 3.

Standard observations were recorded whenever a sample was collected for chemical analysis, including field analysis for pH, temperature, and conductivity. Samples collected at wells also include field analysis for DO and ORP.

Referenced Notes

a = Sampling of well is not required. Voluntary sampling was performed for slurry wall evaluations and/or plume monitoring.

b = Wells are sampled every five years and were last sampled during 2007 sampling event.

c = Part of the MEW RGRP S101 sampling event but presented in this table because they are used for slurry wall evaluations and/or plume monitoring.

d = Part of Building 9 Facility Specific wells but plumbed to System No. 1. Data for these is discussed in the Building 9 report unless pertinent to this report.

e = Part of Building 18 Facility Specific wells but plumbed to System No. 1. Data for this well is discussed in Building 18 report unless pertinent to this report.

f = Analysis not required for regulatory compliance but being done by system management for carbon change out purposes.

g = In cases of effluent exceedence, receiving water must be sampled upstream/downstream of treatment system within 24 hours for the exceeded compound(s) and dissolved oxygen level.

h = In cases of Cadmium, Chromium (total), Copper, Lead, Silver, or Zinc trigger exceedences, receiving water must be sampled upstream/downstream of treatment system for hardness and salinity on the same day as one of the three required resamples is taken (Per NPDES Permit CAG912003, Order No. R2-2009-0059, effective October 1, 2009).

i = Reports were submitted to the Water Board under NPDES Permit CAG912003, Order No. R2-2004-0055. New Permit Order No. R2-2009-0059 became effective October 1, 2009.

1 = USEPA Method 8260 for Halogenated VOCs using 8010 MS parameters

2 = USEPA Method 8270C for 1,4-dioxane or SVOCs

3 = USPEA Method 200.8 for Se

4 = 96-hour static bioassay for rainbow trout

5 = turbidity

6 = These wells were selected for Regional-Scale MNA Sampling. In addition to VOCs, samples from these wells were also analyzed for nitrate, sulfate, and ferrous iron (FeII).

7 = These wells were selected for Targeted MNA Sampling. In addition to VOCs, samples from these wells were also analyzed for nitrate, ferric iron (Fe^{III}), sulfate, dissolved manganese (MnII), ferrous iron (FeII), sulfide, methane, ethene, total organic carbon, BTEX, carbon dioxide, alkalinity, chloride, Dhc/vcrA, and CSIA.

S = Slurry wall water levels measured on March 25, May 27, August 26, and November 18, 2010.

WL = Water levels measured on March 25 and November 18, 2010.

Abbreviations

BTEX = benzene, toluene, ethylbenzene, xylenes

CSIA = compound specific isotope analysis

Dhc = Dehalococcoides

DO = dissolved oxygen

MEW = Middlefield Ellis Whisman

ORP = oxidation reduction potential

RGRP = Regional Groundwater Recovery Program

vcrA = vinyl chloride reductase

VOCs = volatile organic compounds

Table 3. Extraction Well Target Flow Rates, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Extraction Wells	Previous Target Flow Rate (gpm)	Adjusted 2010 Target Flow Rate (gpm)	Average Flow Rate[c] (2010)
----------System 1----------			
38B2 (RGRP)	4.0	4.0	4.8
RW-3A[a]	off	off	---
RW-3(B1)[a]	off	off	---
RW-3(B2)[b]	off	off	---
RW-4A[a]	off	3.0	3.7
RW-4(B1)[a]	off	5.5	5.9
RW-4(B2)	0.8	0.5	1.0
RW-16A[a]	off	off	---
RW-20A[a]	off	4.0	4.3
RW-21A[a]	off	7.0	6.6
RW-25A	5.5	5.5	5.1
RW-28A[a]	off	off	---
AE/RW-9-1	5.0	4.0	4.2
AE/RW-9-2	1.0	2.0	1.9

Extraction Wells	Previous Target Flow Rate (gpm)	Adjusted 2010 Target Flow Rate (gpm)	Average Flow Rate[c] (2010)
----------System 3----------			
RW-5A	3.0	2.5	2.2
RW-5(B1)	4.0	4.0	4.4
RW-5(B2)[b]	off	off	---
RW-7A	7.0	10.0	9.6
RW-7(B1)	2.0	2.0	2.0
RW-7(B2)[b]	off	off	---
RW-9A (RGRP)[a]	off	5.0	4.3
RW-9(B1) (RGRP)	7.4	6.0	5.6
RW-9(B2) (RGRP)	4.7	3.0	3.7
RW-12(B1)[a]	off	5.5	5.1
RW-18A[a]	off	6.5	5.3
RW-27A	3.0	5.5	4.3

Notes:

General Notes

Extraction wells RW-3(B2) and RW-5(B2) have been off since 1999 (Five Year Review Well Flow Summary, RMT).
Well RW-7(B2) has been off since February 2000 (RMT, 2000 Annual Report for Fairchild Buildings 1-4).

Referenced Notes

a = These extraction wells were turned off based on conditional approval to implement the recommendations in the Slurry Wall System Efficiency Report, email from Alana Lee, USEPA, to L. Maile Smith, Northgate Environmental Management, Inc., August 2, 2007.

b = Well was turned OFF with USEPA approval.
c = Flow rates for some wells were adjusted in April 2010. Average flow rates are calculated using data starting from when the targets were adjusted.

Abbreviations:

--- = no data
gpm = gallons per minute
USEPA = United States Environmental Protection Agency

Table 4. Monthly Average Flow Rates (gallons per minute), January through December 2010, Fairchild System 1, 515 Whisman Road, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-3A[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-3(B1)[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-4A[b]	---	---	---	---	1.65	3.45	3.66	3.66	3.72	3.81	3.88	3.84
RW-4(B1)	0.01	0.42	0.34	6.43	6.98	6.61	7.01	5.71	5.47	5.28	5.29	5.21
RW-4(B2)	1.09	0.95	0.93	0.92	0.97	0.96	1.00	1.00	1.02	0.98	0.99	0.87
RW-16A[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-20A[b]	---	---	---	---	2.11	4.20	4.42	4.44	4.70	4.14	4.46	4.46
RW-21A[b]	---	---	---	---	3.41	6.67	6.95	6.72	6.85	6.68	6.58	6.50
RW-25A	4.63	5.50	5.20	5.06	4.95	4.89	5.31	4.48	4.89	5.53	5.27	5.16
RW-28A[a]	---	---	---	---	---	---	---	---	---	---	---	---
AE/RW-9-1	4.79	5.06	4.78	3.95	4.14	3.94	4.19	4.02	3.95	3.86	4.00	4.03
AE/RW-9-2	1.10	0.79	1.21	2.34	2.20	1.87	1.83	1.43	1.96	1.98	1.72	2.08
38B2	6.64	6.91	6.60	4.37	4.48	4.30	4.11	3.91	4.24	3.65	4.14	4.31
RW-3(B2)[c]	---	---	---	---	---	---	---	---	---	---	---	---
Bldg. 18[d]	28.89	33.75	32.82	30.58	28.11	25.18	26.07	20.74	22.55	21.29	21.32	23.83
Total[e]	36.12	42.72	40.22	42.65	48.21	50.82	50.83	48.54	51.53	39.77	44.48	49.23

Notes:

a = Well is OFF with conditional approval from USEPA for implementation of slurry wall evaluation recommendations.

b = Well was turned ON in April 2010 as a result of an optimization study.

c = Well has been turned OFF permanently with USEPA approval.

d = Groundwater extracted from Building 18 is treated and discharged at System 1. Hence, Building 18 data is presented along with System 1 data.

e = Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore, the sum of the wells may not be equal to the total value reported.

Abbreviations:

--- = well was OFF this month

Bldg. 18 = Building 18 basement dewatering sump system, located at 644 National Avenue, Mountain View, California

USEPA = United States Environmental Protection Agency

Table 5. Monthly Extraction Totals (gallons), January through December 2010, Fairchild System 1, 515 Whisman Road, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-3A[a]	---	---	---	---	---	---	---	---	---	---	---	205.0
RW-3(B1)[a]	---	14.0	---	---	---	---	---	---	---	---	---	787.0
RW-4A[b]	---	---	---	---	66,536.0	173,947.0	147,641.0	174,134.0	160,609.0	153,494.0	156,502.0	193,522.0
RW-4(B1)	241.0	17,112.0	17,251.0	259,364.0	281,467.0	333,006.0	282,639.0	271,316.0	236,225.0	212,907.0	213,232.0	262,428.0
RW-4(B2)	45,586	38,340	46,766	37,153	39,076	48,133	40,509	47,607	43,999	39,535	40,116	43,625
RW-16A[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-20A[b]	---	---	---	---	84,948.0	211,836.0	178,123.0	210,961.0	202,979.0	166,729.0	179,778.0	224,833.0
RW-21A[b]	---	---	---	---	137,332.0	336,197.0	280,115.0	319,403.0	295,774.0	269,232.0	265,351.0	327,834.0
RW-25A	193,452	221,693	262,307	204,090	199,771	246,324	214,224	212,845	211,215	222,807	212,358	260,104
RW-28A[a]	---	---	---	---	---	---	---	---	---	---	---	---
AE/RW-9-1	199,995	204,108	240,997	159,069	166,946	198,425	168,926	190,916	170,786	155,749	161,215	202,971
AE/RW-9-2	45,869	31,977	61,182	94,167	88,852	94,172	73,761	67,965	84,480	79,799	69,401	104,994
38B2	277,199	278,710	332,750	176,258	180,552	216,795	165,538	185,642	182,978	147,004	167,115	217,234
RW-3(B2)[c]	---	---	---	---	---	---	---	---	---	---	---	---
Bldg. 18[d]	1,196,778	1,409,294	1,530,362	1,187,302	1,095,788	1,231,543	996,482	953,323	939,839	854,873	828,872	1,200,215
Total[e]	1,508,450	1,722,625	2,027,175	1,719,550	1,943,950	2,561,248	2,049,653	2,306,850	2,226,150	1,717,850	1,857,550	2,481,000

Notes:

a = Well is OFF with conditional approval from USEPA for implementation of slurry wall evaluation recommendations.

b = Well was turned ON in April 2010 as a result of an optimization study.

c = Well has been turned OFF permanently based on USEPA approval.

d = Groundwater extracted from Building 18 is treated and discharged at System 1. Hence, Building 18 data is presented along with System 1 data. The Building 18 monthly extraction total reported does not include the volume of water pumped to the South 101 treatment systems during carbon changes. These volumes are reported in the Building 18 and RGRP reports. The total volume pumped to S101 in 2010 was 439,202 gallons.

e = Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore, the sum of the wells may not be equal to the total value reported.

Abbreviations:

--- = well was OFF this month

Bldg. 18 = Building 18 basement dewatering sump system

USEPA = United States Environmental Protection Agency

RGRP = Regional Groundwater Remediation Program

Table 6. Monthly Average Flow Rates (gallons per minute), January through December 2010, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-5A	2.58	2.12	2.83	2.52	2.31	2.51	2.54	2.64	2.63	2.59	2.48	2.22
RW-5(B1)	3.81	3.44	3.60	3.92	3.44	4.40	4.23	4.29	4.22	4.44	4.56	4.36
RW-5(B2)[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-7A	6.77	5.98	5.91	8.56	8.71	9.40	9.19	9.47	9.50	10.81	10.63	10.37
RW-7(B1)	2.26	1.97	2.03	2.07	1.85	1.73	2.34	2.38	2.14	2.04	2.01	1.94
RW-7(B2)[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-9A[b]	---	---	---	3.09	2.44	4.50	3.95	5.32	4.90	4.72	4.88	4.84
RW-9(B1)	7.03	6.03	6.36	5.22	4.01	5.57	5.40	5.51	5.12	5.46	6.21	5.87
RW-9(B2)	4.83	3.85	4.07	4.34	3.99	3.06	3.10	3.29	3.33	3.42	3.36	3.24
RW-18A[b]	---	0.25	---	6.30	5.01	6.21	6.16	5.49	4.82	4.30	4.36	5.46
RW-27A	3.48	2.94	2.87	7.05	4.42	3.41	3.59	4.62	3.96	4.18	3.61	4.29
RW-12(B1)[b]	0.09	0.28	---	4.68	4.99	4.64	4.69	4.99	5.41	5.86	5.59	5.28
Total[c]	22.94	22.45	25.18	45.35	40.73	43.67	42.29	43.50	41.52	45.10	35.69	53.86

Notes:

a = Well has been turned OFF permanently based on USEPA approval.

b = Well was turned ON in April 2010 as a result of an optimization study.

c = Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore, the sum of the wells may not be equal to the total value reported.

Abbreviations:

--- = well was OFF this month

USEPA = United States Environmental Protection Agency

Table 7. Monthly Extraction Totals (gallons), January through December 2010, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-5A	107,850	85,354	142,684	101,490	93,063	126,558	102,415	125,280	113,455	104,411	96,309	112,082
RW-5(B1)	158,946	138,608	181,334	158,124	138,627	221,540	170,416	203,628	182,165	179,008	177,104	219,958
RW-5(B2)[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-7A	282,636	240,991	297,665	345,269	351,357	473,971	370,465	449,951	410,550	435,958	413,220	522,522
RW-7(B1)	94,341	79,561	102,298	83,408	74,632	87,136	94,151	113,316	92,650	82,354	78,247	97,635
RW-7(B2)[a]	---	---	---	---	---	---	---	---	---	---	---	---
RW-9A[b]	---	---	---	124,487	98,275	226,844	159,354	252,908	211,826	190,226	189,646	243,946
RW-9(B1)	293,446	243,062	320,697	210,300	161,628	280,526	217,833	262,070	221,182	220,234	241,416	295,821
RW-9(B2)	201,658	155,079	205,334	174,981	160,904	154,188	124,815	156,439	143,749	137,894	130,482	163,068
RW-18A[b]	---	10,054	---	254,018	202,116	313,229	248,359	260,674	208,415	173,282	169,350	275,022
RW-27A	145,260	118,500	144,821	284,134	178,200	171,763	144,879	219,603	171,218	168,484	140,510	216,191
RW-12(B1)[b]	3,844	11,477	---	188,727	201,109	234,094	189,186	236,914	233,738	236,266	217,395	266,227
Total[c]	958,100	905,050	1,268,850	1,828,550	1,642,100	2,201,200	1,705,250	2,067,000	1,793,700	1,818,400	1,387,600	2,714,700

Notes:

a = Well has been turned OFF permanently based on USEPA approval.

b = Well was turned ON in April 2010 as a result of an optimization study.

c = Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore, the sum of the wells is not equal to the total value reported.

Abbreviations:

--- = well was not turned on this month

USEPA = United States Environmental Protection Agency

Table 8a. Organic Chemical Analytical Results Summary, Fairchild System 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
			<						µg/L					>
Influent	02/24/10	CT/8260	13	<10	14	870	11	14	1,300	19	<40	<20	2241	---
	05/19/10	CT/8260	<10	<10	<10	620	28	<10	1,300	14	<40	<20	1962	---
	05/19/10	CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.5
	08/20/10	CT/8260	16	<8.3	10	820	23	46	1,400	11	<33	<17	2326	---
	11/24/10	CT/8260	9.7	<8.3	11	580	10	16	920	<8.3	<33	<17	1547	---
	12/29/10	CT/8260	16	<6.3	8	470	18	26	780	11	<25	<13	1329	---
Midpoint 1	01/06/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<2.0	<1.0	1	---
	01/06/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<2.0	<1.0	1	---
	02/03/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/03/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/01/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<2.0	<1.0	1	---
	03/01/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<2.0	<1.0	1	---
	04/07/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<2.0	<1.0	1	---
	05/05/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/02/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/07/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/04/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<2.0	<1.0	1	---
	09/16/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/24/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/29/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Midpoint 2	02/03/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/01/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/07/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/05/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/04/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/24/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/29/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	NPDES Trigger Levels:		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
	Effluent Limitations:[2]		5	0.5	0.11[1]	5	5	5	5	0.5	5	5	NE	NE

Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptSys1Voc2010Anl

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Table 8a. Organic Chemical Analytical Results Summary, Fairchild System 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
			<						µg/L					>
Effluent	01/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	01/21/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/24/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/24/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10 FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/19/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/19/10	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.96
	06/16/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/20/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/20/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	09/16/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/21/10	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<1.0
	11/24/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/29/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Travel Blank[3]	01/06/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	01/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/03/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/24/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/01/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
NPDES Trigger Levels:			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
Effluent Limitations:[2]			5	0.5	0.11[1]	5	5	5	5	0.5	5	5	NE	NE

Table 8a. Organic Chemical Analytical Results Summary, Fairchild System 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
			<						µg/L					>

Notes:

General Notes:

ALL PARAMETERS ARE WITHIN EFFLUENT LIMITS SPECIFIED IN NPDES PERMIT ORDER NO. R2-2009-0059, NPDES PERMIT NO. CAG912003

Referenced Notes:

[1] = If reported detection is greater than effluent limit, then non-detect using 0.5 µg/L will not be deemed to be out of compliance.

[2] = Effluent Limitations are Maximum Daily Effluent Limitations on discharge to drinking water areas as specified in Order No. R2-2009-0059, VOC General NPDES Permit CAG912003.

[3] = Travel blanks for System 3 are also associated with Systems 1 and 19.

Abbreviations:

< # = analyte not detected above the reported detection limit of "#" µg/L
8260B = USEPA Method 8260B for halogenated VOCs
8270C = USEPA Method 8270C for semivolitile organic compounds
CT = Curtis and Tompkins Laboratories, Berkeley, CA
DCA = dichloroethane
DCE = dichloroethene
FD = field duplicate
Freon 113 = tichlorotrifluoroethane
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
ND = no analytes detected above reporting limits
NE = not established, not applicable
NPDES = National Pollutant Discharge Elimination System
TCA = trichloroethane
TCE = trichloroethene
µg/L = micrograms per liter
VOCs = volatile organic compounds

Table 8b. Field Parameters and Other Analytical Results Summary, January through December 2010, Fairchild System 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	pH	Temp (^oC)	Conductivity (µS/cm)	Turbidity (NTU)	Se[a] (µg/L)	Hardness (mg/L as $CaCO_3$)	Salinity (ppt)	Rainbow Trout Acute Toxicity[b] (% survival)
Influent	01/21/10	7.10	18.4	930	---	5	---	---	---
	02/24/10	7.22	18.8	739	---	4.9	---	---	---
	03/17/10	7.27	19.4	911	---	**6**	---	---	---
	05/19/10	7.08	20.6	1144	---	---	---	---	---
	08/20/10	7.06	21.2	790	---	---	---	---	---
	12/29/10	7.09	18.6	1038	---	---	---	---	---
Midpoint 1	01/06/10	7.17	19.2	1043	---	---	---	---	---
	02/03/10	7.11	18.4	926	---	---	---	---	---
	03/01/10	7.24	18.4	920	---	---	---	---	---
	04/07/10	7.26	17.9	907	---	---	---	---	---
	05/05/10	7.06	20.4	785	---	---	---	---	---
	06/02/10	7.11	20.1	969	---	---	---	---	---
	07/07/10	6.97	20.6	949	---	---	---	---	---
	08/04/10	7.13	19.8	848	---	---	---	---	---
	09/16/10	7.28	19.9	925	---	---	---	---	---
	10/21/10	7.06	20.1	858	---	---	---	---	---
	12/29/10	7.09	18.3	1049	---	---	---	---	---
Midpoint 2	02/03/10	6.91	18.5	919	---	---	---	---	---
	03/01/10	7.23	18.2	940	---	---	---	---	---
	04/07/10	7.24	17.9	940	---	---	---	---	---
	05/05/10	6.93	20.6	809	---	---	---	---	---
	08/04/10	7.30	19.7	846	---	---	---	---	---
	12/29/10	7.13	17.9	1061	---	---	---	---	---
Effluent	01/21/10	7.12	17.6	972	---	4.6	---	---	---
	02/24/10	7.21	19.0	795	---	**6**	---	---	---
	03/17/10	7.09	20.6	877	---	**5.6**	---	---	---
	04/21/10	7.47	17.5	836	---	---	---	---	---
	05/19/10	7.34	19.6	1162	---	---	---	---	---
	06/16/10	7.13	19.8	1065	---	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	5	---	---	---
Effluent Limitations:[c]		6.5 to 8.5	NE	NE	NE	NE	NE	NE	70

Table 8b. Field Parameters and Other Analytical Results Summary, January through December 2010, Fairchild System 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	pH	Temp (°C)	Conductivity (µS/cm)	Turbidity (NTU)	Se[a] (µg/L)	Hardness (mg/L as $CaCO_3$)	Salinity (ppt)	Rainbow Trout Acute Toxicity[b] (% survival)
Effluent	07/08/10	7.47	21.1	918	---	**5.5**	---	---	---
	07/20/10	6.95	21.9	1093	---	---	---	---	---
	08/20/10	7.10	23.9	814	---	5.0	---	---	---
	09/16/10	7.27	20.2	915	---	---	---	---	---
	10/21/10	7.12	19.9	860	0.03	---	546	0.5	95
	11/24/10	---	---	---	---	**6.9**	---	---	---
	12/29/10	7.00	17.7	1064	---	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	5	---	---	---
Effluent Limitations:[c]		6.5 to 8.5	NE	NE	NE	NE	NE	NE	70

Notes:

General Notes:

ALL PARAMETERS ARE WITHIN EFFLUENT LIMITS SPECIFIED IN NPDES PERMIT ORDER NO. R2-2009-0059, NPDES PERMIT NO. CAG912003

Per Order No. R2-2009-0059, VOC General NPDES Permit CAG912003, pH, temperature, electrical conductivity, and turbidity are now required to be reported on an annual basis but pH, temperature and conductivity readings are generally collected on a monthly basis.

Triennial sampling for inorganic trigger compounds was performed October 2009. Results were presented in the 4th Quarter and 2009 Annual Report submitted 2/15/2010.

Hardness and salinity are required as a single annual sample in the receiving water only if trigger levels for selected metals (not selenium) have been exceeded.

BOLD = Analyte is above the trigger limit in the NPDES Permit.

Referenced Notes:

a = Selenium exceeded the trigger limitations in System 1 effluent in the fourth quarter of 2009. Confirmation samples were collected in the first quarter of 2010. Sampling was accelerated to quarterly in the second quarter 2010.

b = Rainbow trout acute toxicity, 96-hr static, percent survival; sampled in October of each year coincident with effluent sampling.

c = Effluent limitation in system discharge as specified in Order No. R2-2009-0059, VOC General NPDES Permit CAG912003.

Abbreviations:

--- = not applicable, not required
°C = degrees Celsius
$CaCO_3$ = calcium carbonate
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
NE = not established
NPDES = National Pollutant Discharge Elimination System
NTU = Nephelometric Turbidity Units
ppt = parts per trillion
Se = selenium
µg/L = micrograms per liter
µS/cm = micro Siemens per centimeter

Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date		Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
				<						µg/L					>
Influent	02/17/10		CT/8260	<13	<13	15	770	32	<13	1,400	<13	<50	<25	2217	---
	04/22/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.3
	05/19/10		CT/8260	13	<10	11	590	24	<10	1,100	<10	<40	<20	1738	---
	05/19/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	06/02/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.6
	06/16/10		CT/8260	9.2	<8.3	13	480	21	<8.3	1,200	<8.3	<33	<17	1723	---
	06/30/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.3
	07/07/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.6
	07/21/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	08/04/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.8
	08/27/10		CT/8260	8.9	<3.1	14	590	18	<3.1	1,100	<3.1	<13	<6.3	1743	---
	08/27/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.7
	09/01/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.3
	09/16/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.2
	09/29/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3
	10/06/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.8
	10/20/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.7
	11/03/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.7
	11/17/10		CT/8260	10	<7.1	11	550	21	<7.1	1,100	<7.1	<29	<7.1	1692	---
	11/17/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.5
	12/01/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.2
	12/15/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.2
	12/29/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.1
Midpoint 1	01/06/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<2.0	<1.0	1	---
	01/06/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<2.0	<1.0	1	---
	02/03/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<2.0	<1.0	1	---
	02/03/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<2.0	<1.0	2	---
	03/03/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/03/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
NPDES Trigger Levels:				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
Effluent Limitations:[2]				5	0.5	0.11[1]	5	5	5	5	0.5	5	5	NE	NE

Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date		Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
				<						µg/L					>
Midpoint 1	04/07/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/07/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/05/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<2.0	<1.0	2	---
	05/05/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<2.0	<1.0	2	---
	06/02/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/07/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<2.0	<1.0	3	---
	08/04/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	09/16/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/20/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.1	<2.0	<1.0	2	---
	11/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<2.0	<0.5	1	---
	12/29/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Midpoint 2	02/03/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/03/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/07/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/05/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/04/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	---
Effluent	01/06/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	01/06/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	01/20/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.5
	01/20/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.7
	01/21/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	01/21/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/03/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.7
	02/03/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.6
	02/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/17/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.94
	02/17/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
NPDES Trigger Levels:				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
Effluent Limitations:[2]				5	0.5	0.11[1]	5	5	5	5	0.5	5	5	NE	NE

Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptSys3VOC2010Anl

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Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date		Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
				<						µg/L					>
Effluent	02/17/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.94
	03/03/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.94
	03/03/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.94
	03/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.98
	03/17/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.98
	03/31/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.7
	03/31/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.6
	04/14/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	5.4
	04/14/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	5.1
	04/21/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/21/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/22/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	4.5
	04/22/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	4.6
	05/05/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	4.6
	05/19/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/19/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.96
	05/19/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/02/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.5
	06/16/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/16/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.8
	06/16/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/30/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.8
	07/07/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.5
	07/21/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/21/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<1.0
	07/21/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/21/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<1.0
	08/04/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3.5
NPDES Trigger Levels:				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
Effluent Limitations:[2]				5	0.5	0.11[1]	5	5	5	5	0.5	5	5	NE	NE

Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date		Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
				<						µg/L					>
Effluent	08/19/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/19/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	4
	08/19/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/19/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	4.9
	09/01/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.6
	09/16/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	09/16/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.99
	09/16/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	09/16/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.99
	09/29/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.1
	10/06/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.1
	10/20/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/20/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	3
	10/20/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/20/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.7
	11/03/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<0.98
	11/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	---
	11/17/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.2
	11/17/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	---
	11/17/10	FD	CT/8270	---	---	---	---	---	---	---	---	---	---	---	1.1
	12/01/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	12/15/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	2.3
	12/29/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/29/10		CT/8270	---	---	---	---	---	---	---	---	---	---	---	<1.0
	12/29/10	FD	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Travel Blank [3]	01/06/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	01/21/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/03/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	02/17/10		CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
NPDES Trigger Levels:				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
Effluent Limitations:[2]				5	0.5	0.11 [1]	5	5	5	5	0.5	5	5	NE	NE

Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
			<						µg/L					>
Travel Blank [3]	03/03/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	03/17/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/07/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	04/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/05/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	05/19/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/02/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	06/16/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/07/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	07/21/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/04/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	08/19/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	7	---
	08/27/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/20/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/17/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	---
	12/29/10	CT/8260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	NPDES Trigger Levels:		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	3
	Effluent Limitations:[2]		5	0.5	0.11 [1]	5	5	5	5	0.5	5	5	NE	NE

Table 9a. Organic Chemical Analytical Results Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	1,4-Dioxane
			<						µg/L					>

Notes:

General Notes:

ALL PARAMETERS ARE WITHIN EFFLUENT LIMITS SPECIFIED IN NPDES PERMIT ORDER NO. R2-2009-0059, NPDES PERMIT NO. CAG912003

Referenced Notes:

[1] = If reported detection is greater than effluent limit, then non-detect using 0.5 µg/L will not be deemed to be out of compliance.

[2] = Effluent Limitations are Maximum Daily Effluent Limitations on discharge to drinking water areas as specified in Order No. R2-2009-0059, VOC General NPDES Permit CAG912003.

[3] = Travel blanks for System 3 are also associated with Systems 1 and 19.

Abbreviations:

< # = analyte not detected above the reported detection limit of "#" µg/L
8260B = USEPA Method 8260B for halogenated VOCs
8270C = USEPA Method 8270C for semivolitile organic compounds
CT = Curtis and Tompkins Laboratories, Berkeley, CA
DCA = dichloroethane
DCE = dichloroethene
FD = field duplicate
Freon 113 = tichlorotrifluoroethane
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
ND = no analytes detected above reporting limits
NE = not established, not applicable
NPDES = National Pollutant Discharge Elimination System
TCA = trichloroethane
TCE = trichloroethene
µg/L = micrograms per liter
VOCs = volatile organic compounds

Table 9b. Field Parameters and Other Analytical Results Summary, January through December 2010, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	pH	Temperature (^oC)	Conductivity (µS/cm)	Turbidity (NTU)	Hardness (mg/L as $CaCO_3$)	Salinity (ppt)	Rainbow Trout Acute Toxicity[a] (% survival)
Influent	02/17/10	7.20	20.1	779	---	---	---	---
	04/22/10	7.21	20.7	815	---	---	---	---
	05/19/10	7.16	18.7	825	---	---	---	---
	06/16/10	7.51	21.7	855	---	---	---	---
	06/30/10	7.21	20.2	1008	---	---	---	---
	07/07/10	7.18	20.9	900	---	---	---	---
	07/21/10	7.41	20.3	780	---	---	---	---
	08/27/10	7.52	20.7	921	---	---	---	---
	09/01/10	7.29	21.8	901	---	---	---	---
	09/16/10	7.25	20.4	873	---	---	---	---
	09/29/10	6.98	20.4	901	---	---	---	---
	10/06/10	7.12	19.7	764	---	---	---	---
	10/20/10	7.10	20.2	858	---	---	---	---
	11/03/10	6.87	21.1	1003	---	---	---	---
	11/17/10	6.89	18.2	781	---	---	---	---
	12/01/10	7.00	18	698	---	---	---	---
	12/15/10	7.01	19.7	913	---	---	---	---
	12/29/10	6.93	19.7	1026	---	---	---	---
Midpoint 1	01/06/10	7.22	19.6	963	---	---	---	---
	03/03/10	7.36	19.5	900	---	---	---	---
	04/07/10	7.04	18.8	955	---	---	---	---
	05/05/10	7.40	20.4	784	---	---	---	---
	06/02/10	7.26	19.2	861	---	---	---	---
	07/07/10	7.14	21.1	898	---	---	---	---
	08/04/10	7.14	19.9	831	---	---	---	---
	09/16/10	7.26	20.5	875	---	---	---	---
	10/20/2010	7.19	20.1	856	---	---	---	---
	11/17/2010	7.09	18.5	786	---	---	---	---
	12/29/2010	6.90	19.00	1017	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	---	---	---
Effluent Limitations[b]:		6.5 to 8.5	NE	NE	NE	NE	NE	70.0

Table 9b. Field Parameters and Other Analytical Results Summary, January through December 2010, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	pH	Temperature (^oC)	Conductivity (µS/cm)	Turbidity (NTU)	Hardness (mg/L as $CaCO_3$)	Salinity (ppt)	Rainbow Trout Acute Toxicity[a] (% survival)
Midpoint 2	02/03/10	7.26	18.0	944	---	---	---	---
	03/03/10	7.28	19.4	890	---	---	---	---
	04/07/10	6.98	18.5	950	---	---	---	---
	05/05/10	7.38	20.7	781	---	---	---	---
	08/04/10	7.19	19.9	836	---	---	---	---
	11/17/10	7.04	18.4	899	---	---	---	---
Effluent	01/06/10	7.21	19.3	970	---	---	---	---
	01/20/10	6.97	17.8	849	---	---	---	---
	01/21/10	7.23	18.3	840	---	---	---	---
	02/03/10	7.19	18.1	936	---	---	---	---
	02/17/10	7.16	19.5	781	---	---	---	---
	03/03/10	7.48	18.6	869	---	---	---	---
	03/17/10	7.19	21.0	828	---	---	---	---
	03/31/10	6.97	18.3	891	---	---	---	---
	04/14/10	7.01	18.6	798	---	---	---	---
	04/21/10	7.23	18.6	840	---	---	---	---
	04/22/10	7.26	20.4	822	---	---	---	---
	05/05/10	7.57	21.0	783	---	---	---	---
	05/19/10	7.30	18.9	823	---	---	---	---
	06/02/10	7.31	19.4	846	---	---	---	---
	06/16/10	7.44	22.0	901	---	---	---	---
	06/30/10	7.20	25.0	1010	---	---	---	---
	07/07/10	7.26	21.7	911	---	---	---	---
	07/21/10	7.51	20.1	726	---	---	---	---
	08/19/10	7.00	23.4	773	---	---	---	---
	09/01/10	7.37	22.2	911	---	---	---	---
	09/16/10	7.50	20.7	872	---	---	---	---
	09/29/19	7.04	20.7	897	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	---	---	---
Effluent Limitations:[b]		6.5 to 8.5	NE	NE	NE	NE	NE	70.0

Table 9b. Field Parameters and Other Analytical Results Summary, January through December 2010, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	pH	Temperature (°C)	Conductivity (µS/cm)	Turbidity (NTU)	Hardness (mg/L as $CaCO_3$)	Salinity (ppt)	Rainbow Trout Acute Toxicity[a] (% survival)
	10/06/10	7.18	19.8	777	---	---	---	---
	10/20/10	7.3	19.9	852	0.55	540	0.5	100
	11/03/10	6.7	20.9	992	---	---	---	---
	11/17/10	7.06	18.3	801	---	---	---	---
	12/01/10	7.09	17.8	706	---	---	---	---
	12/15/10	6.93	19.4	906	---	---	---	---
	12/29/10	6.96	18.90	1022	---	---	---	---
NPDES Trigger Levels:		---	---	---	5	---	---	---
Effluent Limitations:[b]		6.5 to 8.5	NE	NE	NE	NE	NE	70.0

Notes:

General Notes:

ALL PARAMETERS ARE WITHIN EFFLUENT LIMITS SPECIFIED IN NPDES PERMIT NO. CAG912003 and ORDER NO. R2-2009-0059.

Per Order No. R2-2009-0059, VOC General NPDES Permit CAG912003, pH, temperature, electrical conductivity, and turbidity are now required to be reported on an annual basis but pH, temperature and conductivity readings are collected on a monthly basis.

Hardness and salinity are required as a single annual sample in the receiving water only if trigger levels for selected metals (not selenium) have been exceeded.

Triennial sampling for inorganic trigger compounds was performed October 2009. Results were presented in the 4th Qtr and 2009 Annual Report submitted 2/15/2010.

Referenced Notes:

a = Rainbow trout acute toxicity, 96-hr static, percent survival; sampled in October of each year coincident with effluent sampling.

b = Effluent limitation in system discharge as specified in Order No. R2-2009-0059, VOC General NPDES Permit CAG912003.

Abbreviations:

--- = not applicable, not required

ºC = degrees Celsius

$CaCO_3$ = calcium carbonate

mg/L = milligrams per liter

Midpoint 1 = sample collected between the primary and secondary carbon vessels

Midpoint 2 = sample collected between the secondary and tertiary carbon vessels

NE = not established

NPDES = National Pollutant Discharge Elimination System

NTU = nephelometric turbidity unit

ppt = part per trillion

µS/cm = micro Siemens per centimeter

Table 10. VOC Mass Removal Summary, Fairchild System 1, 515 Whisman Road, Mountain View, California

TOTAL GROUNDWATER EXTRACTED (gallons):	
January	1,508,450
February	1,722,625
March	2,027,175
April	1,719,550
May	1,943,950
June	2,561,248
July	2,049,653
August	2,306,850
September	2,226,150
October	1,717,850
November	1,857,550
December	2,481,000
CUMULATIVE GROUNDWATER EXTRACTED IN 2010 (gallons):	**24,122,050**

INFLUENT VOC CONCENTRATION (mg/L)[a]:	
January	2.24
February	2.24
March	2.24
April	1.96
May	1.96
June	1.96
July	2.36
August	2.36
September	2.36
October	1.55
November	1.55
December	1.55
Unit Conversion ((L H_2O/gal H_2O)*(kg VOC/mg VOC)*(2.2 pounds/kg)):	**8.33E-06**

TOTAL VOC MASS REMOVED (pounds):	
January	28.1
February	32.1
March	37.8
April	28.1
May	31.8
June	41.8
July	40.3
August	45.3
September	43.8
October	22.1
November	23.9
December	32.0
CUMULATIVE MASS REMOVED IN 2010 (pounds):	**407**

Note:

a = System influent samples are collected the second month of every quarter. These concentrations are used for the entire quarter.

Abbreviations:

gal = gallons

H_2O = water

kg = kilograms

L = liters

mg = milligrams

VOC = volatile organic compound

Table 11. VOC Mass Removal Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California

TOTAL GROUNDWATER EXTRACTED (gallons):	
January	958,100
February	895,350
March	1,268,850
April	1,828,550
May	1,642,100
June	2,201,200
July	1,705,250
August	2,067,000
September	1,793,700
October	1,818,400
November	1,387,600
December	2,714,700
CUMULATIVE GROUNDWATER EXTRACTED IN 2010 (gallons):	**20,280,800**

INFLUENT VOC CONCENTRATION (mg/L)[a]:	
January	2.22
February	2.22
March	2.22
April	1.74
May	1.74
June	1.74
July	1.74
August	1.74
September	1.74
October	1.69
November	1.69
December	1.69
Unit Conversion ((L H_2O/gal H_2O)*(kg VOC/mg VOC)*(2.2 pounds/kg)):	**8.33E-06**

TOTAL VOC MASS REMOVED (pounds):	
January	17.7
February	16.5
March	23.4
April	26.5
May	23.8
June	31.9
July	24.7
August	30.0
September	26.0
October	25.6
November	19.6
December	38.3
CUMULATIVE MASS REMOVED IN 2010 (pounds):	**304**

Note:

a = System influent samples are collected the second month of every quarter. These concentrations are used for the entire quarter.

Abbreviations:

gal = gallons

H_2O = water

mg = milligrams

L = liters

VOC = volatile organic compound

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Southern Wall - Upgradient Well Pairs						
03/23/06	127A	34.74	33A	33.95	0.79	Inward
05/25/06	127A	34.46	33A	33.54	0.92	Inward
08/24/06	127A	34.27	33A	33.41	0.86	Inward
11/16/06	127A	34.09	33A	33.21	0.88	Inward
03/22/07	127A	34.56	33A	33.99	0.57	Inward
05/24/07	127A	34.18	33A	33.32	0.86	Inward
08/23/07	127A	34.30	33A	33.73	0.57	Inward
11/15/07	127A	34.49	33A	34.03	0.46	Inward
03/27/08	127A	34.41	33A	33.86	0.55	Inward
05/22/08	127A	34.46	33A	35.34	-0.88	Outward
08/28/08	127A	34.21	33A	33.66	0.55	Inward
11/20/08	127A	33.81	33A	33.28	0.53	Inward
03/26/09	127A	34.46	33A	33.99	0.47	Inward
05/21/09	127A	34.36	33A	34.24	0.12	Inward
08/27/09	127A	33.76	33A	33.24	0.52	Inward
11/19/09	127A	33.50	33A	33.02	0.48	Inward
03/25/10	127A	34.48	33A	34.00	0.48	Inward
05/27/10	127A	34.34	33A	33.80	0.54	Inward
08/26/10	127A	34.00	33A	33.46	0.54	Inward
11/18/10	127A	33.48	33A	33.05	0.43	Inward
03/23/06	128A	34.49	84A	33.31	1.18	Inward
05/25/06	128A	34.23	84A	32.80	1.43	Inward
08/24/06	128A	33.97	84A	32.50	1.47	Inward
11/16/06	128A	36.80	84A	31.88	4.92	Inward
03/22/07	128A	34.52	84A	32.76	1.76	Inward
05/24/07	128A	33.97	84A	32.64	1.33	Inward
08/23/07	128A	34.00	84A	32.97	1.03	Inward
11/15/07	128A	34.35	84A	33.44	0.91	Inward
03/27/08	128A	34.43	84A	33.28	1.15	Inward
05/22/08	128A	34.48	84A	33.33	1.15	Inward
11/20/08	128A	33.64	84A	33.02	0.62	Inward
03/26/09	128A	34.38	84A	33.38	1.00	Inward
05/21/09	128A	34.27	84A	33.09	1.18	Inward
08/27/09	128A	33.58	84A	32.58	1.00	Inward
11/19/09	128A	33.74	84A	32.22	1.52	Inward
03/25/10	128A	34.28	84A	33.38	0.90	Inward
05/27/10	128A	34.06	84A	33.05	1.01	Inward
08/26/10	128A	33.71	84A	32.79	0.92	Inward
11/18/10	128A	34.20	84A	32.12	2.08	Inward
03/23/06	136A	32.82	133A	31.62	1.20	Inward
05/25/06	136A	32.40	133A	31.12	1.28	Inward

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Southern Wall - Upgradient Well Pairs						
08/24/06	136A	32.12	133A	30.93	1.19	Inward
11/16/06	136A	31.99	133A	30.72	1.27	Inward
03/22/07	136A	33.08	133A	32.09	0.99	Inward
05/24/07	136A	32.32	133A	31.21	1.11	Inward
08/23/07	136A	32.37	133A	31.34	1.03	Inward
11/15/07	136A	33.06	133A	32.06	1.00	Inward
03/27/08	136A	32.83	133A	31.82	1.01	Inward
05/22/08	136A	32.78	133A	31.78	1.00	Inward
08/28/08	136A	32.48	133A	31.47	1.01	Inward
11/20/08	136A	32.02	133A	31.05	0.97	Inward
03/26/09	136A	32.88	133A	31.93	0.95	Inward
05/21/09	136A	32.53	133A	31.82	0.71	Inward
08/27/09	136A	32.03	133A	31.05	0.98	Inward
11/19/09	136A	31.80	133A	30.85	0.95	Inward
03/25/10	136A	32.94	133A	31.95	0.99	Inward
05/27/10	136A	32.40	133A	31.41	0.99	Inward
08/26/10	136A	32.04	133A	31.01	1.03	Inward
11/18/10	136A	32.25	133A	30.50	1.75	Inward
Western Wall - Crossgradient Well Pairs						
03/23/06	130A	28.64	59A	27.40	1.24	Inward
05/25/06	130A	27.51	59A	26.38	1.13	Inward
08/24/06	130A	27.37	59A	26.10	1.27	Inward
11/16/06	130A	27.30	59A	26.08	1.22	Inward
03/22/07	130A	28.29	59A	27.69	0.60	Inward
05/24/07	130A	27.67	59A	26.66	1.01	Inward
08/23/07	130A	27.74	59A	26.67	1.07	Inward
11/15/07	130A	28.18	59A	27.32	0.86	Inward
03/27/08	130A	27.98	59A	27.01	0.97	Inward
05/22/08	130A	27.94	59A	26.95	0.99	Inward
08/28/08	130A	27.60	59A	26.74	0.86	Inward
11/20/08	130A	27.40	59A	26.56	0.84	Inward
03/26/09	130A	28.15	59A	27.14	1.01	Inward
05/21/09	130A	27.70	59A	26.64	1.06	Inward
08/27/09	130A	27.50	59A	26.44	1.06	Inward
11/19/09	130A	27.26	59A	26.21	1.05	Inward
03/25/10	130A	28.19	59A	27.19	1.00	Inward
05/27/10	130A	27.75	59A	26.58	1.17	Inward
08/26/10	130A	27.76	59A	26.56	1.20	Inward
11/18/10	130A	27.46	59A	25.68	1.78	Inward
Northern Wall - Downgradient Well Pairs						
03/23/06	76A	23.88	118A	24.46	-0.58	Outward

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Northern Wall - Downgradient Well Pairs						
05/25/06	76A	22.84	118A	23.71	-0.87	Outward
08/24/06	76A	22.51	118A	23.21	-0.70	Outward
11/16/06	76A	22.89	118A	23.14	-0.25	Outward
03/22/07	76A	26.09	118A	25.78	0.31	Inward
05/24/07	76A	23.30	118A	23.98	-0.68	Outward
08/23/07	76A	23.05	118A	24.49	-1.44	Outward
11/15/07	76A	25.75	118A	25.01	0.74	Inward
03/27/08	76A	23.58	118A	24.95	-1.37	Outward
05/22/08	76A	23.31	118A	24.68	-1.37	Outward
08/28/08	76A	23.20	118A	24.53	-1.33	Outward
11/20/08	76A	23.09	118A	24.53	-1.44	Outward
03/26/09	76A	23.53	118A	24.88	-1.35	Outward
05/21/09	76A	23.06	118A	24.63	-1.57	Outward
08/27/09	76A	22.83	118A	24.28	-1.45	Outward
11/19/09	76A	22.86	118A	24.49	-1.63	Outward
03/25/10	76A	23.51	118A	24.97	-1.46	Outward
05/27/10	76A	23.34	118A	24.78	-1.44	Outward
08/26/10	76A	23.07	118A	24.29	-1.22	Outward
11/18/10	76A	22.51	118A	24.15	-1.64	Outward
03/23/06	156A	23.13	157A	24.76	-1.63	Outward
05/25/06	156A	21.87	157A	23.96	-2.09	Outward
08/24/06	156A	21.55	157A	23.68	-2.13	Outward
11/16/06	156A	21.50	157A	23.66	-2.16	Outward
03/22/07	156A	22.94	157A	25.59	-2.65	Outward
05/24/07	156A	21.91	157A	24.32	-2.41	Outward
08/23/07	156A	21.84	157A	24.26	-2.42	Outward
11/15/07	156A	22.55	157A	25.19	-2.64	Outward
03/27/08	156A	22.29	157A	24.69	-2.40	Outward
05/22/08	156A	22.06	157A	24.62	-2.56	Outward
08/28/08	156A	21.82	157A	24.38	-2.56	Outward
11/20/08	156A	21.62	157A	24.15	-2.53	Outward
03/26/09	156A	22.22	157A	24.88	-2.66	Outward
05/21/09	156A	21.78	157A	24.40	-2.62	Outward
08/27/09	156A	21.82	157A	24.30	-2.48	Outward
11/19/09	156A	21.21	157A	24.06	-2.85	Outward
03/25/10	156A	22.37	157A	24.93	-2.56	Outward
05/27/10	156A	22.08	157A	24.53	-2.45	Outward
08/26/10	156A	22.01	157A	24.36	-2.35	Outward
11/18/10	156A	22.23	157A	24.81	-2.58	Outward
Eastern Wall - Crossgradient Well Pairs						
03/23/06	129A	28.95	121A	26.78	2.17	Inward
05/25/06	129A	28.43	121A	26.15	2.28	Inward

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Eastern Wall - Crossgradient Well Pairs						
08/24/06	129A	28.21	121A	25.96	2.25	Inward
11/16/06	129A	28.17	121A	26.16	2.01	Inward
03/22/07	129A	29.44	121A	28.05	1.39	Inward
05/24/07	129A	28.67	121A	26.89	1.78	Inward
08/23/07	129A	28.44	121A	26.91	1.53	Inward
11/15/07	129A	29.35	121A	27.82	1.53	Inward
03/27/08	129A	28.70	121A	27.52	1.18	Inward
05/22/08	129A	28.77	121A	27.42	1.35	Inward
08/28/08	129A	28.65	121A	27.17	1.48	Inward
11/20/08	129A	28.33	121A	26.89	1.44	Inward
03/26/09	129A	29.02	121A	27.72	1.30	Inward
05/21/09	129A	28.58	121A	27.24	1.34	Inward
08/27/09	129A	28.26	121A	26.92	1.34	Inward
11/19/09	129A	28.11	121A	26.77	1.34	Inward
03/25/10	129A	29.03	121A	27.78	1.25	Inward
05/27/10	129A	28.59	121A	26.74	1.85	Inward
08/26/10	129A	28.31	121A	26.45	1.86	Inward
11/18/10	129A	28.33	121A	25.82	2.51	Inward
Vertical Gradient Well Pairs						
03/23/06	20B1	33.84	33A	33.95	-0.11	Downward
05/25/06	20B1	33.51	33A	33.54	-0.03	Downward
08/24/06	20B1	33.18	33A	33.41	-0.23	Downward
11/16/06	20B1	33.14	33A	33.21	-0.07	Downward
03/22/07	20B1	33.80	33A	33.99	-0.19	Downward
05/24/07	20B1	33.28	33A	33.32	-0.04	Downward
08/23/07	20B1	33.46	33A	33.73	-0.27	Downward
11/15/07	20B1	33.99	33A	34.03	-0.04	Downward
03/27/08	20B1	33.74	33A	33.86	-0.12	Downward
05/22/08	20B1	33.79	33A	35.34	-1.55	Downward
08/28/08	20B1	33.44	33A	33.66	-0.22	Downward
11/20/08	20B1	32.98	33A	33.28	-0.30	Downward
03/26/09	20B1	33.79	33A	33.99	-0.20	Downward
05/21/09	20B1	33.55	33A	34.24	-0.69	Downward
08/27/09	20B1	32.99	33A	33.24	-0.25	Downward
11/19/09	20B1	32.72	33A	33.02	-0.30	Downward
03/25/10	20B1	33.39	33A	34.00	-0.61	Downward
05/27/10	20B1	33.51	33A	33.80	-0.29	Downward
08/26/10	20B1	33.15	33A	33.46	-0.31	Downward
11/18/10	20B1	32.58	33A	33.05	-0.47	Downward
03/23/06	60B1	23.98	118A	24.46	-0.48	Downward
05/25/06	60B1	23.29	118A	23.71	-0.42	Downward
08/24/06	60B1	23.11	118A	23.21	-0.10	Downward

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Vertical Gradient Well Pairs						
11/16/06	60B1	23.24	118A	23.14	0.10	Upward
03/22/07	60B1	25.61	118A	25.78	-0.17	Downward
05/24/07	60B1	24.75	118A	23.98	0.77	Upward
08/23/07	60B1	23.56	118A	24.49	-0.93	Downward
11/15/07	60B1	24.13	118A	25.01	-0.88	Downward
03/27/08	60B1	22.48	118A	24.95	-2.47	Downward
05/22/08	60B1	22.49	118A	24.68	-2.19	Downward
08/28/08	60B1	21.99	118A	24.53	-2.54	Downward
11/20/08	60B1	21.55	118A	24.53	-2.98	Downward
03/26/09	60B1	23.94	118A	24.88	-0.94	Downward
05/21/09	60B1	22.38	118A	24.63	-2.25	Downward
08/27/09	60B1	22.29	118A	24.28	-1.99	Downward
11/19/09	60B1	21.56	118A	24.49	-2.93	Downward
03/25/10	60B1	22.83	118A	24.97	-2.14	Downward
05/27/10	60B1	22.57	118A	24.78	-2.21	Downward
08/26/10	60B1	22.36	118A	24.29	-1.93	Downward
11/18/10	60B1	22.48	118A	24.15	-1.67	Downward
03/23/06	115B1	26.43	124A	25.22	1.21	Upward
05/25/06	115B1	25.73	124A	24.44	1.29	Upward
08/24/06	115B1	25.61	124A	24.04	1.57	Upward
11/16/06	115B1	25.70	124A	24.19	1.51	Upward
03/22/07	115B1	28.02	124A	26.46	1.56	Upward
05/24/07	115B1	27.25	124A	25.01	2.24	Upward
08/23/07	115B1	26.08	124A	25.03	1.05	Upward
11/15/07	115B1	26.94	124A	25.88	1.06	Upward
03/27/08	115B1	25.81	124A	25.11	0.70	Upward
05/22/08	115B1	26.00	124A	25.41	0.59	Upward
08/28/08	115B1	25.50	124A	25.20	0.30	Upward
11/20/08	115B1	25.12	124A	25.04	0.08	Upward
03/26/09	115B1	27.26	124A	25.66	1.60	Upward
05/21/09	115B1	25.65	124A	25.21	0.44	Upward
08/27/09	115B1	25.41	124A	24.91	0.50	Upward
11/19/09	115B1	24.98	124A	24.81	0.17	Upward
03/25/10	115B1	26.13	124A	25.80	0.33	Upward
05/27/10	115B1	25.67	124A	24.63	1.04	Upward
08/26/10	115B1	25.68	124A	25.20	0.48	Upward
11/18/10	115B1	24.90	124A	25.02	-0.12	Downward
03/23/06	119B1	32.81	133A	31.62	1.19	Upward
05/25/06	119B1	32.48	133A	31.12	1.36	Upward
08/24/06	119B1	32.13	133A	30.93	1.20	Upward
11/16/06	119B1	32.03	133A	30.72	1.31	Upward
03/22/07	119B1	33.15	133A	32.09	1.06	Upward

Table 12. Groundwater Elevations, Slurry Wall Well Pairs, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Date	Well ID (outer or lower)	Groundwater Elevation (ft amsl)	Well ID (inner or upper)	Groundwater Elevation (ft amsl)	Difference (ft)	Inward/Outward Upward/Downward[1]
Vertical Gradient Well Pairs						
05/24/07	119B1	32.42	133A	31.21	1.21	Upward
08/23/07	119B1	32.42	133A	31.34	1.08	Upward
11/15/07	119B1	33.12	133A	32.06	1.06	Upward
03/27/08	119B1	32.80	133A	31.82	0.98	Upward
05/22/08	119B1	32.81	133A	31.78	1.03	Upward
08/28/08	119B1	32.51	133A	31.47	1.04	Upward
11/20/08	119B1	32.01	133A	31.05	0.96	Upward
03/26/09	119B1	32.91	133A	31.93	0.98	Upward
05/21/09	119B1	32.55	133A	31.82	0.73	Upward
08/27/09	119B1	32.11	133A	31.05	1.06	Upward
11/19/09	119B1	31.83	133A	30.85	0.98	Upward
03/25/10	119B1	32.94	133A	31.95	0.99	Upward
05/27/10	119B1	32.48	133A	31.41	1.07	Upward
08/26/10	119B1	32.17	133A	31.01	1.16	Upward
11/18/10	119B1	31.55	133A	30.50	1.05	Upward

Notes:

[1] = Inward/Outward indicates horizontal groundwater flow gradient into or out of the slurry wall, and Upward/Downward indicates vertical groundwater flow gradient to upper or lower groundwater zones.

Abbreviations:

ft = feet
ft amsl = feet above mean sea level
inner = well inside slurry wall
outer = well outside slurry wall
upper = shallower well inside slurry wall
lower = deeper well inside slurry wall

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			< µg/L >													
33A	11/19/07	CT/8260	<1.0	1.2	<0.5	2.4	12	<0.5	8.5	<20	<0.5	4	61	<0.5	89.1	---
46A	11/21/07	CT/8260	<1.0	0.6	<0.5	1.2	0.6	<0.5	<0.5	<20	<0.5	1.2	3.4	<0.5	7	---
46A	11/14/08	CT/8260	<1.0	1.3	<0.5	2.3	0.7	<0.5	1.2	<20	<0.5	1.7	20	<0.5	27.2	---
46A	11/12/09	CT/8260	<1.0	1.1	<0.5	1.3	<0.5	<0.5	<2.0	<20	<0.5	1.5	14	<0.5	17.9	---
46A	11/11/10	CT/8260	<1.0	1	<0.5	1.4	0.6	<0.5	<2.0	<2.0	<0.5	1.2	14	<0.5	18.2	---
51A	11/08/07	CT/8260	<20	19	<10	26	1,300	34	<10	<400	<10	<10	11	<10	1412	---
57A	11/19/07	CT/8260	<50	36	<25	31	4,100	210	<25	<1000	<25	<25	76	<25	4583	---
59A	11/21/07	CT/8260	<1.0	14	<0.5	9.1	8.1	<0.5	<0.5	<20	0.5	8.1	37	0.5	77.3	---
61A	11/21/07	CT/8260	<1.0	1.6	<0.5	2.3	0.7	<0.5	0.8	<20	<0.5	1.6	19	<0.5	26	---
61A	11/14/08	CT/8260	<1.0	0.6	<0.5	0.8	<0.5	<0.5	<0.5	<20	<0.5	1.2	3.5	<0.5	6.1	---
61A	11/02/09	CT/8260	<1.0	<0.5	<0.5	1	<0.5	<0.5	<2.0	<20	<0.5	1.1	3.6	<0.5	5.7	---
61A	11/15/10	CT/8260	<1.0	0.6	<0.5	1.2	<0.5	<0.5	<2.0	<2.0	<0.5	1.5	3.4	<0.5	6.7	---
62A	11/08/06	CT/8260	<50	<25	<25	67	6,800	49	<25	<1000	<25	<25	160	<25	7076	---
62A (DUP)	11/08/06	CT/8260	<83	<42	<42	62	7,300	57	<42	<1700	<42	<42	170	<42	7589	---
62A	11/12/07	CT/8260	<130	<63	<63	<63	7,000	<63	<63	<2500	<63	<63	71	<63	7071	---
62A (DUP)	11/12/07	CT/8260	<83	<42	<42	46	8,000	47	<42	<1700	<42	<42	80	<42	8173	---
62A	11/06/08	CT/8260	<250	<250	<250	<250	6,000	<250	<250	<250	<250	<250	<250	<250	6000	---
62A	11/17/09	CT/8260	<5.0	12	<2.5	30	4,500	73	<10	<100	<2.5	<2.5	<25	3.1	4618.1	---
62A	11/23/10	CT/8260	<50	<25	<25	38	4,900	47	<100	<100	<25	<25	41	<25	5026	---
67A	11/13/07	CT/8260	<10	7.1	<5.0	11	990	9.8	7.9	<200	<5.0	<5.0	200	<5.0	1225.8	---
68A	11/21/07	CT/8260	<7.1	4.1	<3.6	5.1	350	7.6	<3.6	<140	<3.6	4.6	180	<3.6	551.4	---
76A	12/11/08	CT/8260	<2.5	2.4	<1.3	2.1	140	2.3	4.4	<50	<1.3	1.3	300	<1.3	452.5	---
76A	11/04/09	CT/8260	<1.0	3.9	<0.5	3.1	190	3	2.8	<20	<0.5	1.5	350	<0.5	554.3	---
76A	11/16/10	CT/8260	<1.4	0.8	<0.7	0.9	29	1.2	<2.9	<2.9	<0.7	0.9	120	<0.7	152.8	---
84A	11/19/07	CT/8260	<1.0	3	<0.5	0.9	1.8	<0.5	<0.5	<20	<0.5	4.4	1	<0.5	11.1	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<						µg/L							>
118A	12/11/08	CT/8260	<7.1	18	<3.6	8.7	210	22	7.7	<140	4.2	4.7	970	<3.6	1245.3	---
118A	11/04/09	CT/8260	3.1	20	<0.5	11	220	13	2.9	<20	3.5	4.9	740	1.6	1020	---
118A	11/16/10	CT/8260	<10	23	<5.0	20	300	17	<20	<20	<5.0	<5.0	790	<5.0	1150	---
121A	11/08/07	CT/8260	<25	<13	<13	<13	1,500	61	<13	<500	<13	<13	42	<13	1603	---
121A	11/08/10	CT/8260	<5.0	8	<5.0	10	1,300	14	<20	<200	<5.0	<5.0	43	<5.0	1375	---
124A	11/08/07	CT/8260	<83	<42	<42	42	4,400	<42	<42	<1700	<42	<42	240	<42	4682	---
127A	11/20/06	CT/8260	<1.0	<0.5	<0.5	0.9	2.2	<0.5	3.1	<20	<0.5	1.9	32	<0.5	40.1	---
127A	11/07/07	CT/8260	<1.0	1.5	<0.5	3	19	<0.5	11	<20	<0.5	4.4	71	<0.5	109.9	---
127A	11/06/08	CT/8260	0.65	2.5	<0.50	4.8	38	<0.50	18	<0.50	<0.50	7.1	95	<0.50	166.05	---
127A	11/16/09	CT/8260	<1.0	1.5	<0.5	3.1	45	<0.5	9.7	<20	<0.5	4	76	<0.5	139.3	---
127A	11/11/10	CT/8260	<1.4	<0.7	<0.7	1.7	29	<0.7	3.7	<2.9	<0.7	1.8	86	<0.7	122.2	---
129A	11/17/10	CT/8260	<4.0	6.7	<2.0	7	160	2.3	<8.0	<8.0	<2.0	<2.0	340	<2.0	516	---
130A	11/21/06	CT/8260	<1.0	3.2	<0.5	4.4	12	0.7	<1.3	<20	11	4	170	<0.5	207.2	---
130A	11/07/07	CT/8260	<2.0	1.9	<1.0	2.3	14	<1.0	<1.0	<40	3.6	2.1	130	<1.0	156.1	---
130A	11/12/08	CT/8260	<2.0	1.9	<1.0	3	12	<1.0	<1.0	<40	5.5	2.9	140	<1.0	167.2	---
130A	11/03/09	CT/8260	<2.0	2.5	<1.0	2.8	10	<1.0	<4.0	<40	8.3	3	120	<1.0	147.8	---
130A	11/16/10	CT/8260	<1.4	3.1	<0.7	4.1	11	<0.7	<2.9	<2.9	7.2	3	110	0.8	140.6	---
133A	11/08/07	CT/8260	<3.3	3.5	<1.7	3.8	72	3	16	<67	<1.7	2.8	260	<1.7	361.1	---
133A	11/03/10	CT/8260	<1.7	3.5	<1.7	4.4	74	2.6	15	<67	<1.7	2.5	250	<1.7	352	---
156A	11/21/06	CT/8260	<17	<8.3	<8.3	16	2,000	29	<8.3	<330	<8.3	<8.3	36	<8.3	2081	---
156A	11/07/07	CT/8260	<33	<17	<17	<17	1,700	43	<17	<670	<17	<17	80	<17	1823	---
156A	11/11/08	CT/8260	<1.0	4.7	<0.5	11	1,300	12	1	<20	<0.5	<0.5	61	0.6	1391	---
156A	11/05/09	CT/8260	<17	<8.3	<8.3	<8.3	1,400	45	<33	<330	<8.3	<8.3	43	<8.3	1488	---
156A	11/17/10	CT/8260	<14	<7.1	<7.1	13	1,300	13	<29	<29	<7.1	<7.1	37	<7.1	1363	---
157A	11/19/07	CT/8260	<25	51	<13	34	1,800	25	20	<500	13	<13	2,000	<13	3943	---
157A	12/11/08	CT/8260	<13	52	<6.3	27	1,500	33	20	<250	6.5	<6.3	1,100	<6.3	2738.5	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<							µg/L						>
157A (DUP)	12/11/08	CT/8260	<7.1	56	<3.6	18	1,500	86	15	<140	5	<3.6	1,200	<3.6	2880	---
157A	11/05/09	CT/8260	<1.0	60	<0.5	37	1,800	11	20	<20	10	0.7	1,700	1	3639.7	---
157A (DUP)	11/05/09	CT/8260	<1.0	55	<0.5	33	1,700	9	18	<20	8.5	0.7	1,600	0.9	3425.1	---
157A	11/17/10	CT/8260	<25	61	<13	42	2,000	<13	<50	<50	<13	<13	1,300	<13	3403	---
157A (DUP)	11/17/10	CT/8260	<33	59	<17	41	1,900	<17	<67	<67	<17	<17	1,300	<17	3300	---
AE/RW-9-1	08/08/07	CT/8260	<33	500	<17	74	1,000	<17	24	<670	<17	2,600	1,200	71	5469	---
AE/RW-9-1	04/22/08	CT/8260	<8.3	47	<4.2	22	430	11	16	<170	<4.2	140	650	5.1	1331.1	---
AE/RW-9-1	11/07/08	CT/8260	<13	54	<6.3	24	460	10	19	<250	<6.3	360	730	<6.3	1668	---
AE/RW-9-1	11/17/09	CT/8260	<2.0	19	<1.0	11	400	12	11	<40	4.4	36	460	2.6	965.8	---
AE/RW-9-1	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3.4
AE/RW-9-1	11/12/10	CT/8260	<6.3	71	<3.1	26	470	11	<13	<13	<3.1	260	490	12	1346.1	---
AE/RW-9-2	08/08/07	CT/8260	<100	<50	<50	<50	5,100	59	110	<2000	<50	84	5,400	220	10973	---
AE/RW-9-2	11/16/07	CT/8260	<50	58	<25	39	3,700	45	56	<1000	<25	74	2,500	170	6642	---
AE/RW-9-2	11/06/08	CT/8260	<100	<100	<100	<100	3,100	<100	<100	<100	<100	<100	4,100	130	7330	---
AE/RW-9-2	11/17/09	CT/8260	<4.0	58	<2.0	27	2,700	35	67	<80	<2.0	42	3,000	95	6024	---
AE/RW-9-2	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3.2
AE/RW-9-2	11/12/10	CT/8260	<100	130	<50	78	5,400	<50	210	<200	<50	74	7,200	260	13352	---
BLDG-18	11/24/08	CT/8260	<7.1	<3.6	<3.6	<3.6	300	12	<3.6	<140	<3.6	<3.6	510	4.8	826.8	---
REG-MW-2A	11/15/06	CT/8260	<2.5	9.8	<1.3	18	2,000	20	22	<50	1.6	4.2	2,100	42	4222.9	---
REG-MW-2A	11/09/07	CT/8260	<50	<25	<25	<25	2,700	40	<25	<1000	<25	<25	670	31	3441	---
REG-MW-2A	11/13/08	CT/8260	<6.3	8.4	<3.1	12	850	12	9.6	<130	<3.1	<3.1	900	11	1806.2	---
REG-MW-2A	11/16/09	CT/8260	<6.3	11	<3.1	18	4,300	59	<13	<130	<3.1	<3.1	110	53	4551	---
REG-MW-2A	11/22/10	CT/8260	<10	8.1	<5.0	13	880	12	<20	<20	<5.0	<5.0	940	25	1878.1	---
RW-3A	08/08/07	CT/8260	<1.0	0.8	<0.5	1.8	9.4	<0.5	5.4	<20	<0.5	2.1	51	<0.5	70.5	---
RW-3A	11/16/07	CT/8260	<1.0	1.1	<0.5	1.7	16	<0.5	7.3	<20	<0.5	3.6	65	<0.5	94.7	---
RW-3A	11/15/08	CT/8260	<1.0	1.8	<0.5	3.5	28	<0.5	16	<20	<0.5	5.3	83	<0.5	137.6	---
RW-3A	11/13/09	CT/8260	<1.0	1.5	<0.5	3.7	41	<0.5	11	<20	<0.5	4.1	82	<0.5	143.3	---
RW-3A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-3A	12/10/10	CT/8260	<1.0	0.7	<0.5	1.9	24	<0.5	4.4	<2.0	<0.5	2	72	<0.5	105	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			< µg/L >													
RW-4A	11/21/06	CT/8260	<1.0	2.7	<0.5	3.4	18	0.5	<1.0	<20	11	4.7	99	1.4	144.5	---
RW-4A	08/08/07	CT/8260	<1.0	2.2	<0.5	2.6	20	<0.5	0.7	<20	8.7	4.2	96	2.2	139.3	---
RW-4A	11/16/07	CT/8260	<1.0	1.9	<0.5	1.5	30	0.5	<0.5	<20	3.7	2.3	49	5.6	95.2	---
RW-4A	11/15/08	CT/8260	<1.0	1.5	<0.5	0.9	15	0.5	<0.5	<20	3.1	1.7	42	3.1	68.4	---
RW-4A	11/24/09	CT/8260	<1.0	1.6	<0.5	1.1	19	0.7	<2.0	<20	3.1	1.6	38	2.1	67.9	---
RW-4A	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-4A	11/15/10	CT/8260	<1.0	2.4	<0.5	2.6	42	0.8	<2.0	<2.0	5.1	3.2	87	0.6	145.6	---
RW-5A	08/08/07	CT/8260	<25	32	<13	24	1,100	110	<50	<500	79	13	1,400	15	2933	---
RW-5A	11/14/07	CT/8260	<25	44	<13	30	1,300	130	<13	<500	81	21	1,700	25	3501	---
RW-5A	11/14/08	CT/8260	<14	36	<7.1	26	980	100	<7.1	<290	85	17	1,500	21	2935	---
RW-5A	11/04/09	CT/8260	<20	27	<10	19	710	71	<40	<400	76	15	1,300	18	2396	---
RW-5A	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	2.5
RW-5A	11/17/10	CT/8260	<10	29	<5.0	26	790	73	<20	<20	57	13	1,100	27	2245	---
RW-7A	08/08/07	CT/8260	<14	16	<7.1	14	640	24	6.4	<290	8.9	<7.1	880	<7.1	1606.3	---
RW-7A	11/12/07	CT/8260	<17	17	<8.3	16	750	18	8.6	<330	<8.3	<8.3	1,000	<8.3	1822.6	---
RW-7A	11/04/08	CT/8260	<13	13	<6.3	17	500	20	7.1	<250	7.6	<6.3	890	<6.3	1466.7	---
RW-7A	11/05/09	CT/8260	<13	15	<6.3	14	580	16	<25	<250	9.3	<6.3	870	<6.3	1520.3	---
RW-7A	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	2.7
RW-7A	11/16/10	CT/8260	<8.3	18	<4.2	20	640	17	<17	<17	8.5	4.5	710	4.5	1436.5	---
RW-9A	11/15/06	CT/8260	<2.5	4.3	<1.3	4	380	7.2	6.3	<50	<1.3	1.9	540	<1.3	943.7	---
RW-9A	08/08/07	CT/8260	<7.1	<3.6	<3.6	<3.6	350	4.9	4.8	<140	<3.6	<3.6	520	<3.6	879.7	---
RW-9A	11/16/07	CT/8260	<10	6.2	<5.0	7.7	720	16	12	<200	<5.0	<5.0	850	<5.0	1611.9	---
RW-9A	11/15/08	CT/8260	<13	<6.3	<6.3	6.4	880	10	8.3	<250	<6.3	<6.3	410	<6.3	1314.7	---
RW-9A	11/17/09	CT/8260	<20	<10	<10	18	2,700	18	<40	<400	<10	<10	470	12	3218	---
RW-9A	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	6.6
RW-9A	11/22/10	CT/8260	<3.3	3.3	<1.7	4.2	250	3.9	<6.7	<6.7	<1.7	<1.7	440	<1.7	701.4	---
RW-16A	08/08/07	CT/8260	<5.0	5.8	<2.5	11	110	<2.5	15	<100	<2.5	3.4	430	<2.5	575.2	---
RW-16A	11/13/07	CT/8260	<6.3	7.5	<3.1	11	110	<3.1	7.9	<130	<3.1	<3.1	320	<3.1	456.4	---
RW-16A	11/15/08	CT/8260	<1.4	9.8	<0.7	17	150	1.2	7.6	<29	<0.7	3.8	280	1.2	470.6	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<						µg/L							>
RW-16A	11/13/09	CT/8260	<1.0	5.7	<0.5	10	89	1	6.9	<20	0.8	3	240	<0.5	356.4	---
RW-16A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	1.2
RW-16A	11/03/10	CT/8260	<2.0	9	<2.0	15	170	<2.0	<8.0	<80	<2.0	3.1	320	<2.0	517.1	---
RW-18A	08/08/07	CT/8260	<10	12	<5.0	13	610	9.7	5.2	<200	<5.0	<5.0	660	<5.0	1309.9	---
RW-18A	11/19/07	CT/8260	<8.3	7.8	<4.2	9.9	340	9.3	6.8	<170	<4.2	<4.2	520	<4.2	893.8	---
RW-18A	11/14/08	CT/8260	<6.3	9	<3.1	8.9	380	13	<3.1	<130	<3.1	<3.1	500	<3.1	910.9	---
RW-18A	11/03/09	CT/8260	<6.3	8.7	<3.1	8.7	380	14	<13	<130	<3.1	<3.1	490	<3.1	901.4	---
RW-18A	11/03/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	2.5
RW-18A	11/04/10	CT/8260	<2.5	11	<2.5	13	490	8.1	<10	<100	<2.5	<2.5	460	<2.5	982.1	---
RW-18A (DUP)	11/04/10	CT/8260	<2.5	11	<2.5	12	480	8.5	<10	<100	<2.5	<2.5	470	<2.5	981.5	---
RW-20A	08/08/07	CT/8260	<13	23	<6.3	18	860	11	9.1	<250	<6.3	34	790	15	1767.7	---
RW-20A	11/16/07	CT/8260	<6.3	83	<3.1	69	480	8.6	7.1	<130	8.5	420	440	<3.1	1516.2	---
RW-20A	11/15/08	CT/8260	<5.0	21	<2.5	18	590	8.4	6.7	<100	3.1	48	360	4.2	1063.2	---
RW-20A	11/13/09	CT/8260	<1.0	13	<0.5	14	680	9.7	8.5	<20	2.4	6.5	840	5.1	1588.3	---
RW-20A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3.9
RW-20A	11/12/10	CT/8260	<14	13	<7.1	17	730	15	<29	<29	<7.1	13	910	7.6	1714.2	---
RW-21A	08/08/07	CT/8260	<6.3	8.7	<3.1	7.4	250	6.9	12	<130	6.3	8.5	340	<3.1	644.1	---
RW-21A	11/16/07	CT/8260	<1.4	8.1	<0.7	5	64	4.8	52	<29	3.5	4.9	71	1.1	214.4	---
RW-21A	11/17/08	CT/8260	<1.0	7.8	<0.5	5.8	68	8.1	49	<20	<0.5	1.7	58	1.3	199.7	---
RW-21A (DUP)	11/17/08	CT/8260	<1.0	8	<0.5	5.5	68	8.7	50	<20	<0.5	1.6	60	1.3	203.1	---
RW-21A	11/13/09	CT/8260	<1.0	4.9	<0.5	4.2	68	0.7	50	<20	<0.5	0.5	79	0.8	208.1	---
RW-21A (DUP)	11/13/09	CT/8260	<1.0	4.9	<0.5	3.9	65	0.6	50	<20	<0.5	<0.5	79	0.9	204.3	---
RW-21A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	2.1
RW-21A	11/12/10	CT/8260	<4.0	8.9	<2.0	9.2	310	11	26	<8.0	2.7	2.5	310	2.7	686.3	---
RW-21A (DUP)	11/12/10	CT/8260	<4.0	8.7	<2.0	9.1	300	11	26	<8.0	2.5	2.6	310	2.9	676.2	---
RW-25A	11/21/06	CT/8260	<40	<10	<10	17	1,400	20	72	<400	<10	<10	1,700	37	3246	---
RW-25A	11/16/07	CT/8260	<33	<17	<17	24	2,600	29	42	<670	<17	<17	2,200	91	4986	---
RW-25A	11/07/08	CT/8260	<25	<13	<13	20	2,100	25	39	<500	<13	<13	2,100	55	4339	---
RW-25A (DUP)	11/07/08	CT/8260	<40	<20	<20	21	2,100	24	44	<800	<20	<20	2,100	55	4344	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			< µg/L >													
RW-25A	11/05/09	CT/8260	<33	<17	<17	18	2,200	27	<67	<670	<17	<17	1,900	46	4191	---
RW-25A (DUP)	11/05/09	CT/8260	<1.0	13	<0.5	24	2,100	32	31	<20	1.7	6.7	1,800	62	4074.6	---
RW-25A	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3.5
RW-25A (DUP)	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3
RW-25A	11/16/10	CT/8260	<25	<13	<13	22	1,700	22	<50	<50	<13	<13	1,500	60	3304	---
RW-25A (DUP)	11/16/10	CT/8260	<25	<13	<13	22	1,700	21	<50	<50	<13	<13	1,400	58	3201	---
RW-27A	08/08/07	CT/8260	<20	19	<10	18	590	21	6.5	<400	<10	<10	1,300	<10	1954.5	---
RW-27A	11/14/07	CT/8260	<20	17	<10	<10	730	41	<10	<400	<10	<10	1,300	<10	2088	---
RW-27A	11/04/08	CT/8260	<20	17	<10	16	580	14	<10	<400	<10	<10	1,200	<10	1827	---
RW-27A	11/04/09	CT/8260	<17	19	<8.3	14	570	9.7	<33	<330	<8.3	<8.3	1,000	<8.3	1612.7	---
RW-27A	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	4.8
RW-27A	11/16/10	CT/8260	<10	26	<5.0	23	610	14	<20	<20	<5.0	<5.0	920	7.5	1600.5	---
RW-28A	08/08/07	CT/8260	<7.1	10	<3.6	12	420	20	3.5	<140	4.2	<3.6	590	<3.6	1071.7	---
RW-28A (DUP)	08/08/07	CT/8260	<13	12	<6.3	11	440	21	3.4	<250	<6.3	<6.3	610	<6.3	1109.4	---
RW-28A	11/13/07	CT/8260	<10	9.5	<5.0	15	330	18	<5.0	<200	5.7	<5.0	740	<5.0	1133.2	---
RW-28A	11/15/08	CT/8260	<8.3	9.7	<4.2	12	800	15	<4.2	<170	<4.2	<4.2	41	12	897.9	---
RW-28A	11/03/09	CT/8260	<8.3	12	<4.2	12	960	31	<17	<170	<4.2	<4.2	150	11	1184.5	---
RW-28A	11/03/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	2.5
RW-28A	11/09/10	CT/8260	<5.0	14	<5.0	14	760	8.8	<20	<200	<5.0	<5.0	350	11	1157.8	---
2B1	11/17/06	CT/8260	<1.0	5.3	<0.5	9.9	100	0.8	6.9	<20	<0.5	1.8	520	<4.2	644.7	---
2B1	11/08/07	CT/8260	<7.1	5.3	<3.6	6.5	110	3.8	5.6	<140	<3.6	<3.6	500	<3.6	631.2	---
2B1	11/06/08	CT/8260	<0.50	5.5	<0.50	8.7	93	0.99	5.4	<0.50	<0.50	<0.50	470	<0.50	583.59	---
2B1	11/17/09	CT/8260	<4.0	3.4	<2.0	3.1	65	6.4	<8.0	<80	<2.0	<2.0	270	<2.0	347.9	---
2B1	11/11/10	CT/8260	<5.0	3.4	<2.5	3	80	3.3	<10	<10	<2.5	<2.5	320	<2.5	409.7	---
60B1	11/08/06	CT/8260	<33	<17	<17	19	250	<17	120	<670	<17	<17	3,200	<17	3589	---
60B1	11/12/07	CT/8260	<50	<25	<25	<25	160	<25	64	<1000	<25	<25	3,400	<25	3624	---
60B1	11/11/08	CT/8260	<1.0	4.3	<0.5	14	240	2.8	56	<20	1.4	0.5	3,000	<0.5	3319	---
60B1	11/04/09	CT/8260	<6.3	<3.1	<3.1	<3.1	54	<3.1	<13	<130	<3.1	<3.1	420	<3.1	474	---
60B1	11/04/10	CT/8260	<5.0	<5.0	<5.0	<5.0	100	<5.0	<20	<200	<5.0	<5.0	930	<5.0	1030	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<							µg/L						>
67B1	11/27/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<20	<0.5	<0.5	9.5	<0.5	10.4	---
67B1	11/12/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<20	<0.5	0.5	14	<0.5	15.6	---
67B1	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	14	<0.5	14	---
67B1	11/15/10	CT/8260	<1.0	<0.5	<0.5	0.6	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	13	<0.5	13.6	---
115B1	11/21/06	CT/8260	<63	<31	<31	39	230	<31	140	<1300	<31	<31	7,600	<31	8009	---
115B1	11/08/07	CT/8260	<50	<25	<25	<25	220	<25	49	<1000	<25	<25	4,500	<25	4769	---
115B1	11/18/08	CT/8260	<100	<50	<50	79	500	<50	160	<2000	<50	<50	7,600	<50	8339	---
115B1	11/06/09	CT/8260	<100	<50	<50	60	560	<50	<200	<2000	<50	<50	6,300	<50	6920	---
115B1	11/08/10	CT/8260	<42	<42	<42	52	590	<42	<170	<1700	<42	<42	5,800	<42	6442	---
119B1	11/17/06	CT/8260	<5.0	3.3	<2.5	4.4	93	<2.5	4.5	<100	<2.5	<2.5	750	<2.5	855.2	---
119B1	11/08/07	CT/8260	<13	<6.3	<6.3	<6.3	93	<6.3	<6.3	<250	<6.3	<6.3	640	<6.3	733	---
119B1	11/11/08	CT/8260	<6.3	<3.1	<3.1	3.2	84	<3.1	5.2	<130	<3.1	<3.1	620	<3.1	712.4	---
119B1	11/23/09	CT/8260	<6.3	<3.1	<3.1	<3.1	50	<3.1	<13	<130	<3.1	<3.1	380	<3.1	430	---
119B1 (DUP)	11/23/09	CT/8260	<5.0	<2.5	<2.5	<2.5	71	3.2	<10	<100	<2.5	<2.5	390	<2.5	464.2	---
119B1	11/23/10	CT/8260	<5.0	2.8	<2.5	4.5	59	<2.5	<10	<10	<2.5	<2.5	460	<2.5	526.3	---
147B1	11/21/06	CT/8260	<1.0	<0.5	<0.5	0.5	50	<0.5	<0.5	<20	<0.5	<0.5	8.2	<0.5	58.7	---
147B1	11/07/07	CT/8260	<13	<6.3	<6.3	<6.3	33	<6.3	6.6	<250	<6.3	<6.3	790	<6.3	829.6	---
147B1	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	56	<0.5	<0.5	<20	<0.5	<0.5	16	<0.5	72	---
147B1	11/03/09	CT/8260	<1.0	<0.5	<0.5	<0.5	66	0.6	<2.0	<20	<0.5	<0.5	19	<0.5	85.6	---
147B1	11/15/10	CT/8260	<13	<6.3	<6.3	6.7	120	<6.3	<25	<25	<6.3	<6.3	1,300	<6.3	1426.7	---
RW-3(B1)	11/21/06	CT/8260	<4.0	<2.0	<2.0	4.2	12	<2.0	17	<80	<2.0	8.3	300	<2.0	341.5	---
RW-3(B1)	08/08/07	CT/8260	<3.3	<1.7	<1.7	1.8	10	<1.7	15	<67	<1.7	6.7	270	<1.7	303.5	---
RW-3(B1)	11/16/07	CT/8260	<5.0	<2.5	<2.5	2.5	9.6	<2.5	13	<100	<2.5	5.2	380	<2.5	410.3	---
RW-3(B1)	11/15/08	CT/8260	<2.0	1.2	<1.0	2.9	15	<1.0	21	<40	<1.0	8.3	340	<1.0	388.4	---
RW-3(B1)	11/13/09	CT/8260	<3.3	<1.7	<1.7	2.8	23	<1.7	20	<67	<1.7	10	260	<1.7	315.8	---
RW-3(B1)	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-3(B1)	12/23/10	CT/8260	<4.0	<2.0	<2.0	2.3	17	<2.0	12	<8.0	<2.0	5.5	260	<2.0	296.8	---
RW-4(B1)	11/21/06	CT/8260	<25	<13	<13	<13	190	67	<13	<500	<13	<13	2,000	<13	2257	---
RW-4(B1)	08/08/07	CT/8260	<33	<17	<17	<17	230	110	9.2	<670	<17	<17	2,200	<17	2549.2	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			< µg/L >													
RW-4(B1)	11/27/07	CT/8260	<40	<20	<20	<20	330	<20	<20	<800	<20	<20	2,100	<20	2430	---
RW-4(B1)	11/18/08	CT/8260	<33	<17	<17	<17	840	<17	<17	<670	<17	<17	2,000	<17	2840	---
RW-4(B1)	11/06/09	CT/8260	<1.0	1.6	<0.5	8.4	390	8.8	<2.0	<20	<0.5	<0.5	2,600	1.6	3010.4	---
RW-4(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.94
RW-4(B1)	11/17/10	CT/8260	<20	<10	<10	<10	140	57	<40	<40	<10	<10	1,400	<10	1597	---
RW-5(B1)	11/21/06	CT/8260	<25	<13	<13	13	1,900	170	<13	<500	<13	<13	1,900	<13	3998	---
RW-5(B1)	08/09/07	CT/8260	<33	<17	<17	<17	1,800	160	<67	<670	<17	<17	1,900	<17	3860	---
RW-5(B1)	11/14/07	CT/8260	<40	<20	<20	<20	1,900	180	<20	<800	<20	<20	2,200	<20	4280	---
RW-5(B1)	11/13/08	CT/8260	<14	7.2	<7.1	9.3	1,300	140	<7.1	<290	<7.1	<7.1	1,400	<7.1	2869.5	---
RW-5(B1)	11/04/09	CT/8260	<25	<13	<13	<13	1,200	110	<50	<500	<13	<13	1,500	<13	2823	---
RW-5(B1)	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	1.9
RW-5(B1)	11/17/10	CT/8260	<20	<10	<10	17	1,400	130	<40	<40	<10	<10	1,400	<10	2958	---
RW-7(B1)	11/21/06	CT/8260	<25	<13	<13	17	320	<13	49	<500	<13	<13	4,400	<13	4786	---
RW-7(B1)	08/09/07	CT/8260	<63	<31	<31	<31	310	<31	24	<1300	<31	<31	3,400	<31	3734	---
RW-7(B1)	11/12/07	CT/8260	<71	<36	<36	<36	240	<36	<36	<1400	<36	<36	3,400	<36	3640	---
RW-7(B1)	11/04/08	CT/8260	<50	<25	<25	<25	140	<25	<25	<1000	<25	<25	2,700	<25	2840	---
RW-7(B1)	11/06/09	CT/8260	<33	<17	<17	<17	190	<17	<67	<670	<17	<17	2,800	<17	2990	---
RW-7(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	1.5
RW-7(B1)	11/16/10	CT/8260	<33	<17	<17	20	180	<17	<67	<67	<17	<17	2,800	<17	3000	---
RW-9(B1)R	11/10/06	CT/8260	<50	<25	<25	<25	850	<25	160	<1000	<25	<25	4,300	<25	5310	---
RW-9(B1)R	11/12/07	CT/8260	<63	<31	<31	<31	720	<31	82	<1300	<31	<31	3,400	<31	4202	---
RW-9(B1)R	11/04/08	CT/8260	<40	<20	<20	<20	610	<20	45	<800	<20	<20	3,000	<20	3655	---
RW-9(B1)R	11/16/09	CT/8260	<1.0	6.3	<0.5	26	850	7.7	62	<20	2.3	0.7	2,300	0.9	3255.9	---
RW-9(B1)R	11/16/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	3.4
RW-9(B1)R	11/04/10	CT/8260	<17	<17	<17	<17	780	<17	<67	<670	<17	<17	2,200	<17	2980	---
RW-12(B1)	11/21/06	CT/8260	<20	<10	<10	<10	140	<10	13	<400	<10	<10	940	<10	1093	---
RW-12(B1)	08/09/07	CT/8260	<13	<6.3	<6.3	<6.3	100	7.2	7.2	<250	<6.3	<6.3	780	<6.3	894.4	---
RW-12(B1)	11/16/07	CT/8260	<20	<10	<10	<10	190	<10	<20	<400	<10	<10	1,500	<10	1690	---
RW-12(B1)	11/15/08	CT/8260	<20	<10	<10	<10	330	<10	<10	<400	<10	<10	1,300	<10	1630	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<							µg/L						>
RW-12(B1)	11/06/09	CT/8260	<17	<8.3	<8.3	<8.3	54	<8.3	<33	<330	<8.3	<8.3	1,100	<8.3	1154	---
RW-12(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-12(B1)	11/16/10	CT/8260	<10	<5.0	<5.0	9.1	100	7.5	<20	<20	<5.0	<5.0	640	<5.0	756.6	---
10B2	11/20/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	1.7	<0.5	1.7	---
10B2	11/07/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	0.7	<0.5	0.7	---
10B2	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	1.6	<0.5	1.6	---
10B2	11/18/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	1.7	<0.5	1.7	---
10B2	11/12/10	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	0.6	<0.5	0.6	---
11B2	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/07/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/11/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	0.8	<0.5	0.8	---
11B2	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/15/10	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	ND	---
38B2	11/10/06	CT/8260	<2.0	<1.0	<1.0	<1.0	1.4	<1.0	5.5	<40	<1.0	<1.0	230	<1.0	236.9	---
38B2	11/14/07	CT/8260	<3.3	<1.7	<1.7	<1.7	1.9	<1.7	<1.7	<67	<1.7	<1.7	230	<1.7	231.9	---
38B2	11/13/08	CT/8260	<2.5	<1.3	<1.3	<1.3	1.5	<1.3	1.7	<50	<1.3	<1.3	190	<1.3	193.2	---
38B2	11/18/09	CT/8260	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<40	<1.0	<1.0	170	<1.0	170	---
38B2	11/18/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<1.0
38B2	11/10/10	CT/8260	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<4.0	<40	<1.0	<1.0	200	<1.0	202.3	---
113B2	11/08/06	CT/8260	<7.1	<3.6	<3.6	<3.6	30	<3.6	28	<140	<3.6	<3.6	620	<3.6	678	---
113B2	11/09/07	CT/8260	<25	<13	<13	<13	79	<13	<13	<500	<13	<13	1,300	<13	1379	---
113B2	11/18/08	CT/8260	<33	<17	<17	<17	220	<17	27	<670	<17	<17	2,000	<17	2247	---
113B2	11/16/09	CT/8260	<8.3	<4.2	<4.2	11	330	16	22	<170	<4.2	<4.2	2,700	<4.2	3079	---
113B2	11/15/10	CT/8260	<0.7	<0.7	<0.7	0.9	9.2	<0.7	<2.9	<29	<0.7	<0.7	260	<0.7	270.1	---
118B2	11/17/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
118B2	11/08/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	2	<0.5	2	---
118B2	11/06/08	CT/8260	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	<0.50	0.59	---
118B2	11/12/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	0.8	<0.5	0.8	---
118B2	11/11/10	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	0.5	<0.5	0.5	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<						µg/L							>
148B2	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	0.5	<0.5	0.5	---
148B2	11/13/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
148B2	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
148B2	11/15/10	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	ND	---
RW-3(B2)	11/21/06	CT/8260	<25	<13	<13	<13	420	21	<13	<500	<13	<13	30	1,100	1571	---
RW-3(B2)	11/16/07	CT/8260	<14	<7.1	<7.1	15	1,100	21	<7.1	<290	<7.1	<7.1	300	400	1836	---
RW-3(B2)	11/15/08	CT/8260	<20	<10	<10	12	1,300	20	<10	<400	<10	<10	50	500	1882	---
RW-3(B2)	11/13/09	CT/8260	<1.0	<0.5	<0.5	23	140	20	<2.0	<20	<0.5	<0.5	2,100	3.1	2286.1	---
RW-3(B2)	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-3(B2)	12/23/10	CT/8260	<25	<13	<13	14	69	14	<50	<50	<13	<13	1,800	<13	1897	---
RW-4(B2)	11/21/06	CT/8260	<170	<83	<83	<83	9,000	91	<83	<3300	<83	<83	14,000	<83	23091	---
RW-4(B2)	11/14/07	CT/8260	<200	<100	<100	<100	6,800	<100	<100	<4000	<100	<100	11,000	<100	17800	---
RW-4(B2)	11/07/08	CT/8260	<170	<83	<83	<83	6,900	<83	<83	<3300	<83	<83	10,000	<83	16900	---
RW-4(B2)	11/24/09	CT/8260	<140	<71	<71	<71	7,200	86	<290	<2900	<71	<71	10,000	<71	17286	---
RW-4(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-4(B2)	11/17/10	CT/8260	<130	<63	<63	<63	6,300	78	<250	<250	<63	<63	10,000	<63	16378	---
RW-5(B2)	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	12	12	---
RW-5(B2)	11/20/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/15/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/24/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-5(B2)	12/27/10	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	ND	---
RW-7(B2)	05/24/06	CT/8260	<1.0	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<20	<0.5	<0.5	0.6	<0.5	4	---
RW-7(B2)	11/21/06	CT/8260	<1.0	1.3	<0.5	2.2	8.2	<0.5	1.8	<20	<0.5	<0.5	9.4	2.4	25.3	---
RW-7(B2)	11/16/07	CT/8260	<1.0	<0.5	<0.5	<0.5	9.7	<0.5	1.2	<20	<0.5	<0.5	12	<0.5	22.9	---
RW-7(B2)	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-7(B2)	11/24/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	3.8	<0.5	3.8	---
RW-7(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-7(B2)	12/27/10	CT/8260	<1.0	<0.5	<0.5	<0.5	3	<0.5	<2.0	<2.0	<0.5	<0.5	9.5	<0.5	12.5	---

Table 13. Groundwater Sampling Results Summary, January 2006 through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	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	Total VOCs	1,4-Dioxane
			<						µg/L							>
RW-7(B2) (DUP)	12/27/10	CT/8260	<1.0	<0.5	<0.5	<0.5	2.1	<0.5	<2.0	<2.0	<0.5	<0.5	9.8	<0.5	11.9	---
RW-9(B2)	11/10/06	CT/8260	<8.3	<4.2	<4.2	8.2	270	5.7	32	<170	<4.2	<4.2	790	<4.2	1105.9	---
RW-9(B2)	11/12/07	CT/8260	<8.3	<4.2	<4.2	7.5	280	6.1	13	<170	<4.2	<4.2	610	<4.2	916.6	---
RW-9(B2)	11/04/08	CT/8260	<5.0	<2.5	<2.5	6	230	5.1	9	<100	<2.5	<2.5	660	<2.5	910.1	---
RW-9(B2)	11/16/09	CT/8260	<2.0	<1.0	<1.0	6.1	200	13	9.6	<40	<1.0	<1.0	600	<1.0	828.7	---
RW-9(B2)	11/16/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.94
RW-9(B2)	11/22/10	CT/8260	<7.1	<3.6	<3.6	8	180	5.4	<14	<14	<3.6	<3.6	650	<3.6	843.4	---

Abbreviations:

--- = sample not analyzed for particular analyte
< # = analyte not detected above the reported detection limit of "#" ug/L
8260 = USEPA Method 8260B for halogenated VOCs, for Method 8010 list of analytes
8270 = USEPA Method 8270C-SIM for SVOCs
CT = Curtis and Tompkins, Berkeley, California
DCA = Dichloroethane
DCE = Dichloroethene
DUP = duplicate sample
ND = no analytes detected above the laboratory detection limit
PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene
µg/L = micrograms per liter
VOCs = volatile organic compounds

Table 14. Capture Zone Calculations and Analysis, March 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Extraction Well:		RW-27A	RW-5A	RW-7A	RW-4(B1)	RW-5(B1)	RW-7(B1)	RW-9(B1)	RW-4(B2)	RW-9(B2)	38B2
b		15	15	15	25	25	25	25	35	35	35
i		0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.004	0.004	0.004
K		40	40	40	40	40	40	40	5	5	5
T		600	600	600	1000	1000	1000	1000	175	175	175
w		575	575	575	400	575	500	500	500	600	250
estimated well loss (ft):	$s_w = CQ^2$	0.002	0.002	0.007	0.000	0.003	0.001	0.008	0.000	0.003	0.009
extraction rate (gpm):		2.87	2.83	5.91	0.34	3.60	2.03	6.36	0.93	4.07	6.60
stagnation point (ft):	$X_0 = -Q / 2\pi Ti$	-37	-36	-75	-3	-37	-21	-65	-41	-178	-289
capture zone width (at extraction well; ft):	$Y_{well} = \pm Q / 4Ti$	58	57	119	5	58	33	102	64	280	454
capture zone width (maximum; ft):	$Y_{max} = \pm Q / 2Ti$	115	114	237	11	116	65	204	128	560	908

LINE OF EVIDENCE	CAPTURE?	COMMENTS
Water Levels *Potentiometric surface maps*	*Adequate*	*Some A-zone wells that were shut-down in 2007 were turned back on during 2010. These wells were off during the March capture snapshot, however, the November capture achieved target capture area. Potentiometric surface maps indicate complete capture in B1/A2 and B2-zones.*
Calculations *Capture zone widths*	*Adequate*	*The calculated stagnations points are smaller than target captures. These calculated values are balanced by the observed water levels and chemical concentration data. Preference is given to measured water level data and the resulting potentiometric surface to assess capture.*
Concentration Trends *Downgradient monitoring wells*	*Adequate*	

Notes and Abbreviations:

b = aquifer or saturated thickness (ft)

C = turbulent well loss coefficient from Walton, 1962 (sec^2/ft^5); the following are coefficients and their corresponding well condition: 5 = properly designed and developed, 5 to 10 = mild deterioration, 10 to 40 = severe deterioration (40 used in the calculation)

factor = accounts for other contributions to the extraction well (a factor of 1.5 was used in the calculation)

feet = ft

i = regional hydraulic gradient feet per foot (ft/ft)

K = hydraulic conductivity (ft/day). Value is based on the calibrated MEW groundwater flow model (Geosyntec et al., 2008b)

Q = extraction flow rate (gallons per minute; gpm)

s_w = drawdown due to well loss

T = transmissivity (ft^2/day)

TCE = Trichloroethene

w = plume width (ft) (the modeled capture zone width is used for all wells outside the slurry wall and the slurry wall width for those inside)

X_0 = stagnation point (ft)

Y_{max} = maximum capture zone width (ft)

Y_{well} = capture zone width in-line w/ extraction well (ft)

Assumptions:

- homogeneous, isotropic, confined aquifer of infinite extent
- fully penetrating extraction well
- negligible vertical gradient
- no net recharge (or net recharge is accounted for in regional hydraulic gradient)
- no other sources of water introduced into aquifer due to extraction
- steady-state flow
- uniform regional horizontal hydraulic gradient
- uniform aquifer thickness

Table 15. Capture Zone Calculations and Analysis, November 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Extraction Well:		RW-27A	RW-5A	RW-7A	RW-9A	RW-18A	RW-4(B1)	RW-5(B1)	RW-7(B1)	RW-9(B1)	RW-12(B1)	RW-4(B2)	RW-9(B2)	38B2
b		15	15	15	15	15	25	25	25	25	25	35	35	35
i		0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004
K		40	40	40	40	40	40	40	40	40	40	5	5	5
T		600	600	600	600	600	1000	1000	1000	1000	1000	175	175	175
w		575	575	575	200	575	400	575	500	500	200	500	600	250
estimated well loss (ft):	$s_w = CQ^2$	0.003	0.001	0.022	0.005	0.004	0.005	0.004	0.001	0.008	0.006	0.000	0.004	0.009
extraction rate (gpm):		3.61	2.48	10.63	4.88	4.36	5.11	4.56	2.01	6.21	5.59	1.07	4.48	6.65
stagnation point (ft):	$X_0 = -Q / 2\pi Ti$	-46	-32	-136	-62	-56	-52	-47	-21	-63	-57	-47	-196	-291
capture zone width (at extraction well; ft):	$Y_{well} = \pm Q / 4Ti$	72	50	213	98	87	82	73	32	100	90	74	308	457
capture zone width (maximum; ft):	$Y_{max} = \pm Q / 2Ti$	145	99	426	196	175	146	146	64	199	179	147	616	914

LINE OF EVIDENCE	CAPTURE?	COMMENTS
Water Levels *Potentiometric surface maps*	*Adequate*	*Potentiometric surface maps indicate complete capture in A/A1, B1/A2 and B2-zones.*
Calculations *Capture zone widths*	*Adequate*	*The calculated stagnation points are smaller than target captures. These calculated values are balanced by the observed water levels and chemical concentration data. Preference is given to measured water level data and the resulting potentiometric surface to assess capture.*
Concentration Trends *Downgradient monitoring wells*	*Adequate*	

Notes and Abbreviations:

b = aquifer or saturated thickness (ft)

C = turbulent well loss coefficient from Walton, 1962 (sec^2/ft^5); the following are coefficients and their corresponding well condition: 5 = properly designed and developed, 5 to 10 = mild deterioration, 10 to 40 = severe deterioration (40 used in the calculation)

factor = accounts for other contributions to the extraction well (a factor of 1.5 was used in the calculation)

feet = ft

i = regional hydraulic gradient feet per foot (ft/ft)

K = hydraulic conductivity (ft/day). Value is based on the calibrated MEW groundwater flow model (Geosyntec et al., 2008b)

Q = extraction flow rate (gallons per minute; gpm)

s_w = drawdown due to well loss

T = transmissivity (ft^2/day)

TCE = Trichloroethene

w = plume width (ft) (the modeled capture zone width is used for all wells outside the slurry wall and the slurry wall width for those inside)

X_0 = stagnation point (ft)

Y_{max} = maximum capture zone width (ft)

Y_{well} = capture zone width in-line w/extraction well (ft)

Assumptions:

- fully penetrating extraction well
- homogeneous, isotropic, confined aquifer of infinite extent
- negligible vertical gradient
- no net recharge (or net recharge is accounted for in regional hydraulic gradient)
- no other sources of water introduced into aquifer due to extraction
- steady-state flow
- uniform regional horizontal hydraulic gradient
- uniform aquifer thickness

Weiss Associates

APPENDIX A

2010 ANNUAL REPORT REMEDY PERFORMANCE CHECKLIST

2010 Annual Report Remedy Performance Checklist

I. GENERAL SITE INFORMATION

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

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

Checklist completion date: **June 15, 2011**

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 A2/B1 aquitard.**
2. **Three treatment systems as detailed below:**

System 1:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Thirteen source control recovery wells (Eight wells operated during 2010).**
- **One regional recovery well (One well operated during 2010).**

System 3:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Nine source control recovery wells (Seven wells operated during 2010).**
- **Three regional recovery wells (Three wells operated during 2010).**

System 19:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Fifteen source control recovery wells (Thirteen operated during 2010).**
- **Seven regional recovery wells (Two operated during 2010).**

II. CONTACTS

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

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

2010 Annual Report Remedy Performance Checklist

III. O&M COSTS (OPTIONAL)

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

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

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

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

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

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

Documents and records are available at treatment systems and/or on-site office located at 350 E. Middlefield Road Mountain View, CA.

V. INSTITUTIONAL CONTROLS (as applicable)

List institutional controls called for (and from what enforcement document):

Signs and other security measures are in place at extraction and treatment points.

Status of their implementation:

Posted signage (Health & Safety and emergency contact information).

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:

2010 Annual Report Remedy Performance Checklist

VI. SIGNIFICANT SITE EVENTS
Check all Significant Site events Since the Last Checklist that Affects or May Affect Remedy Performance

☐ Community Issues
☐ Vandalism
☐ Maintenance Issues
■ Other:

Please elaborate on Significant Site Events:

Record of Decision Amendment for the Vapor Intrusion Pathway August 16, 2010

VII. REDEVELOPMENT

Is redevelopment on property planned? ■ Yes ☐ No

If yes, what is planned? Please describe below.

Is redevelopment plan complete Yes, date:_____; ■ No ? ☐ Not Applicable

Redevelopment proposal in progress? ■ Yes, elaborate below
☐ No; If no, is a proposal anticipated? ☐ Yes ☐ No

☐ Is the redevelopment proposal compatible with remedy performance? ■ Yes ☐ No

Elaborate on redevelopment proposal and how it affects remedy performance:

644 National Avenue property (former Fairchild Building 18) was purchased by Carr America National Avenue LLC in 2008; redevelopment plans remained on hold during 2010.

369 and 441 North Whisman Road (former Bldgs. 13 and 19 and 23), owned by Keenan, Lovewell Ventures, is developing a proposal for additional buildings on the site.

The existing treatment systems and their components (conveyance piping, extraction wells, and monitoring wells) will be maintained or modified as appropriate to accommodate redevelopment.

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

Groundwater Quality Data

List the types of data that are available:	What is the source report?
Potentiometric surface maps, hydrographs	**2010 Annual Fairchild Building Reports (Weiss, 2011) and**
Capture zone maps, isoconcentration maps	**2010 Annual Regional Report (Geosyntec, 2011)**

■ 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	**NPDES Self-Monitoring Reports**
System Influent & Effluent water samples	**2010 Annual Fairchild Building Reports**
VOC mass and groundwater removal graphs, VOC concentration trends	

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

2010 Annual Report Remedy Performance Checklist

Discharge Data

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

■ The system is in compliance with discharge permits.

Slurry Wall Data

List the types of data that are available:	What is the source report?
Water level elevations in select well pairs	**2010 Annual Reports**
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. In 2010, pumping was started in some wells that had been off since 2007. Slurry wall gradients have generally maintained trends consistent before and after reduced groundwater extraction rates.

The chemical concentration data and potentiometric surface contours from 2010 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)

Walk-throughs/Surveys: Yes

Additional building sampling was performed during 2010.

Summary of Results: The sampling results indicated no short-term or long-term potential health risk concerns from the vapor intrusion pathway under current conditions (Haley and Aldrich 2010).

Reference:

Haley and Aldrich, 2010. *Air Sampling Activities Conducted Fall 2009 at the Middlefield-Ellis-Whisman Vapor Intrusion Study Area, Mountain View, California, March 19.*

Problems Encountered: None

Recommendations/Next Steps: None

Schedule: All work is coordinated with the USEPA.

X. REMEDY PERFORMANCE ASSESSMENT

A. Groundwater Remedies

2010 Annual Report Remedy Performance Checklist

What are the remedial goals for groundwater? ■ Plume containment (prevent plume migration); ■ Plume restoration (attain ROD-specific cleanup levels in aquifer); ☐ Other goals, please explain:

The groundwater remedy is hydraulic remediation by extraction and treatment. The Treatment System is reliable and consistent in its operation and mass removal ability, with greater than 95% up-time. The capture zones from the extraction wells provide sufficient overlap to achieve hydraulic control over the plume based on flow net evaluation and converging lines of evidence, including stable lateral extent of TCE exceeding 5 µg/L. Remediation is also demonstrated because concentrations within the TCE plume have continued to decrease in all zones. Groundwater with TCE concentrations exceeding 5 µg/L does not discharge to surface water.

During First Quarter 2010, several extraction wells were tested and new pumps were installed to support optimization of the groundwater pumping regime at Fairchild Treatment Systems 1, 3, and 19 under the jurisdiction of USEPA Region 9. Optimization of extraction rates began during the week of March 29, and continued during the Second Quarter of 2010. Optimization activities are documented in the 2010 Annual Progress Reports to USEPA for the former Fairchild Buildings 1-4, and 19.

Have you done a trend analysis? ■ Yes ☐ No; If Yes, what does it show?

(Is it inconclusive due to inadequate data? Are the concentrations increasing or decreasing?) Explain and provide source document reference

Concentrations within the core of the TCE plume have continued to decrease in all zones, while the lateral extent of TCE exceeding 5 µg/L has been stable. See Annual Reports for trends in monitoring wells (Weiss 2010).

While the lateral extent of TCE concentrations exceeding 5 µg/L has not grown since 1992 and concentrations within TCE plume have generally decreased by an order of magnitude or more, the perimeter extent of TCE concentrations has largely stabilized. Optimization based on 2008 optimization report was implemented with EPA modifications in 2010.

If plume containment is a remedial goal, check all that apply:

■ Plume migration is under control (explain basis below)
☐ Plume migration is not under control (explain basis below)
☐ Insufficient data to determine plume stability (explain below)
(Include attachments that substantiate your answers, e.g., reference plume, trend analysis, and capture zone maps in source document)

Elaborate on basis for determining that plume containment goal is being met or not being met**:**

Plume containment goal is met, slurry walls provide physical containment of sources on 369 N. Whisman Road, 401 National Avenue, 515/545 N. Whisman Road and 313 Fairchild Drive.

Groundwater elevation and chemical monitoring results from 2010 demonstrate that the Fairchild extraction wells continue to achieve adequate horizontal and vertical capture based on converging lines of evidence, including graphical flow net analysis and chemical concentration trends. VOC concentrations in groundwater continue to remain well below historical maximums, and generally show long-term decreasing 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. The groundwater extraction, treatment, and containment systems are functioning as intended and meet the Remedial Action Objectives for the Site.

2010 Annual Report Remedy Performance Checklist

B. Vertical Migration

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

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

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

Source document reference: 2010 Annual Fairchild Building Reports (Weiss, 2010)

2010 Annual Regional Report (Geosyntec, 2010)

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 2010 Fairchild Building and RGRP Annual Progress Reports indicate containment of target capture areas.

XI. PROJECTIONS

Administrative Issues
Dates of next monitoring and sampling events for next annual reporting period: Fall 2010

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

Remedy Projections for **the upcoming year (2011)**

■ 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: Elaborate below. Target date:

Elaborate on Remedy Projections:

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:

2010 Annual Report Remedy Performance Checklist

☐ Change in groundwater extraction system. ☐ Expansion or ☐ minimization (i.e., number of extraction wells and/or pumping rate)? Target date:
☐ Modification on groundwater treatment? Elaborate below. Target date:
☐ Change in discharge location. Target date:
■ Other modification(s) anticipated: **Groundwater Feasibility Study** Elaborate below. Target date: **2012**

Elaborate on Remedy Projections:

The EPA is developing a groundwater site-wide focused feasibility study.

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: **Groundwater Feasibility Study** Elaborate below. Target date: 2012

Elaborate on Remedy Projections: Site-Wide Focused Groundwater Feasibility Study being conducted by EPA may affect long term remedy.

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.

Fairchild extraction well optimization occurred during 2010.

XII. ADMINISTRATIVE ISSUES
Check all that apply:

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

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

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

XII. RECOMMENDATIONS

Weiss Associates

APPENDIX B

LABORATORY ANALYTICAL REPORTS

(THIS APPENDIX IS BEING SUBMITTED ON CD TO THE USEPA ONLY AND IS AVAILABLE UPON REQUEST)

Weiss Associates

APPENDIX C

QA/QC REPORT, SUMMARY TABLES, AND CRITERIA

2010 QA/QC SUMMARY

The analytical laboratory data and accompanying quality assurance/quality control (QA/QC) information used in the *2010 Annual Reports* for former Fairchild Buildings 1, 2, 3, 4, 9, 13, 18, 19, 20, 20A, and 23 in the Middlefield-Ellis Whisman (MEW) Area were reviewed for precision, accuracy, reproducibility, and completeness in accordance with the approved MEW 1991 *Quality Assurance Plan*.[4] In addition, this data quality review is based on November 2009 *Standard Operating Procedures* (SOPs) for data verification and validation and on validation procedures for metals, volatile organic chemicals (VOCs), and semivolatile organic chemicals. The SOPs are based on the 1991 MEW "Unified" *Quality Assurance Project Plan* (QAPP), but functionally adhere to the most recent United States Environmental Protection Agency (USEPA) data validation guidelines.

This data quality review summarizes the Level 2 and 10% Level 4 data quality review for samples collected by Weiss Associates during the 2010 annual sampling event in accordance with the MEW QAPP.

The analytical results for each sampling point were compared with the historical record to confirm they are representative. To assess the reliability of field sampling procedures and materials, the following field QA/QC samples were collected or prepared for each sampling event by MEW parties:

- Field duplicates - Collected for five wells associated with the Site: 157A, RW-18A, RW-21A, RW-25A, and RW-7(B2). The relative percent differences between the duplicates and the original samples were less than 10% and are well within the acceptance criteria of 35%. For more details, see Table G-3 of the *RGRP Annual Report* (Geosyntec, 2011).
- Rinseate sample/equipment blank - Samples consisting of reagent water collected from a final rinse of sampling equipment after the decontamination procedure has been performed. The purpose of rinseate samples is to determine whether the sampling equipment is causing cross-contamination of samples. Following equipment decontamination, deionized/organic-free water will be used as a final rinse and collected in appropriate bottles. Rinseate samples were specified at a frequency of 5% of the field samples collected. In 2010, all rinseate sample/equipment blank samples had VOC concentrations below the detection limit.
- Field blank - Samples consisting of source water used for decontamination of equipment. Field blanks will be collected at a frequency of 1 per source or lot of water being used for rinsing and submitted to the laboratory for all required analyses. Field blanks are specified at a frequency of 5% of the field samples collected. In 2010, all field blank samples had VOC concentrations below the detection limit.

[4] 1991, *Quality Assurance Project Plan, Middlefield-Ellis-Whisman Site, Mountain View, California*, prepared by Canonie Environmental, Rev. 1.0, August 16, 1991.

- Trip blank - Samples consisting of a "clean," volatile organic analysis (VOA) vial filled with deionized/organic-free water and preserved. These vials are supplied by the laboratory to the field Site and returned to the laboratory for storage and analysis along with the field samples as may be required in the task planning documents. Trip blanks were submitted to the contract laboratory with each shipment (cooler) of environmental samples for VOC analyses. Trip blanks were analyzed for all VOC analyses specified for samples in the corresponding cooler. The trip blank data demonstrate that the samples were not exposed to contamination during storage and transport to the laboratory. Trip blanks were submitted for VOC analysis; therefore, the containers did not contain head space. Trip blanks are typically required for VOC sampling of groundwater; surface water; storm water; and rinseate. In 2010, all trip blank samples had VOC concentrations below the detection limit.

For the 2010 annual groundwater sampling event, all sample results collected for former Fairchild Buildings were verified for completeness by completion of a Level 2 data review summary. Custody seals were used for each sample location as specified in the 1991 MEW QAPP.

The following QA/QC parameters were used to assess the laboratory analytic data via a Level 2 data review:

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

Ten percent of all sample delivery groups underwent a stringent Level 4 data validation as required by the MEW QAPP. The samples validated via Level 4 data validation were placed on chain(s) of custody separate from those for the Level 2 data deliverables. Level 4 validation procedures vary by method. In addition to the verification check list provided above, the Level 4 review of organic laboratory data checks the following:

- Ion abundance;
- Minimum number of initial calibration standards analyzed;
- Relative response factors in initial and continuing calibrations;
- Percent relative standard deviations in initial calibrations;
- Percent differences in continuing calibrations;
- Internal standard retention times;

- Internal standard area counts;
- Analytical sequence carryover;
- Dilutions performed appropriately;
- Calibration blank contamination; and
- Data package completeness for all raw data, including chromatograms and bench sheets, for calibration standards, quality control data, and samples.

The Level 4 review of inorganic (metals) data checks for the following:

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

Technical staff assigned qualifiers to data that were found outside control limits in the MEW QAPP. Data qualifiers, or flags, communicate data issues to end users and decision makers and are defined in the USEPA *Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review.*

A total of 233 samples were submitted to Curtis and Tompkins in Berkeley, California, a state-certified analytical laboratory for specified analyses, including VOCs, semi-VOCs, Bis(2-ethylhexyl) phthalate, metals, and 1,4-dioxane analysis. Two samples were analyzed for acute toxicity using USEPA-821-R-02-012 and turbidity using USEPA Method 180.1 by Block Environmental Services, Inc., another state-certified laboratory. In addition to the monthly treatment system samples, 96 total groundwater samples were collected from the former Fairchild buildings Area, including System 1, 3, and 19 monitoring and extraction wells as a part of MEW annual groundwater sampling event. The groundwater samples were analyzed by Curtis and Tompkins for halogenated VOCs using USEPA Method 8260B for the 8010 MS Parameters. Additional wells listed on the 2010 sampling schedule (Table 2 of report) are part of either other facility-specific sampling or part of the RGRP sampling program but are located in the vicinity of Buildings 1-4.

All samples were collected, stored, transported, and managed according to USEPA protocols. Sample temperature and holding times were correctly observed. Three samples collected from the Buildings 1-4 Site contained headspace greater than 6 mm in all three VOAs. However, the relative percent difference between 2009 and 2010 sample results was less than 35%. Therefore, the data was deemed representative and were not qualified.

No significant analytical issues were noted. The data are usable for their intended purposes. Table C-1 summarizes the sampling QA/QC, and Table C-2 summarizes samples for the 2010 annual groundwater sampling event at former Fairchild Buildings 1-4.

Table C-1. Summary of Sampling QA/QC for January through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Who performed sampling (Firm name/address/contact/phone):	Weiss Associates 350 East Middlefield Road, Mountain View, CA 94043 Tess Byler (650) 968-7000
Chain of Custody forms completed for all samples?	YES
Field parameters stabilized prior to taking sample?	YES[1]
Headspace in sample containers < 6 mm (applicable to VOCs only)?	NO[2]
Samples preserved according to analytical method?	YES
Required field QA/QC samples taken?	YES

Explain any "NO" answers.

1. Not applicable for groundwater treatment system samples. Field parameter stabilization is not part of the standard sampling protocol for the groundwater treatment system samples. All field parameters are assumed stable when grab samples are collected from a running treatment system.

2. Headspace greater than 6 mm was present in three samples collected at the Buildings 1-4 Site. However, the relative percent difference between 2009 and 2010 sample results was less than 35%. Therefore, the data were deemed representative, and were not qualified.

Table C-2. Summary of Analytical QA/QC for January through December 2010, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Who performed analysis (Lab name/address/contact/phone):	Curtis and Tompkins 2323 Fifth Street Berkeley, CA 94710 Micah Smith (510) 204-2223 Block Environmental Services, Inc. 2451 Estand Way Pleasant Hill, CA 94523 Nanette Bradbury (925) 682-7200
Analytical methods (by method number and chemical category):	120 samples (including 20 travel blanks and 23 duplicates) analyzed by USEPA 8260B – Halogenated Volatile Organic Compounds (8010 MS Parameters)
Groundwater treatment system samples:	60 samples (including 14 duplicates) analyzed by USEPA 8270C-SIM – 1,4-Dioxane 2 samples analyzed by USEPA-821-R-02-012 – Acute Toxicity of Effluents to Freshwater and Marine Organisms 2 samples analyzed by USEPA 180.1 – Turbidity 9 samples analyzed by USEPA 200.8 – Selenium
Groundwater well samples:	63 samples (including 8 travel blanks, 5 field blanks, 4 duplicates, and 1 rinseate blanks) analyzed by USEPA 8260B – Halogenated Volatile Organic Compounds (8010 MS Parameters) 9 samples analyzed by USEPA 300.0 – Nitrate and Sulfate 9 samples analyzed by USEPA 200.7 – Ferrous Iron (Fe^{II}) 8 samples analyzed by USEPA 300.0 – Chloride 8 samples analyzed by USEPA 200.7 – Ferric Iron (Fe^{III}) and Dissolved Manganese (Mn^{II}) 8 samples analyzed by SM 4500 S2-D – Sulfide 8 samples analyzed by RSK-175M – Methane, Ethene, and Carbon Dioxide 8 samples analyzed by SM 5310 D – Total Organic Carbon 8 samples analyzed by EPA 8260B – Benzene, Toluene, Ethylbenzene, Xylenes 8 samples analyzed by SM 2320B – Alkalinity 8 samples analyzed by Gene-Trac – Dhc/vcrA

	8 samples analyzed by GC-MS – Compound-Specific Isotope Analysis
Are the labs state-certified for the above-noted analytical methods?	YES
Analyses performed according to standard methods?	YES
Sample holding times met?	YES
Analytical results reported for all values above MDL?	YES
QA/QC analyses run consistent with analytical methods?	YES
QA/QC results meet all acceptance criteria?	YES[1,2]
QA/QC results and acceptance criteria on file?	YES

Explain any "NO" answers.

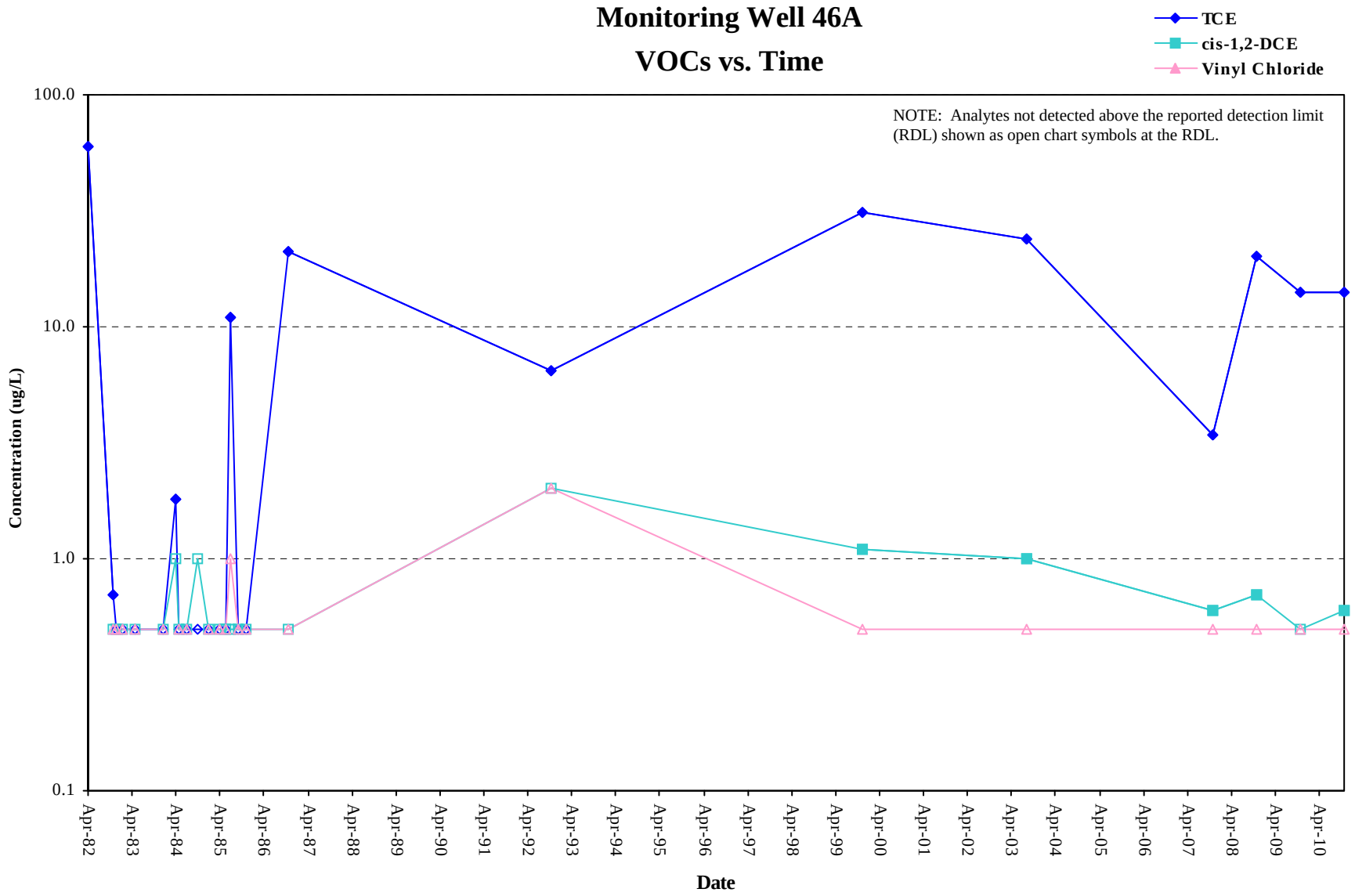
1. The analytic reports and chain-of-custody forms are located in Appendix B.
2. Analytical issues for treatment systems samples collected during 2010 are reported in the 2010 Quarterly NPDES reports for Treatment Systems 1 and 3.

APPENDIX D

SELECTED VOCS VERSUS TIME GRAPHS

Weiss Associates

Monitoring Well 46A
VOCs vs. Time



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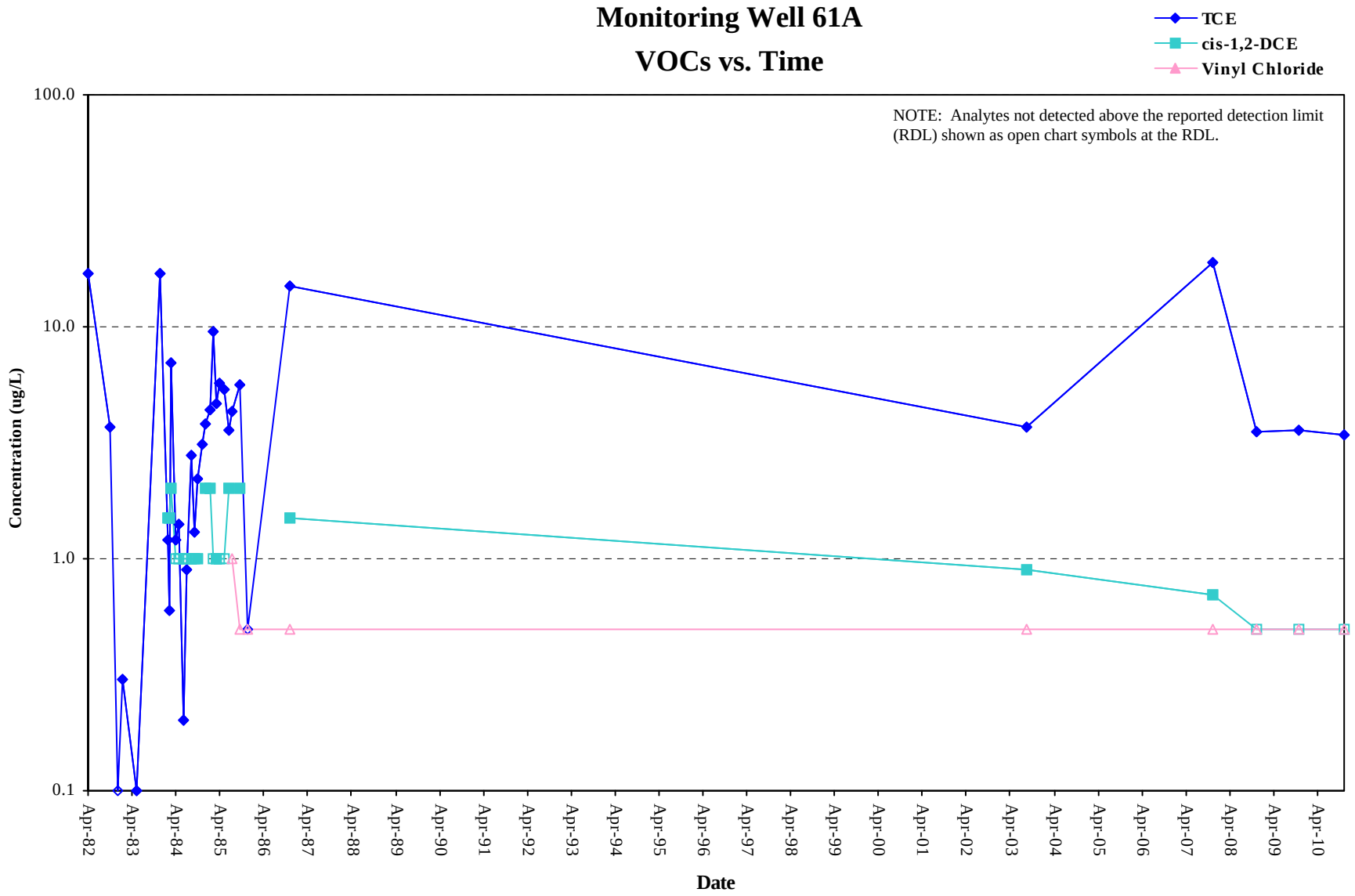
Weiss Associates

Monitoring Well 61A
VOCs vs. Time



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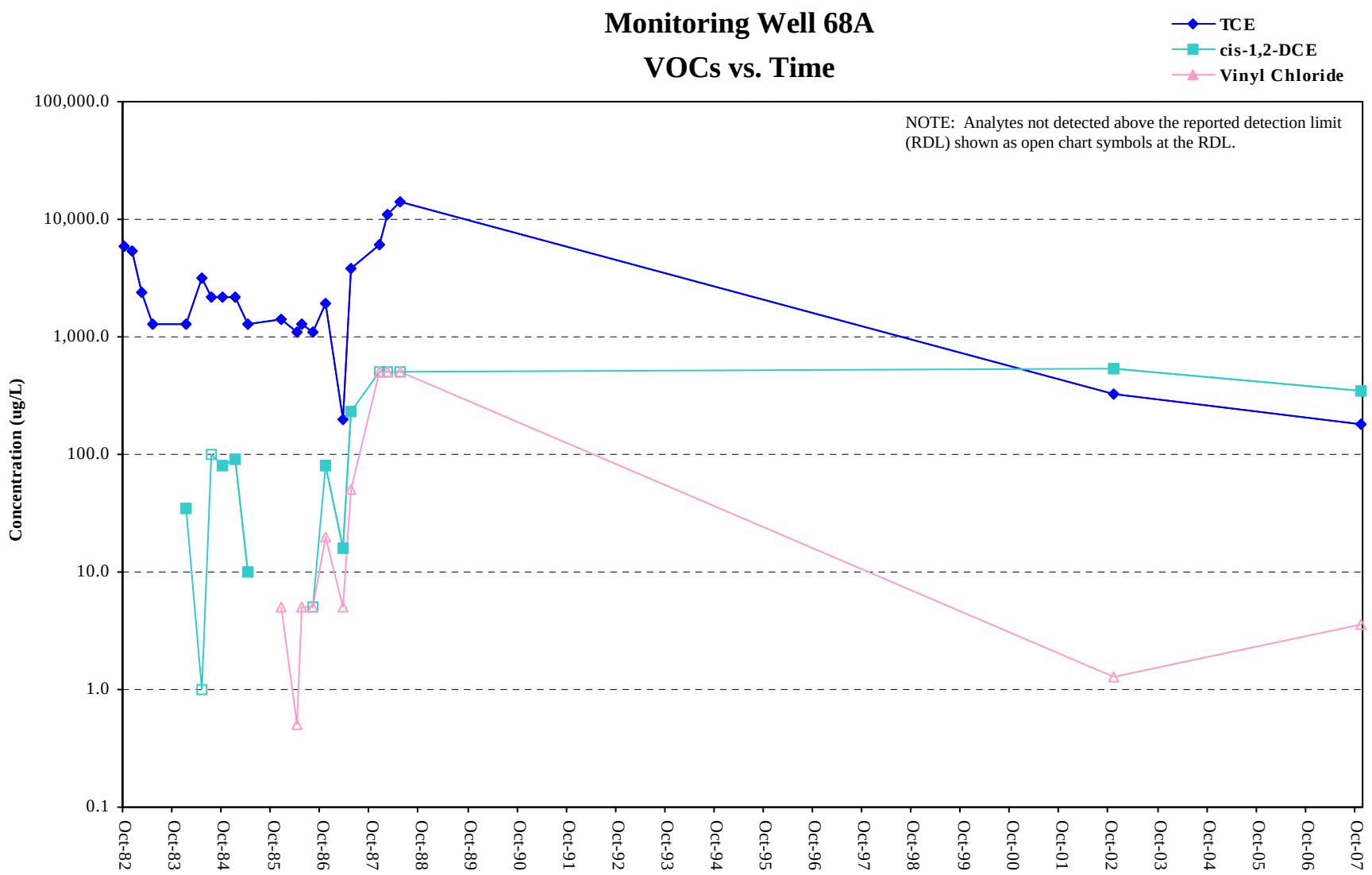
Weiss Associates

Monitoring Well 68A
VOCs vs. Time



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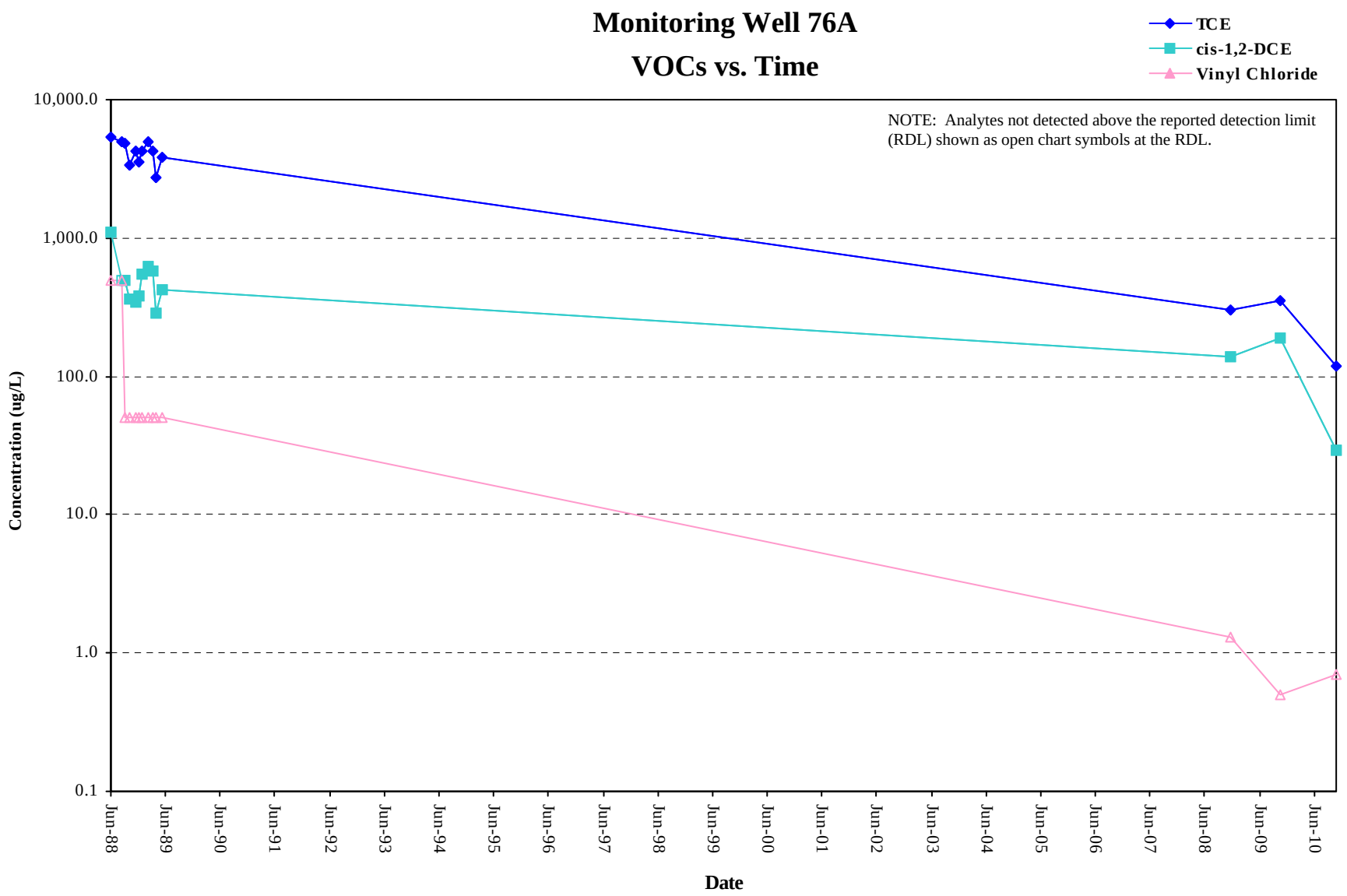
Weiss Associates

Monitoring Well 76A
VOCs vs. Time



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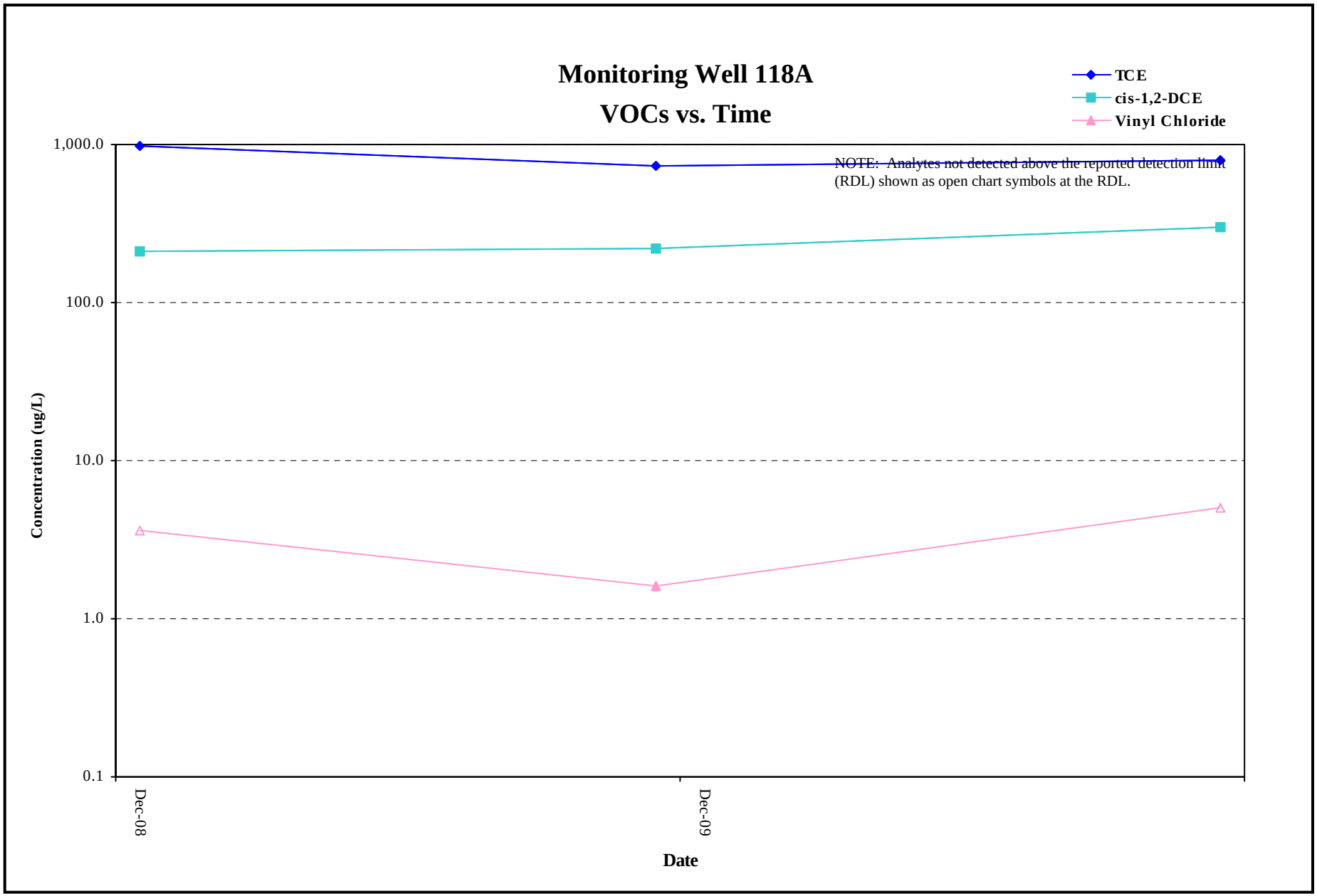
Weiss Associates



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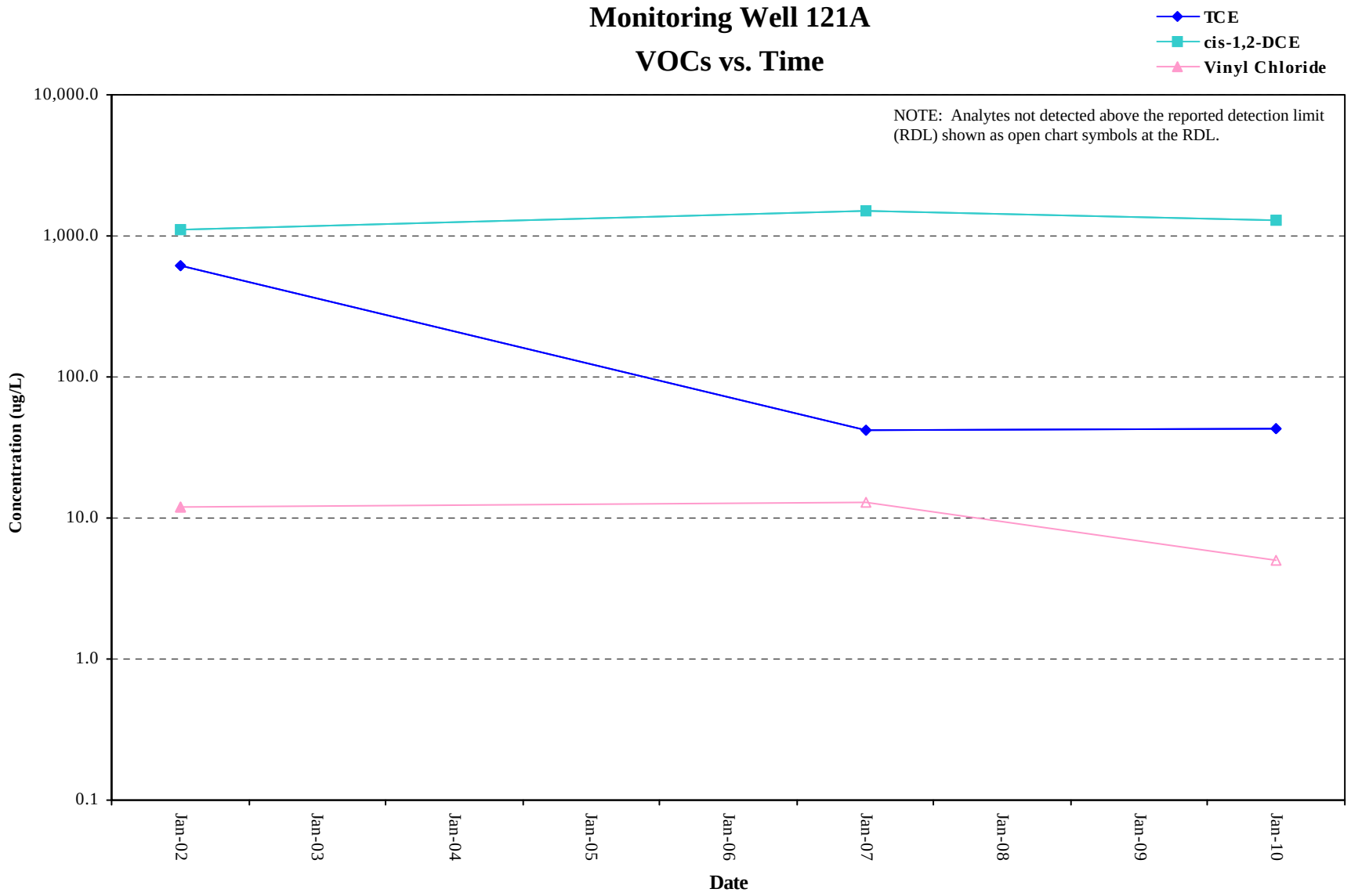
Weiss Associates

Monitoring Well 121A
VOCs vs. Time



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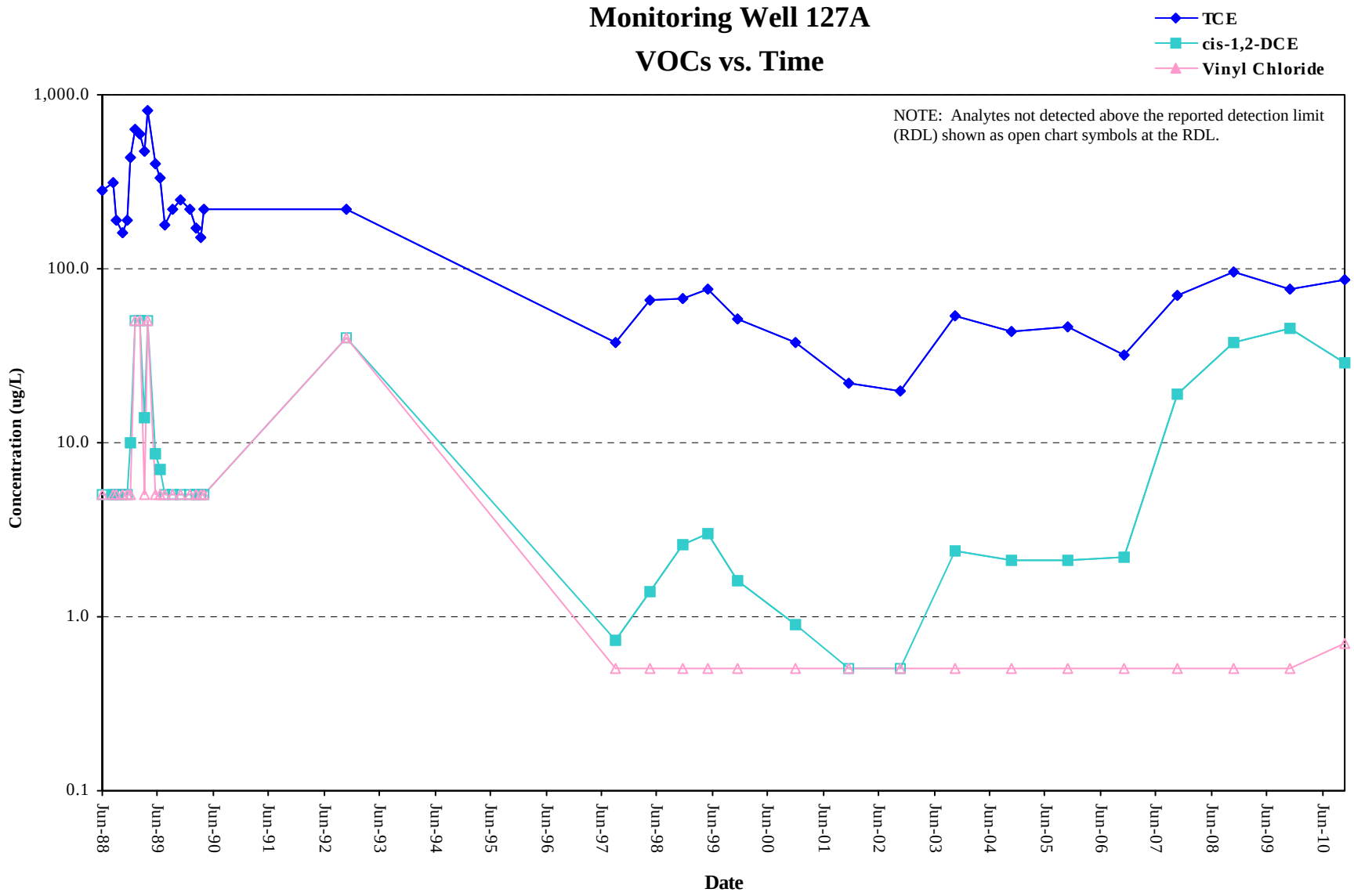
Weiss Associates

Monitoring Well 127A
VOCs vs. Time



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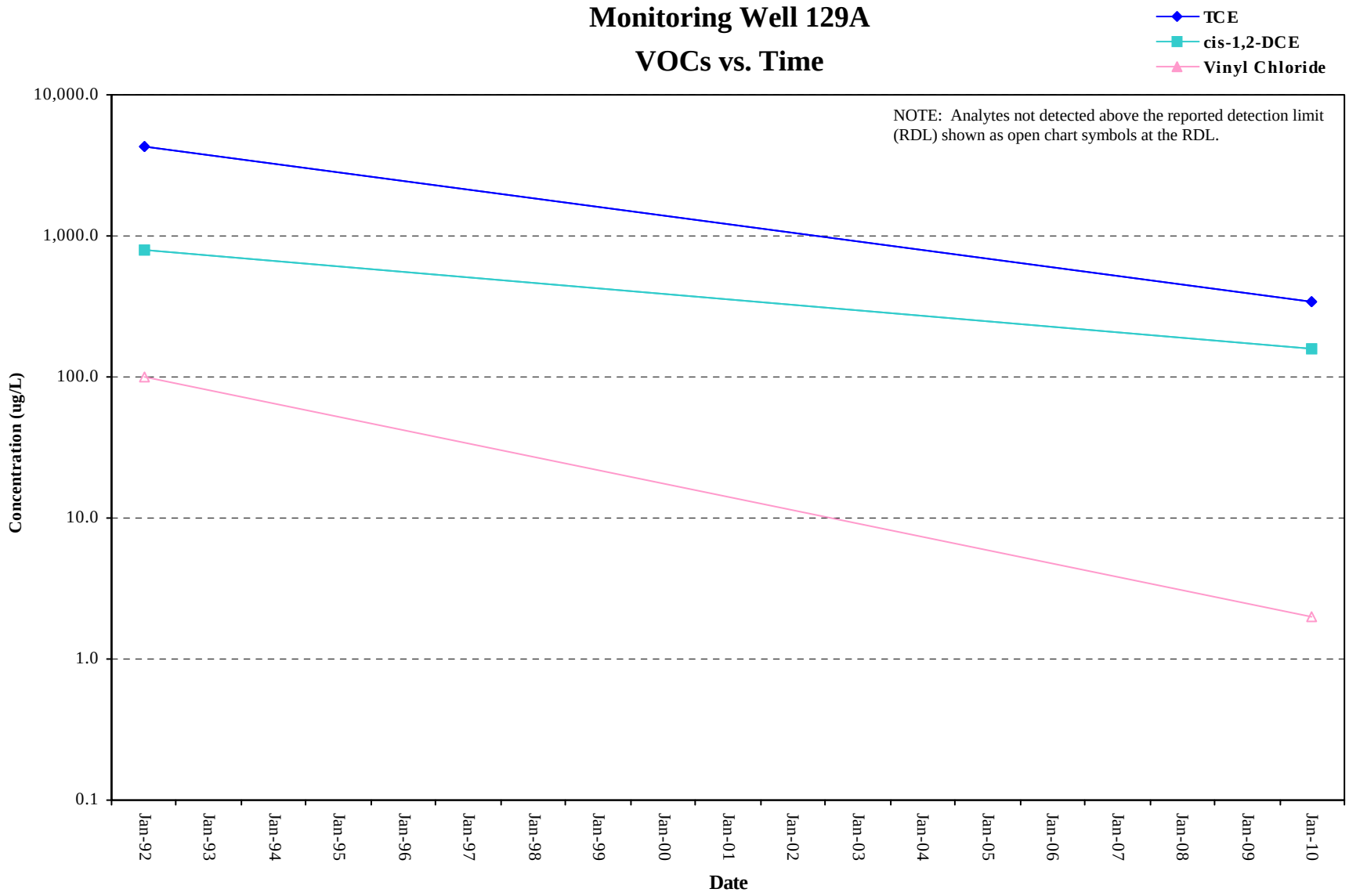
Weiss Associates

Monitoring Well 129A
VOCs vs. Time



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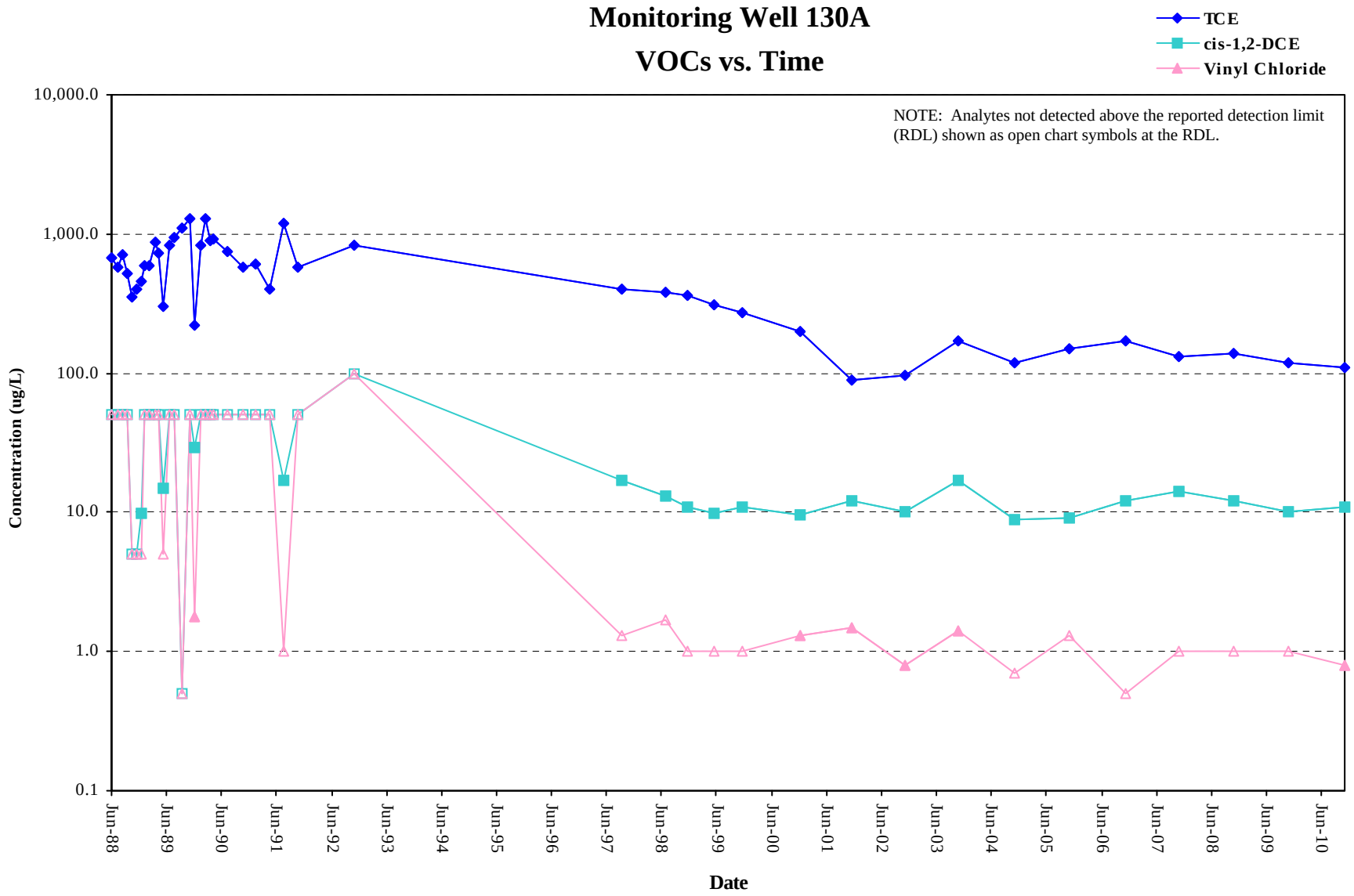
Weiss Associates

Monitoring Well 130A
VOCs vs. Time



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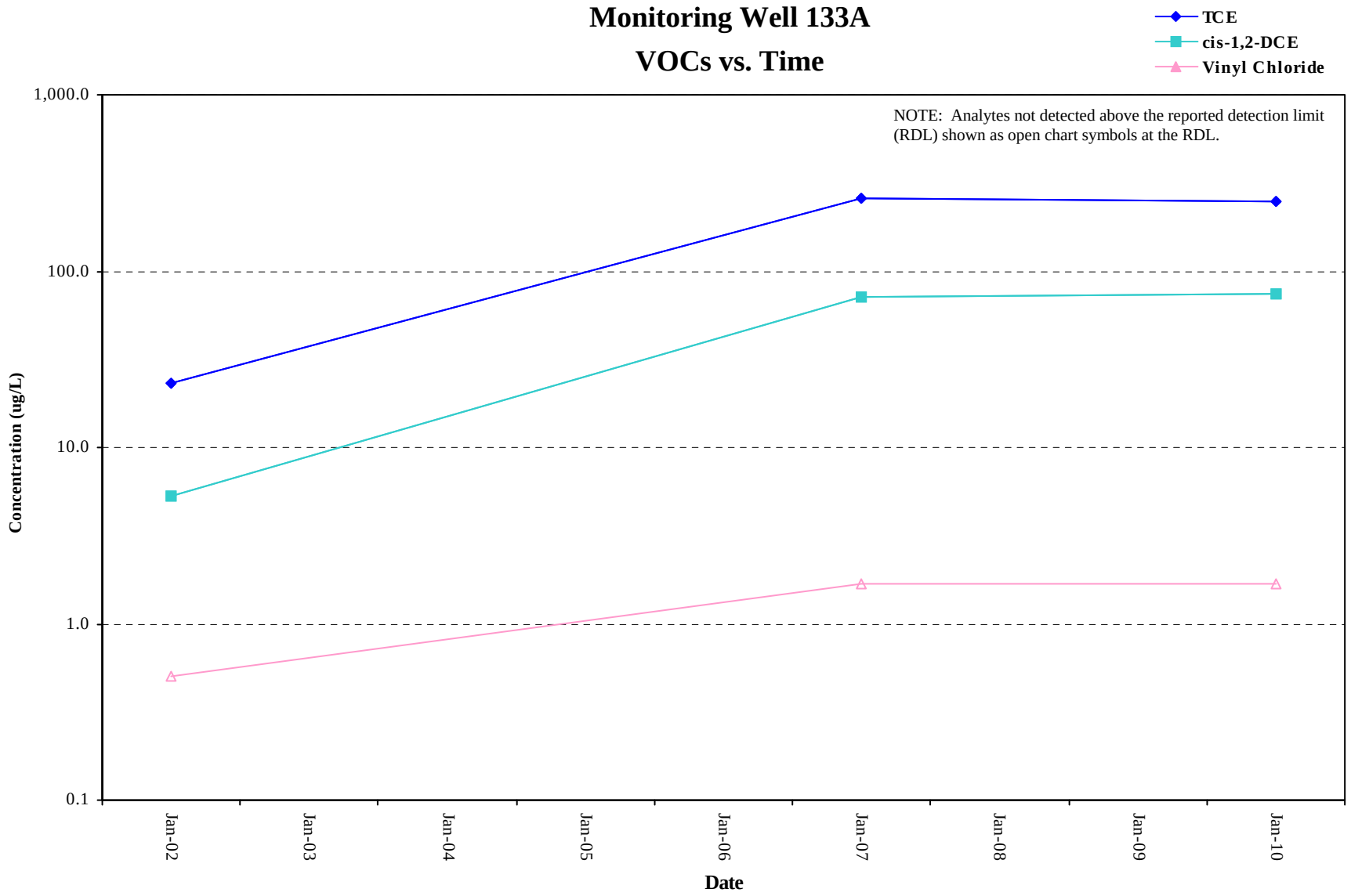
Weiss Associates

Monitoring Well 133A
VOCs vs. Time



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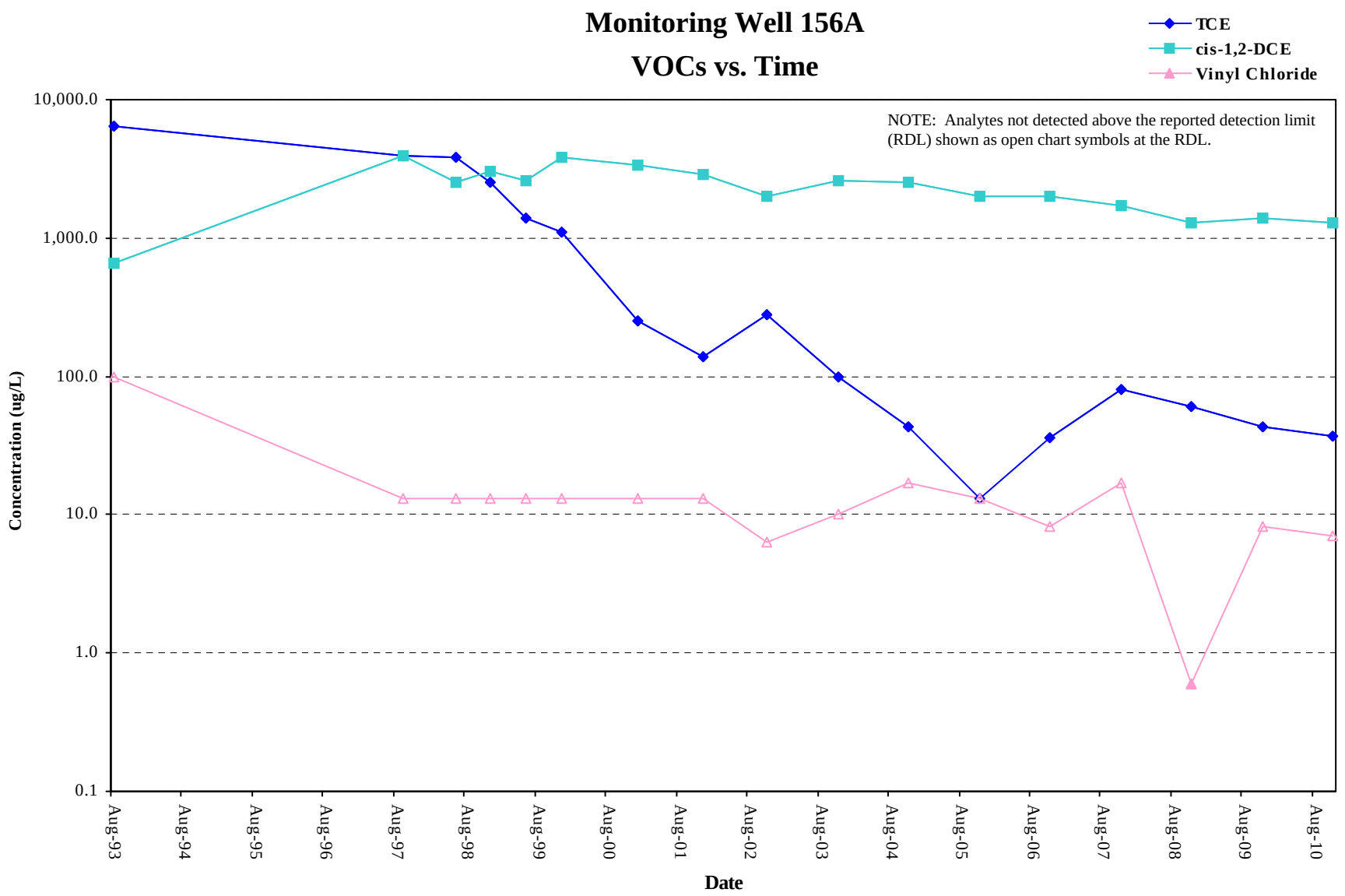
Weiss Associates

Monitoring Well 156A
VOCs vs. Time



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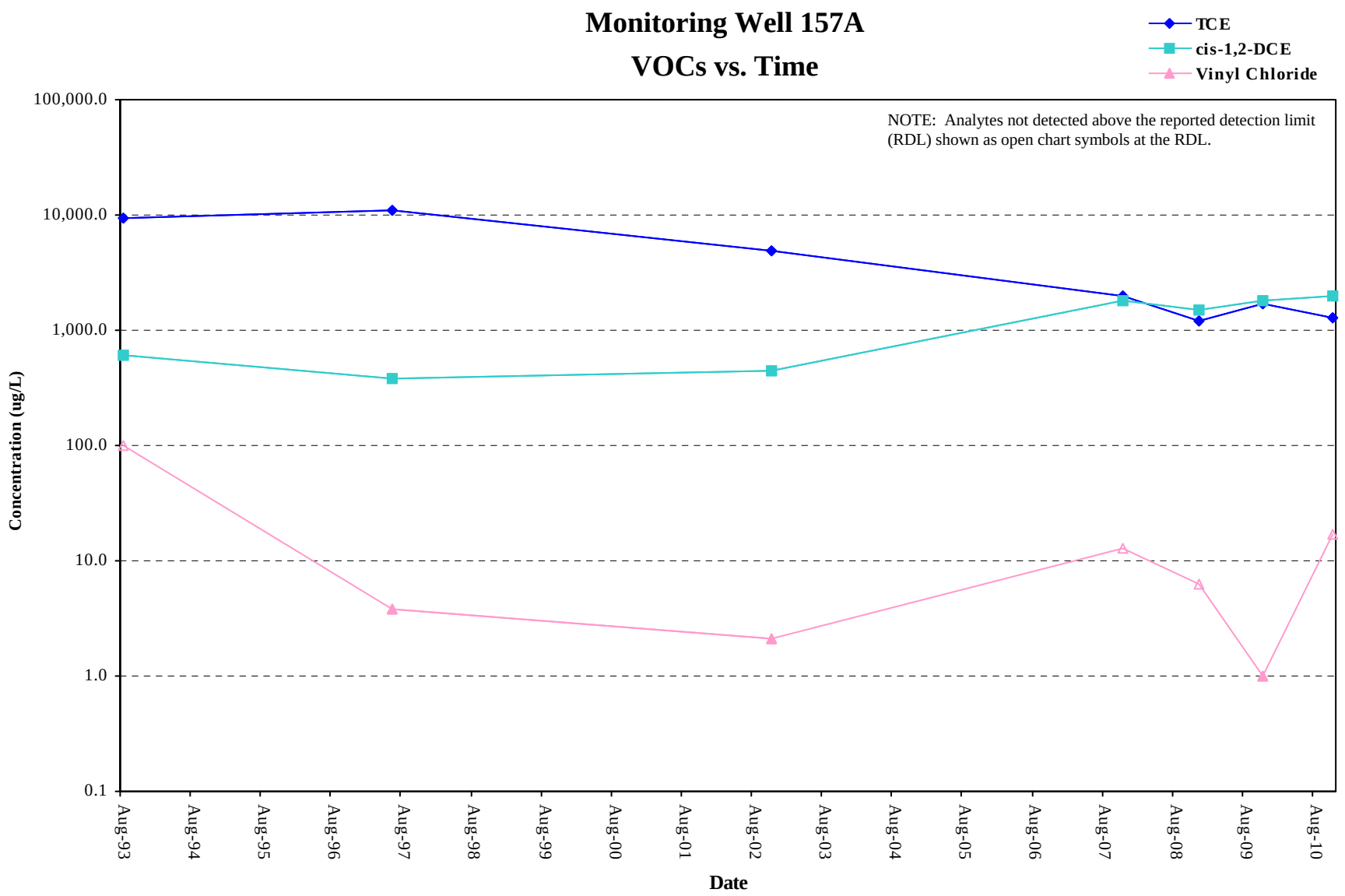
Weiss Associates

Monitoring Well 157A
VOCs vs. Time



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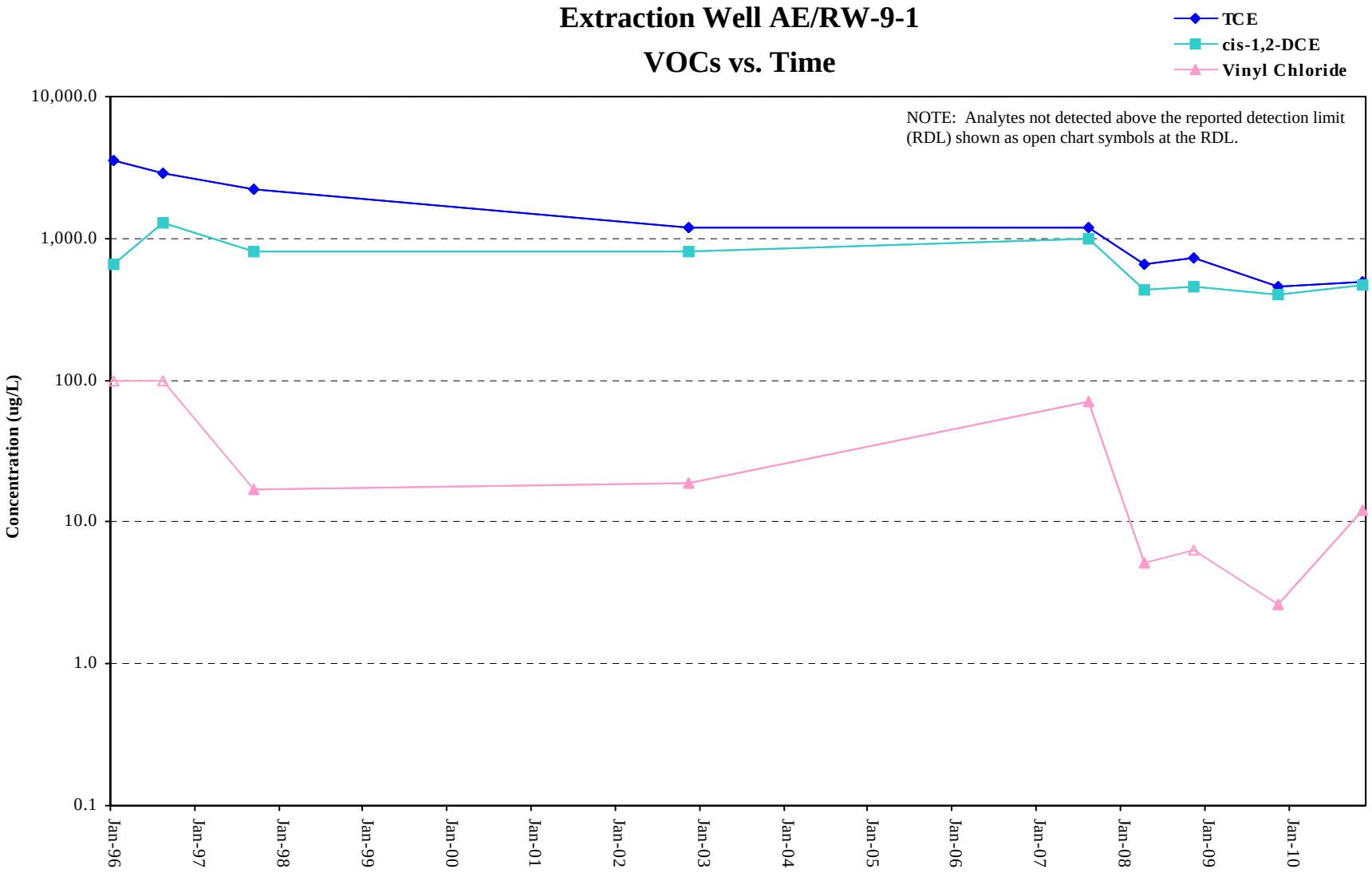
Weiss Associates

Extraction Well AE/RW-9-1
VOCs vs. Time



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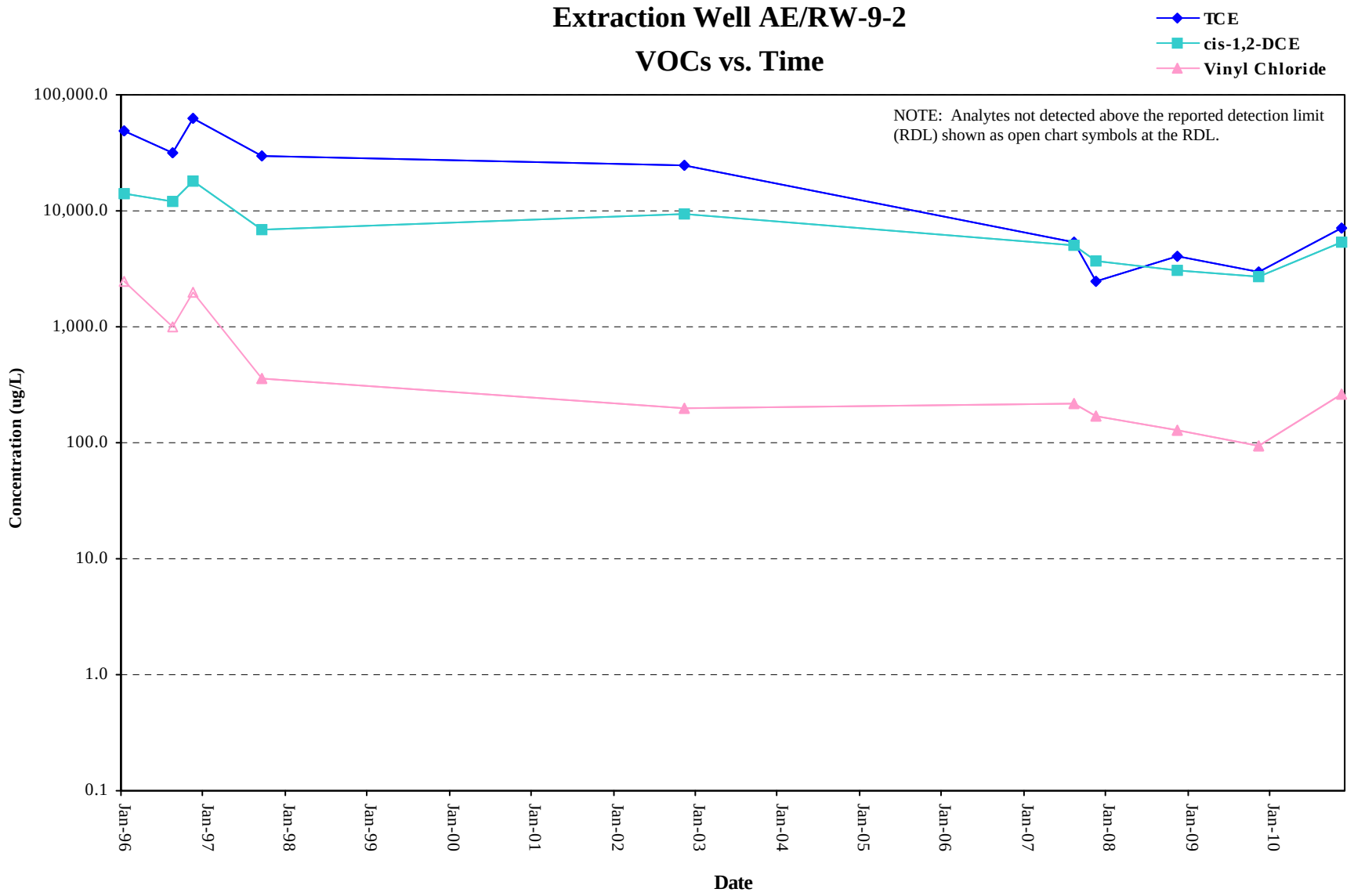
Weiss Associates

Extraction Well AE/RW-9-2
VOCs vs. Time



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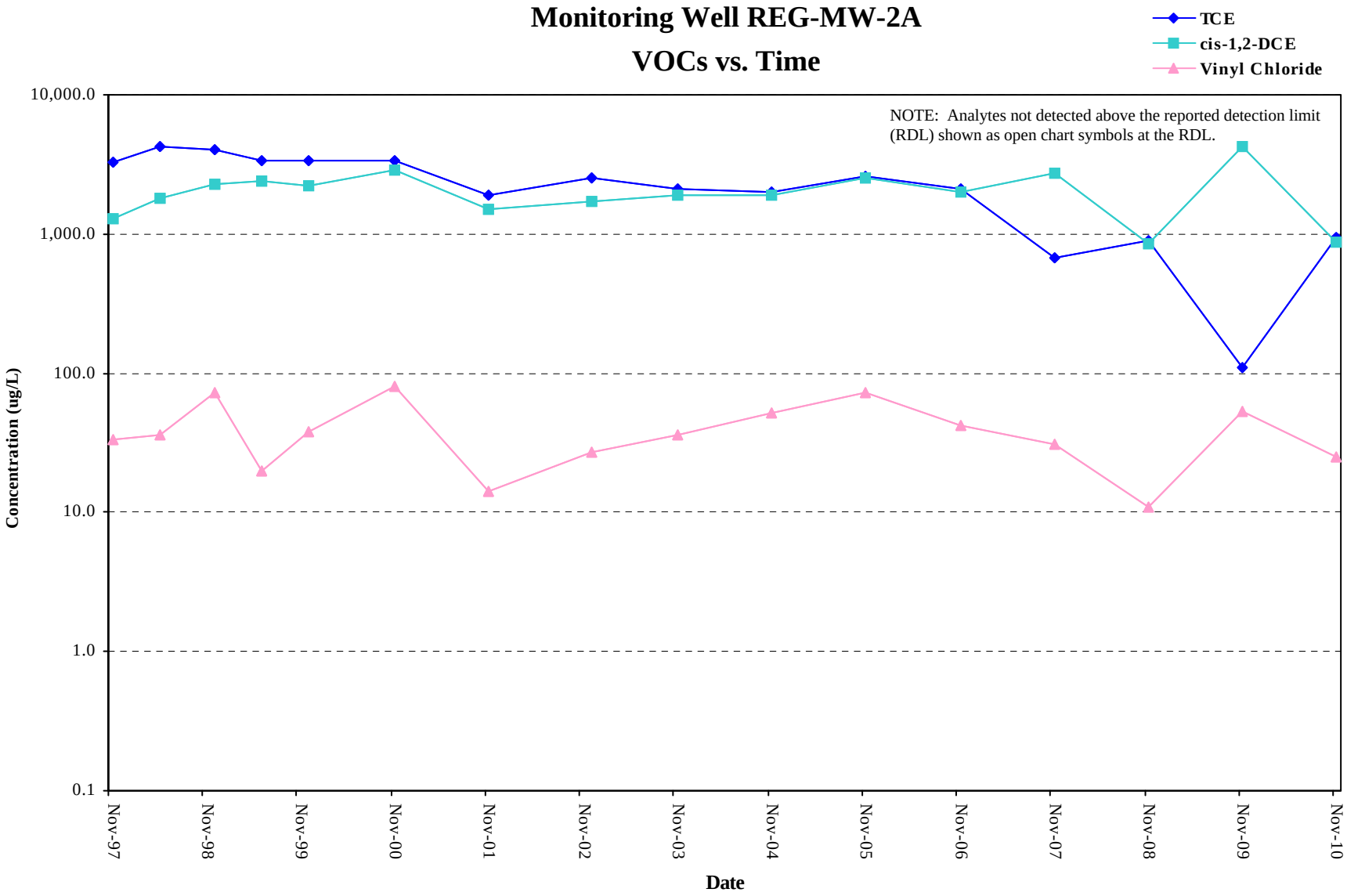
Weiss Associates

Monitoring Well REG-MW-2A
VOCs vs. Time



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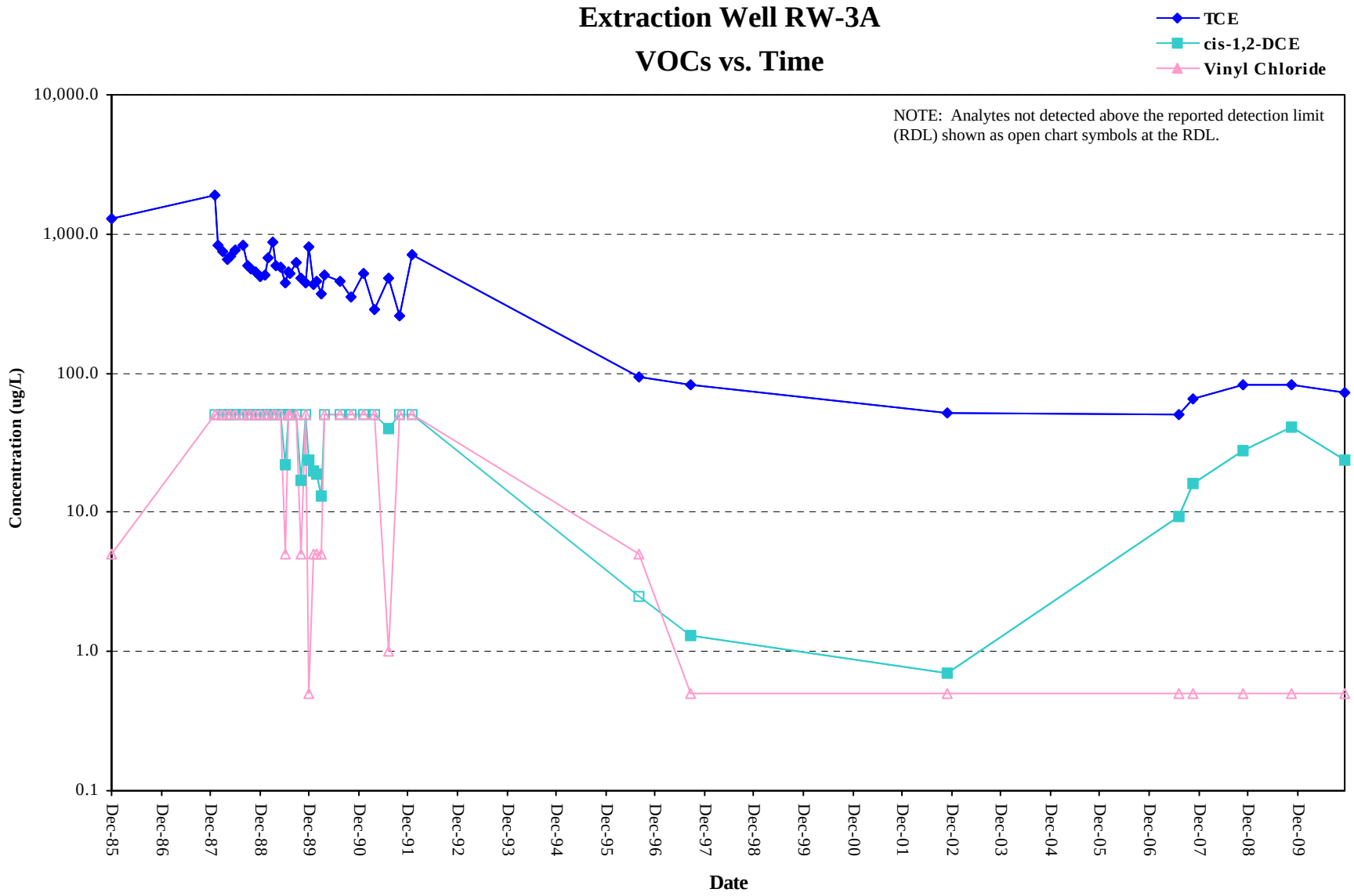
Weiss Associates

Extraction Well RW-3A
VOCs vs. Time



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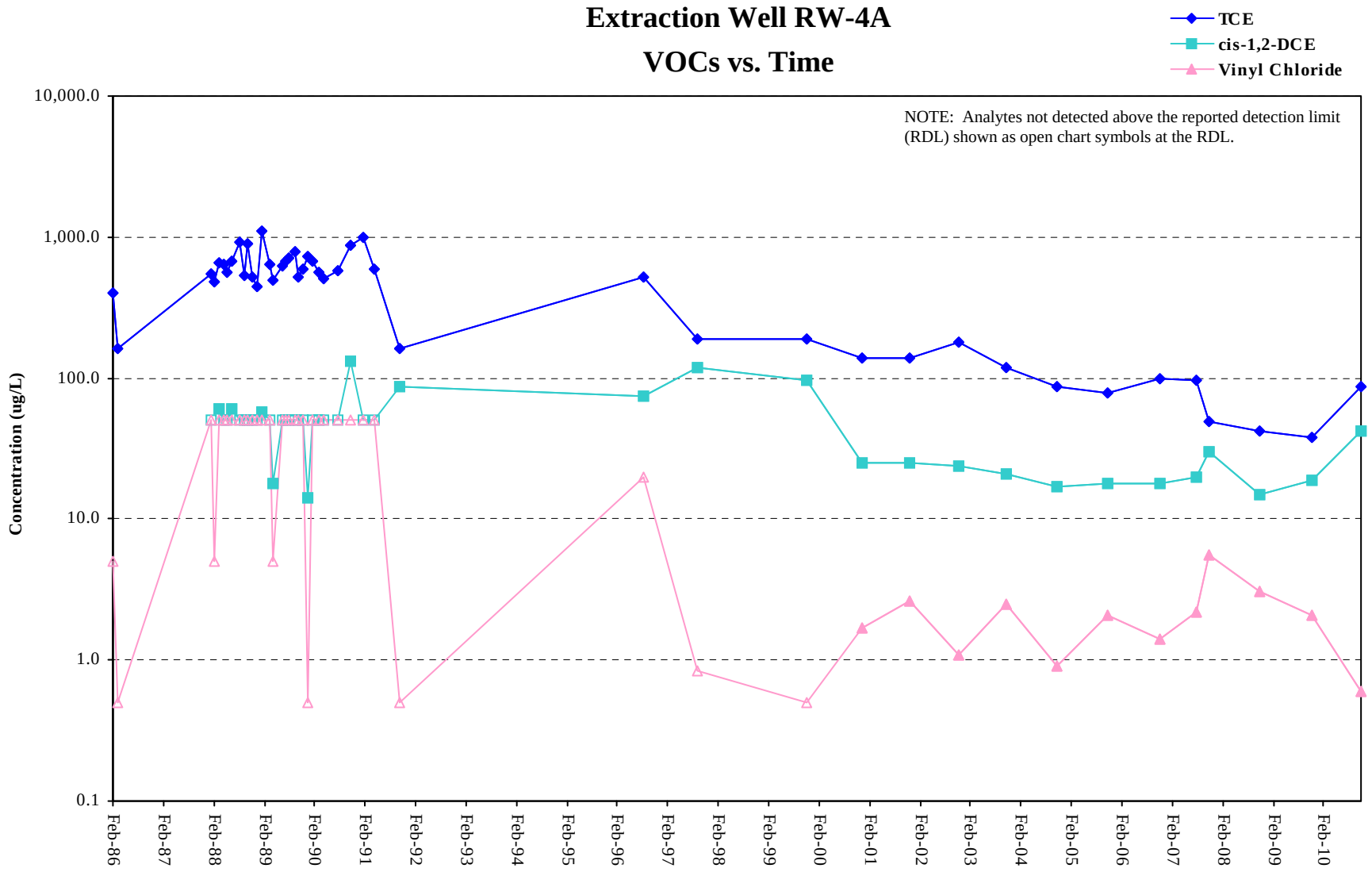
Weiss Associates

Extraction Well RW-4A
VOCs vs. Time



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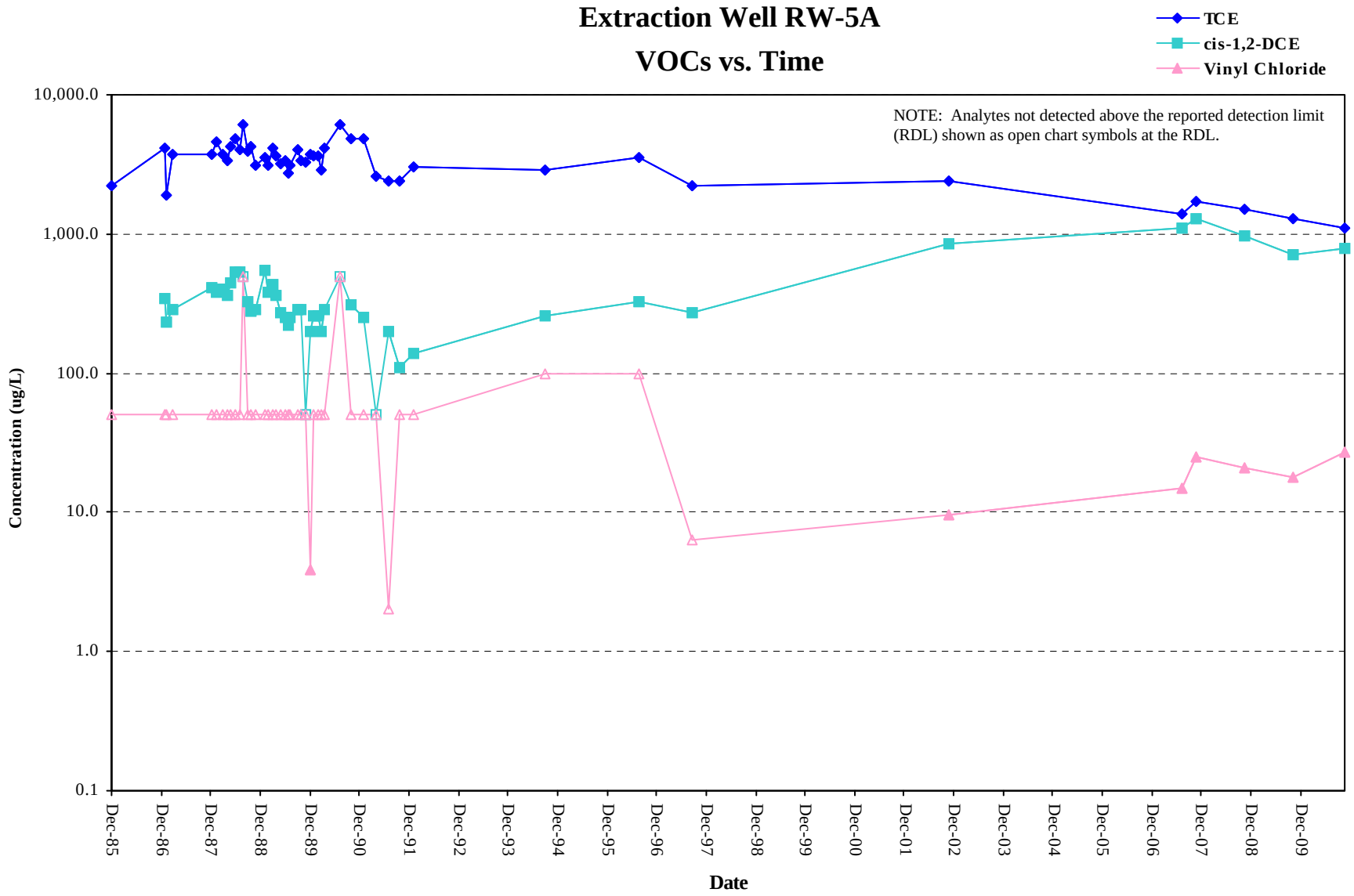
Extraction Well RW-5A
VOCs vs. Time



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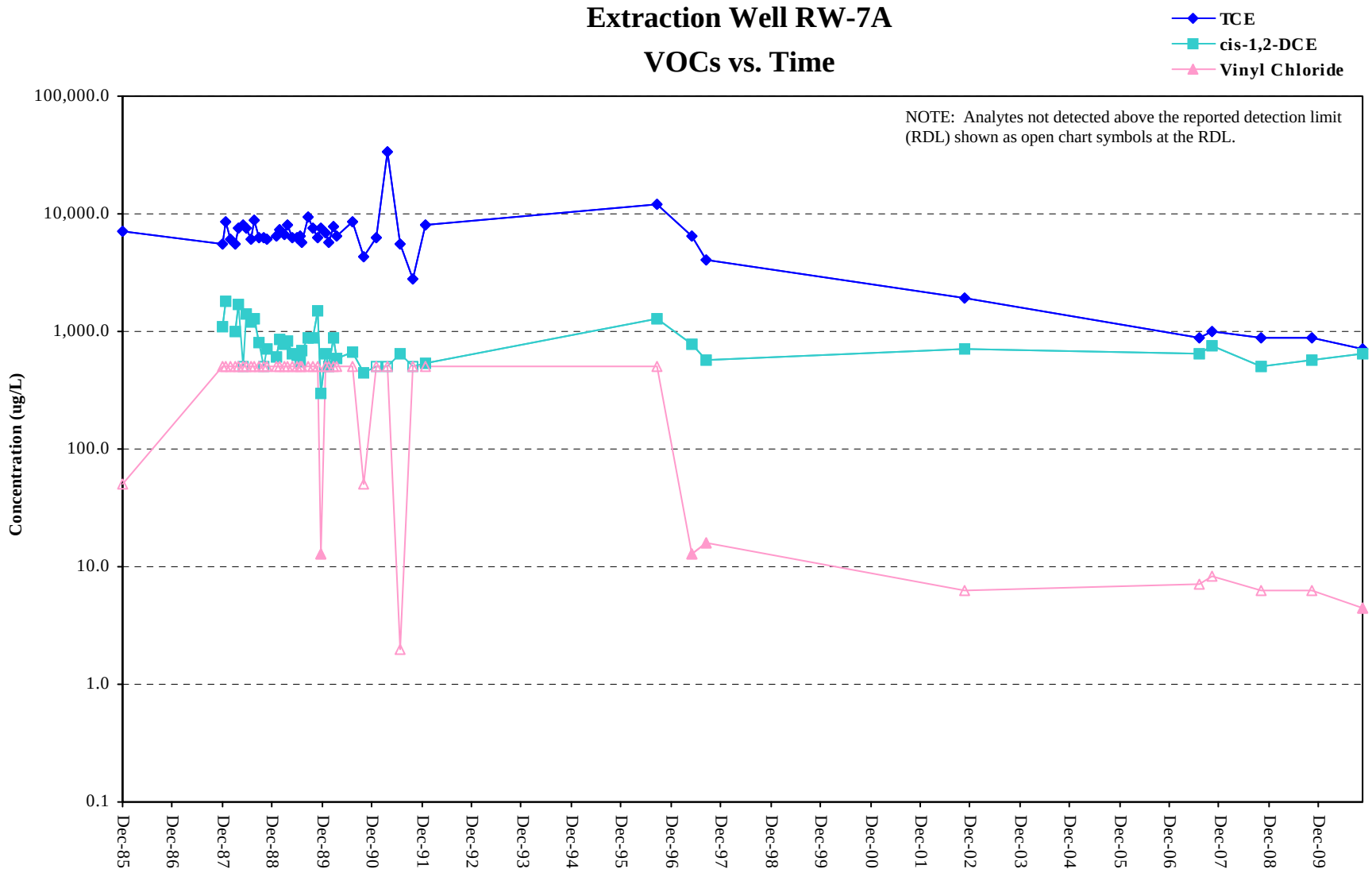
Weiss Associates

Extraction Well RW-7A
VOCs vs. Time



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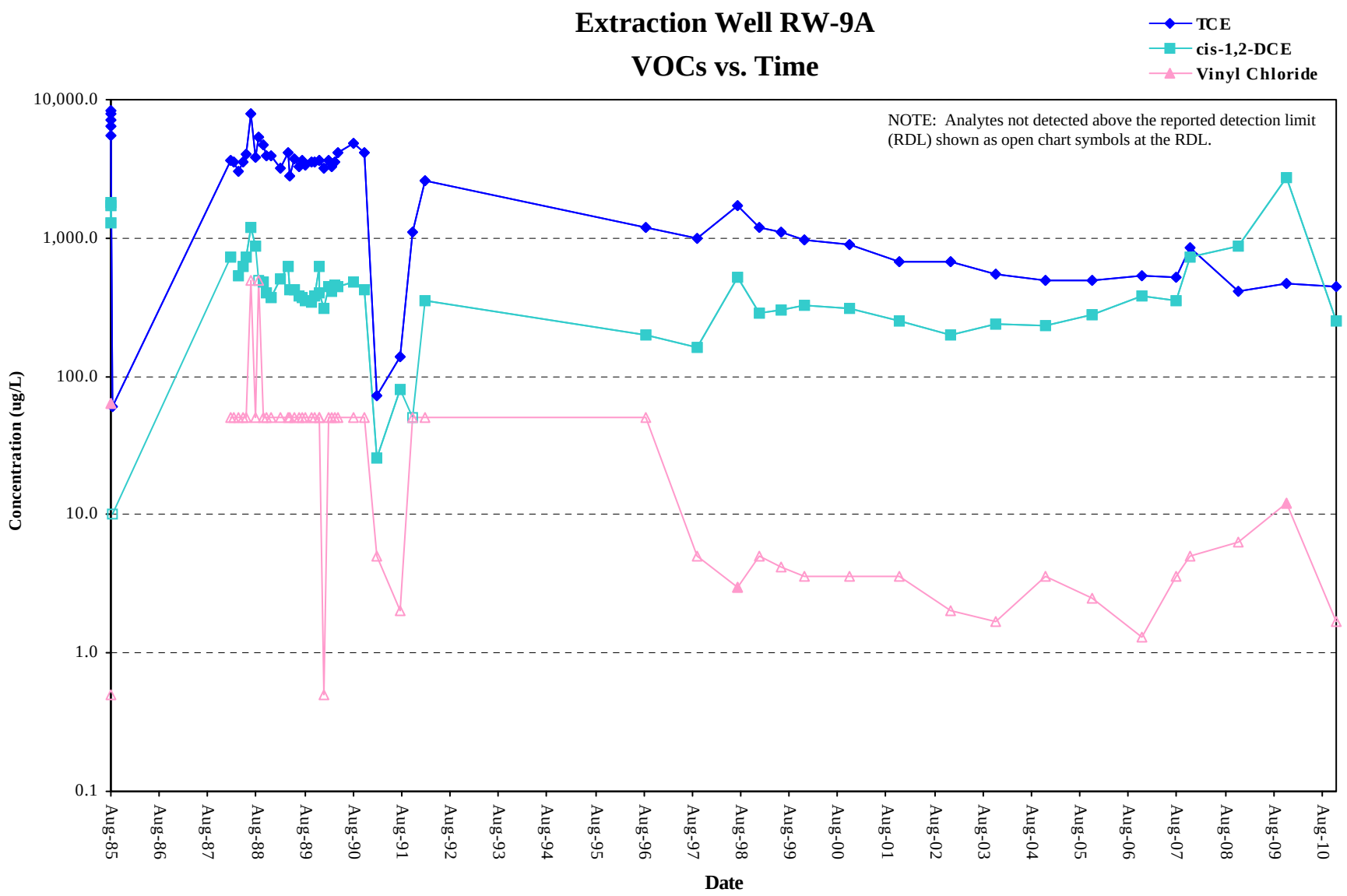
Weiss Associates

Extraction Well RW-9A
VOCs vs. Time



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Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

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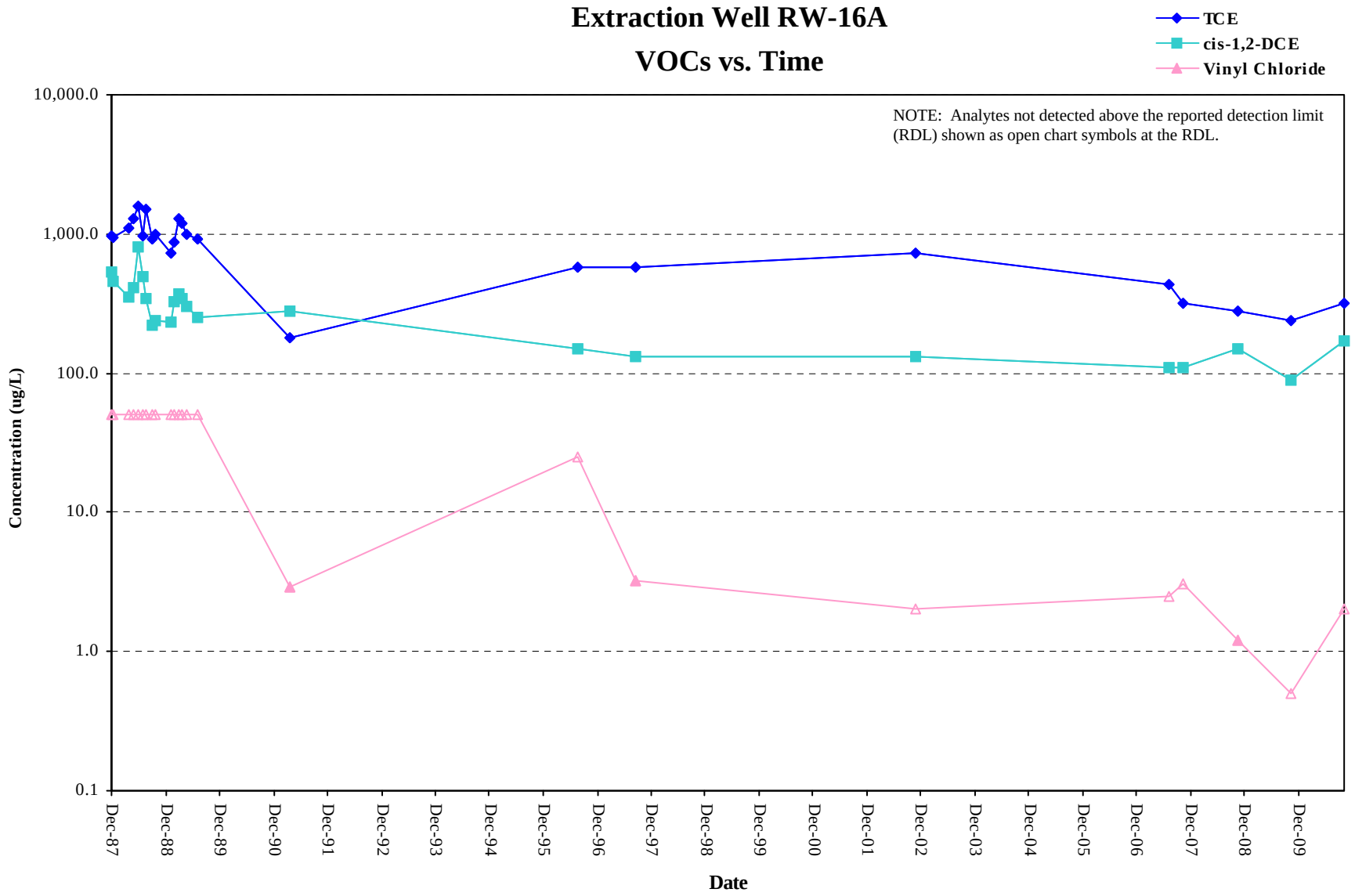
Weiss Associates

Extraction Well RW-16A
VOCs vs. Time



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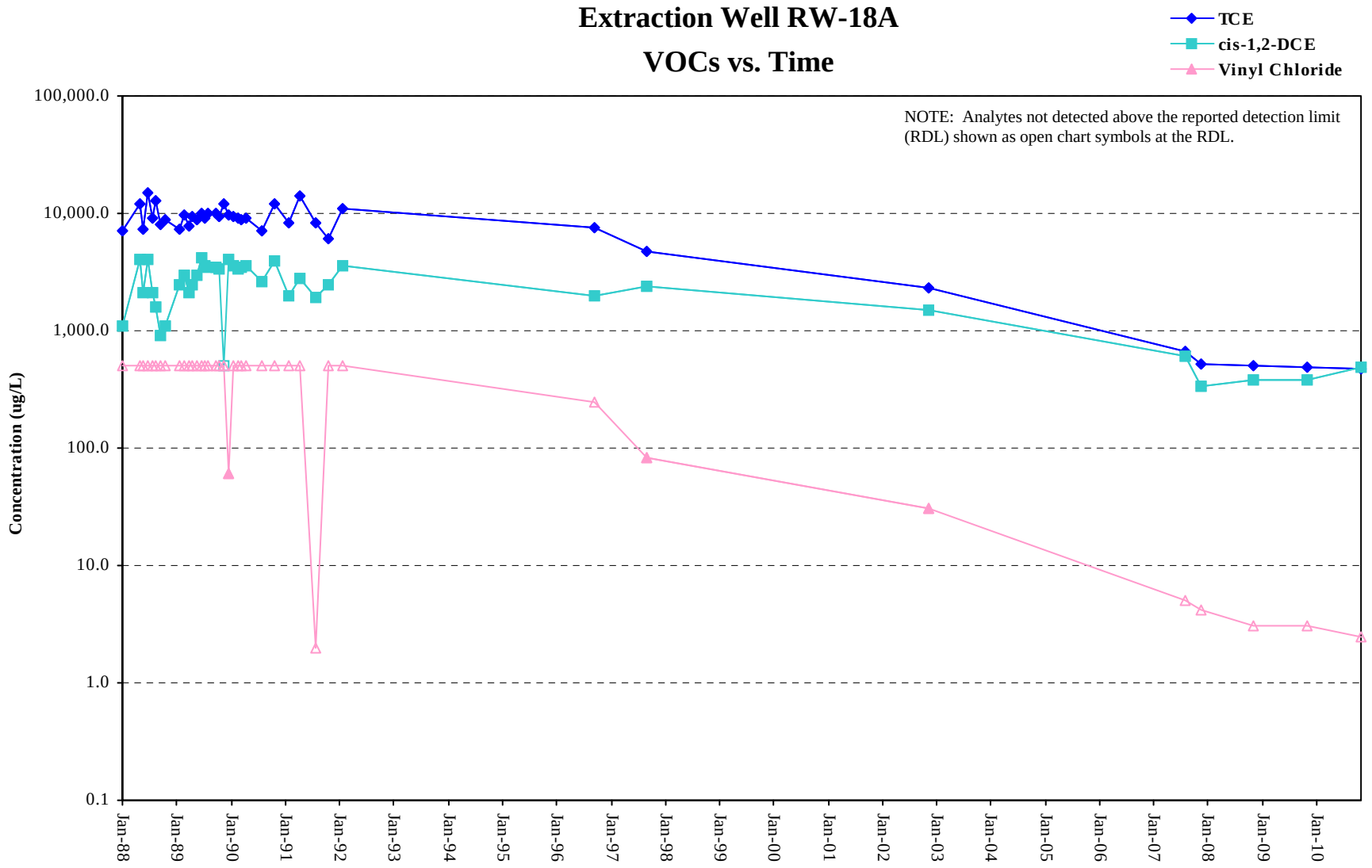
Weiss Associates

Extraction Well RW-18A
VOCs vs. Time



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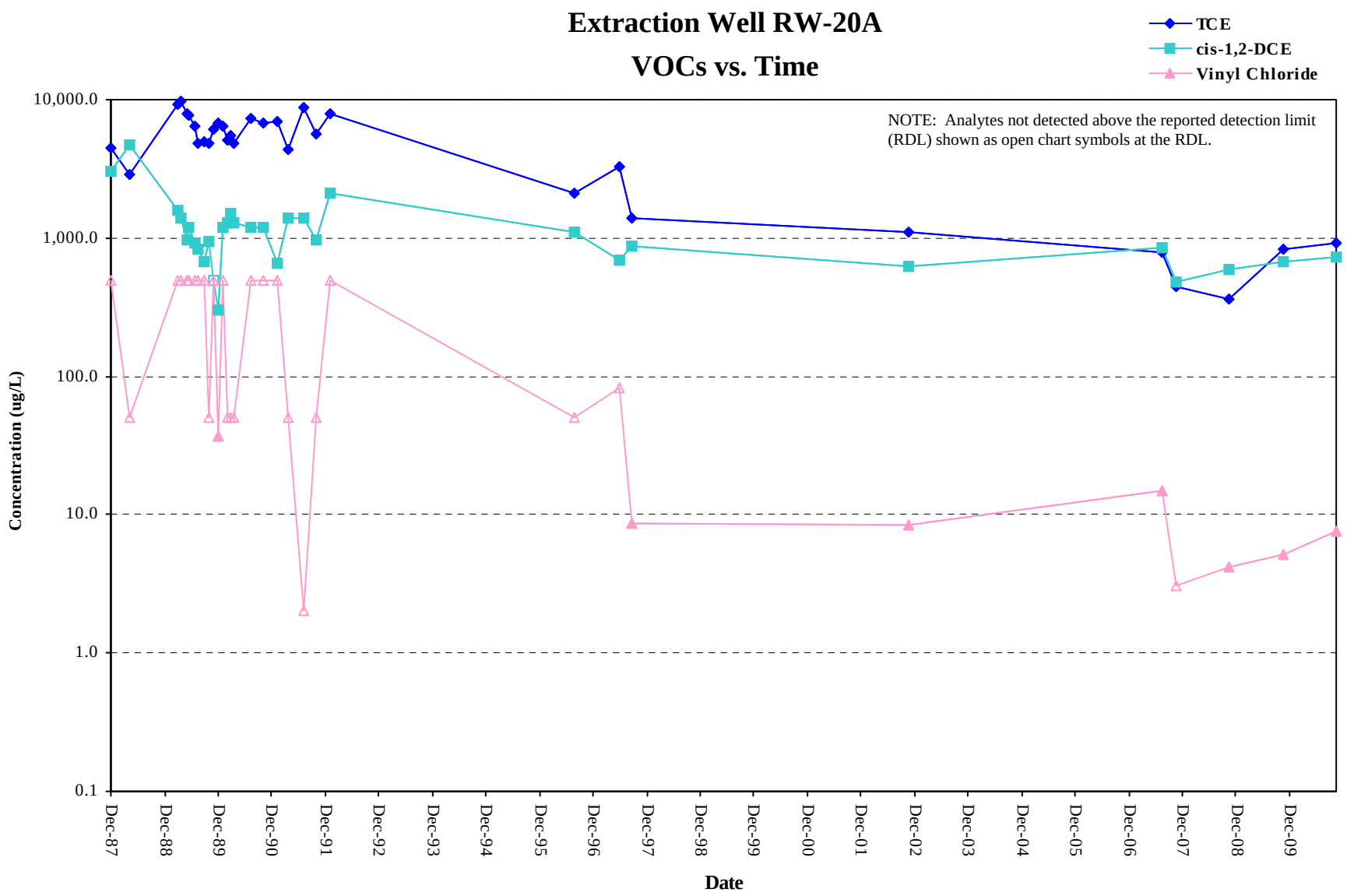
Weiss Associates

Extraction Well RW-20A
VOCs vs. Time



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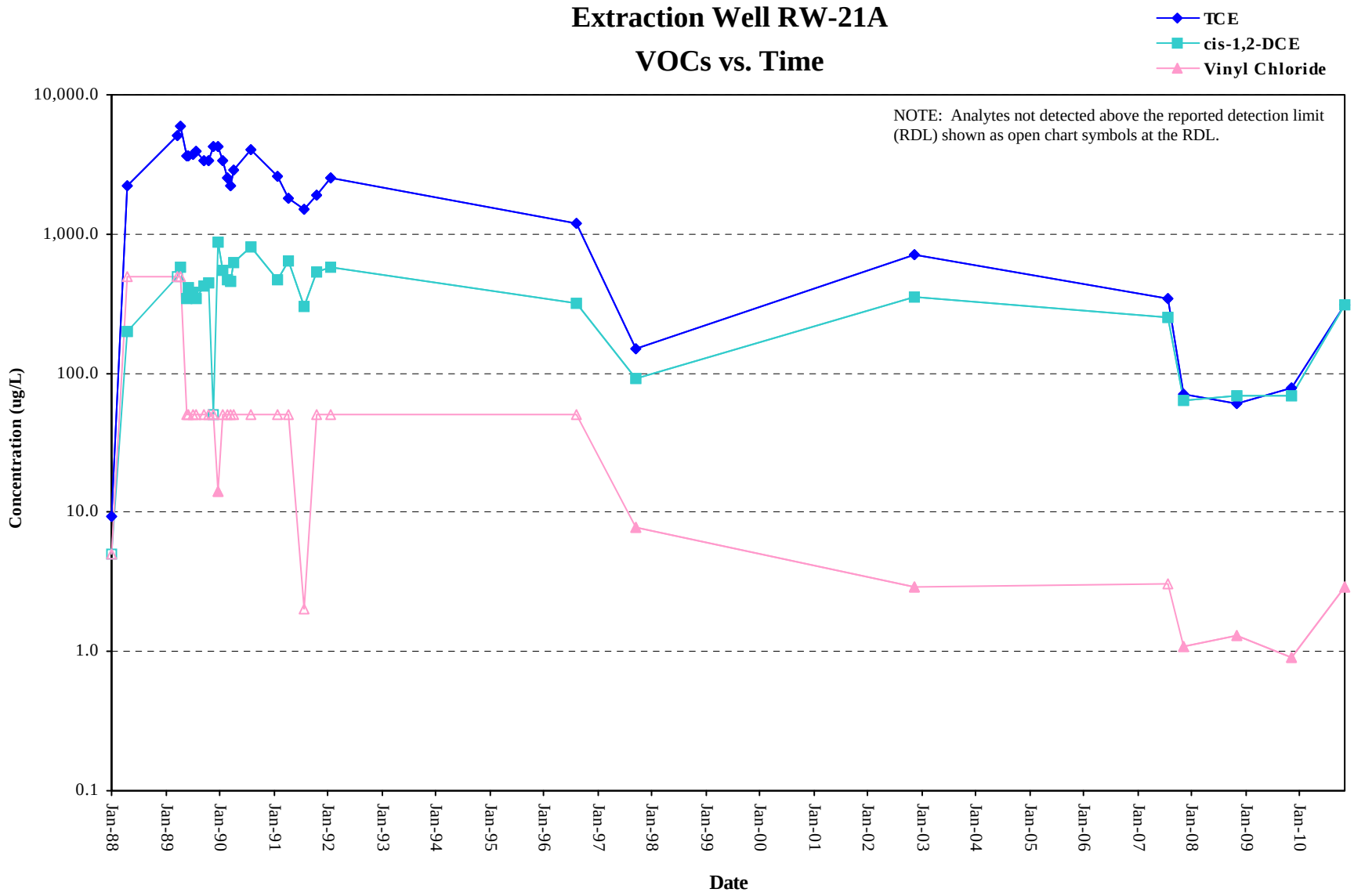
Weiss Associates

Extraction Well RW-21A
VOCs vs. Time

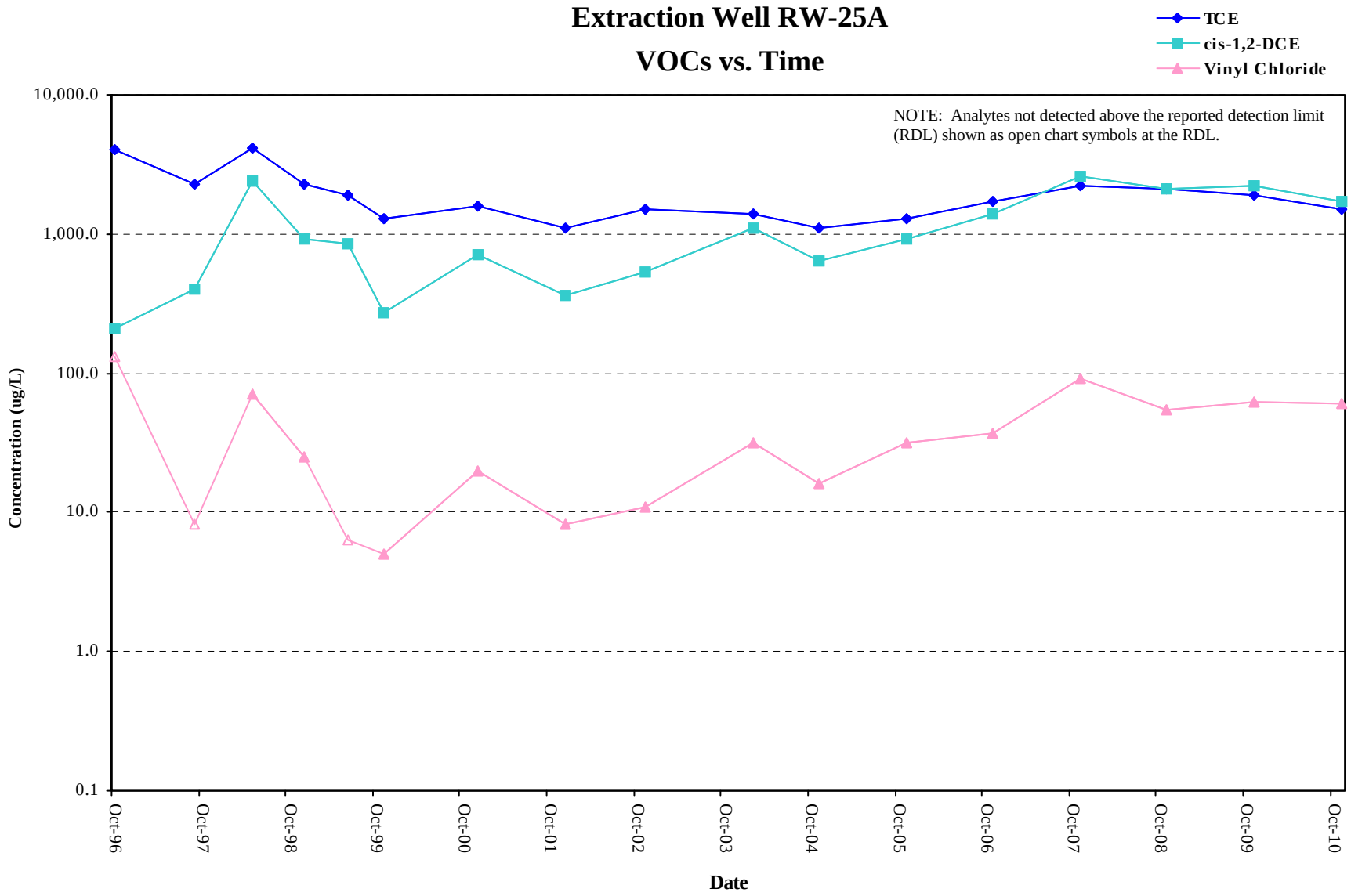


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:43 PM

Weiss Associates

Extraction Well RW-25A
VOCs vs. Time

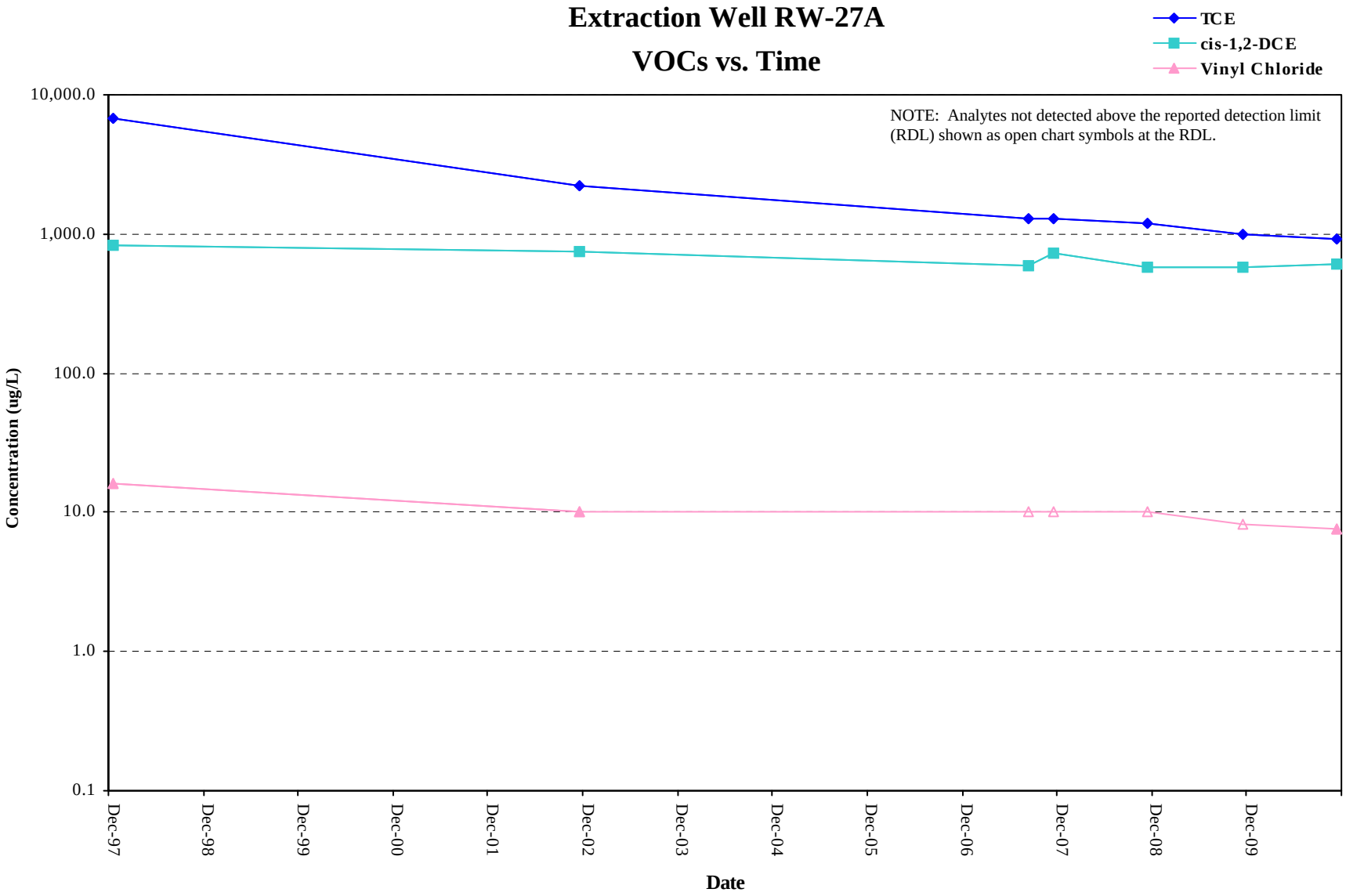


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:44 PM

Weiss Associates

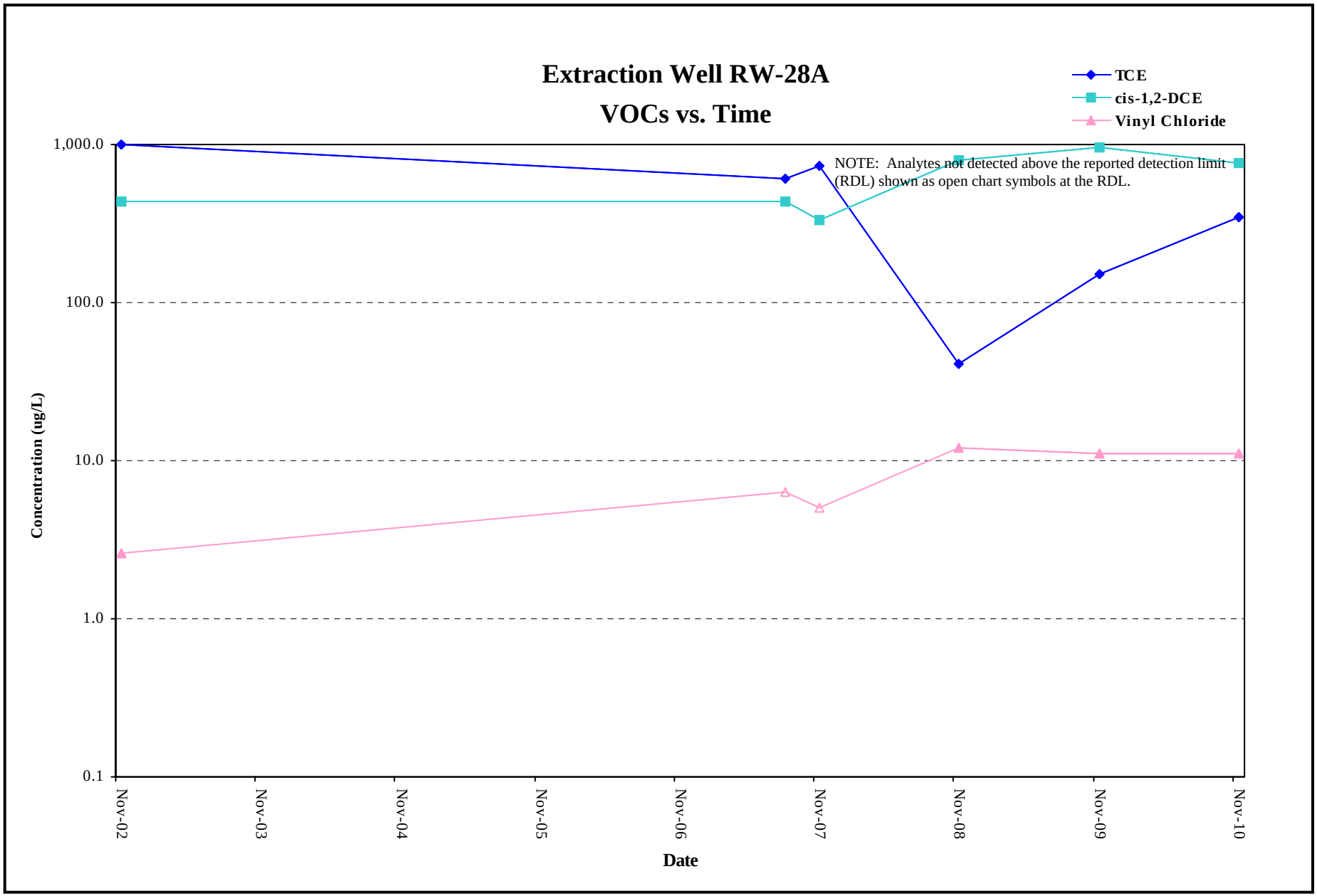
Extraction Well RW-27A
VOCs vs. Time



Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:46 PM

Weiss Associates

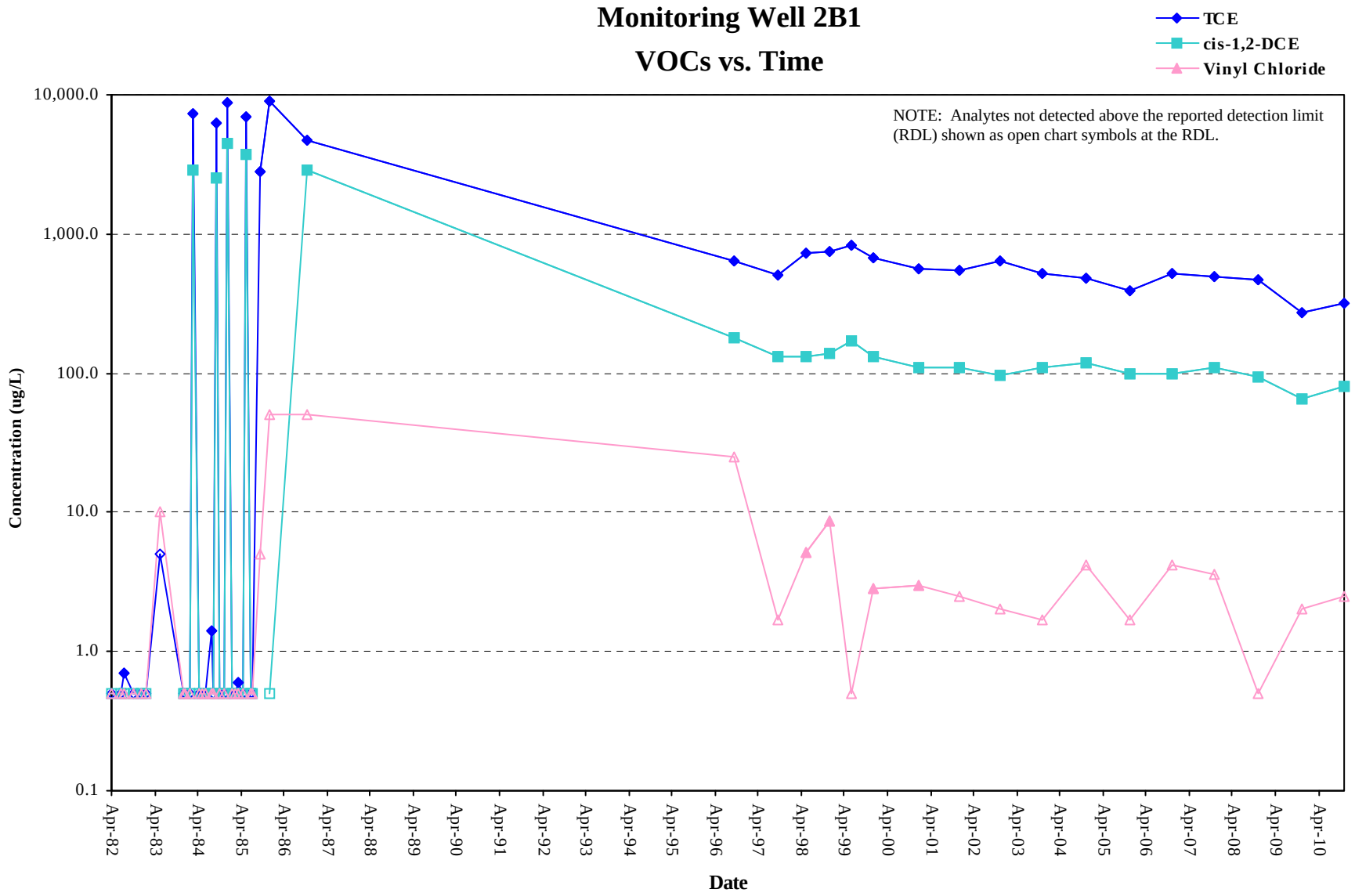


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:47 PM

Weiss Associates

Monitoring Well 2B1
VOCs vs. Time

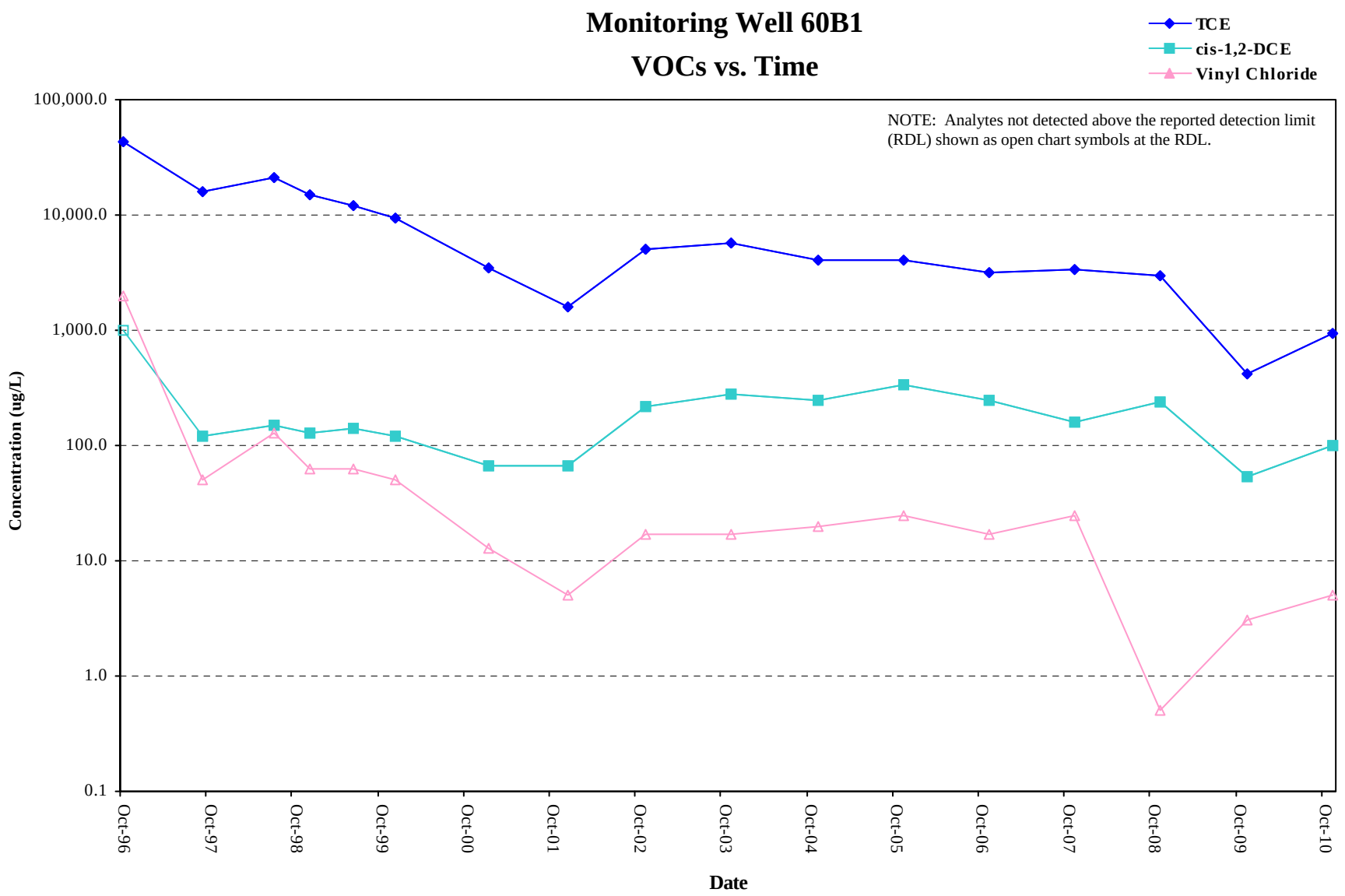


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:48 PM

Weiss Associates

Monitoring Well 60B1
VOCs vs. Time

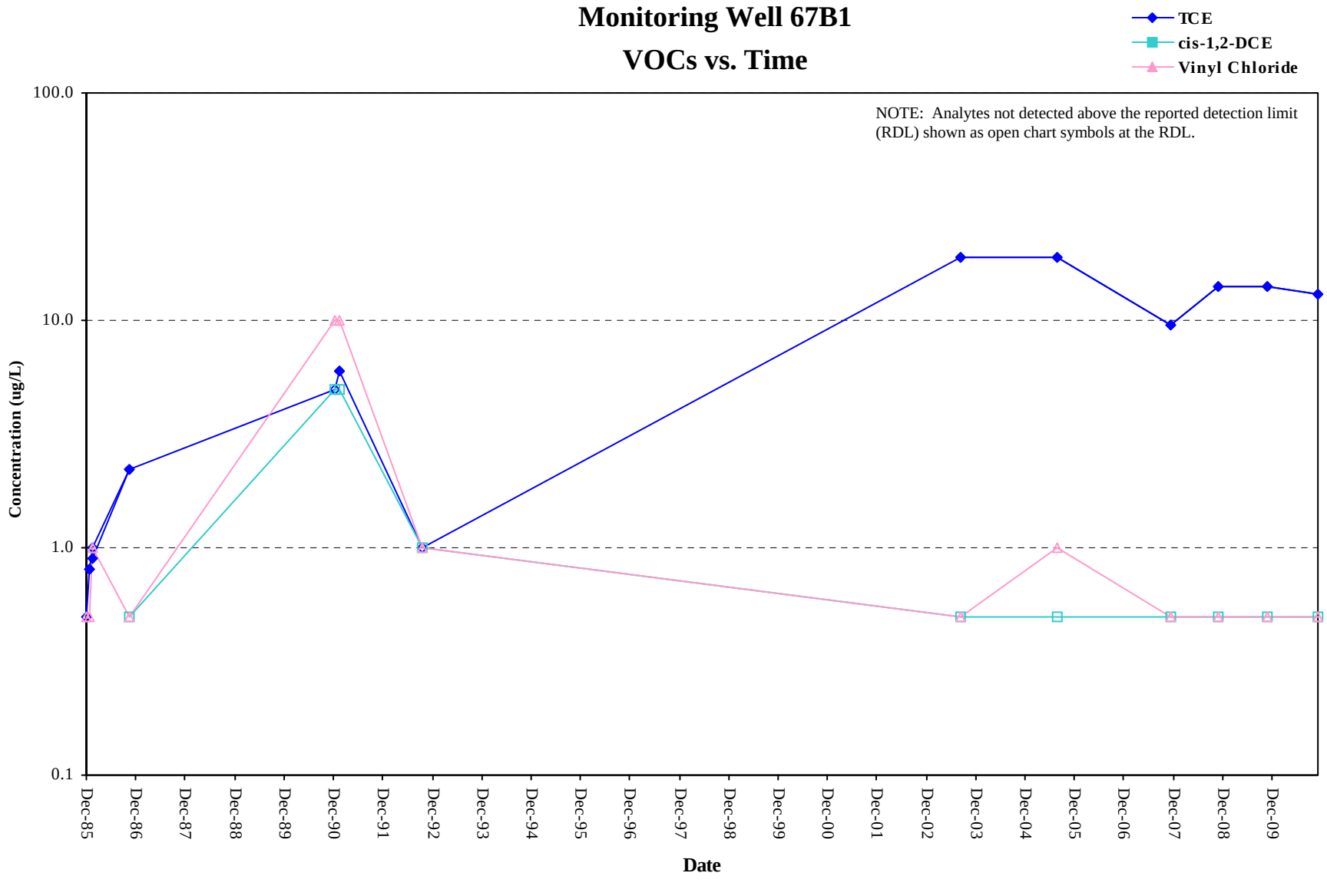


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:52 PM

Weiss Associates

Monitoring Well 67B1
VOCs vs. Time

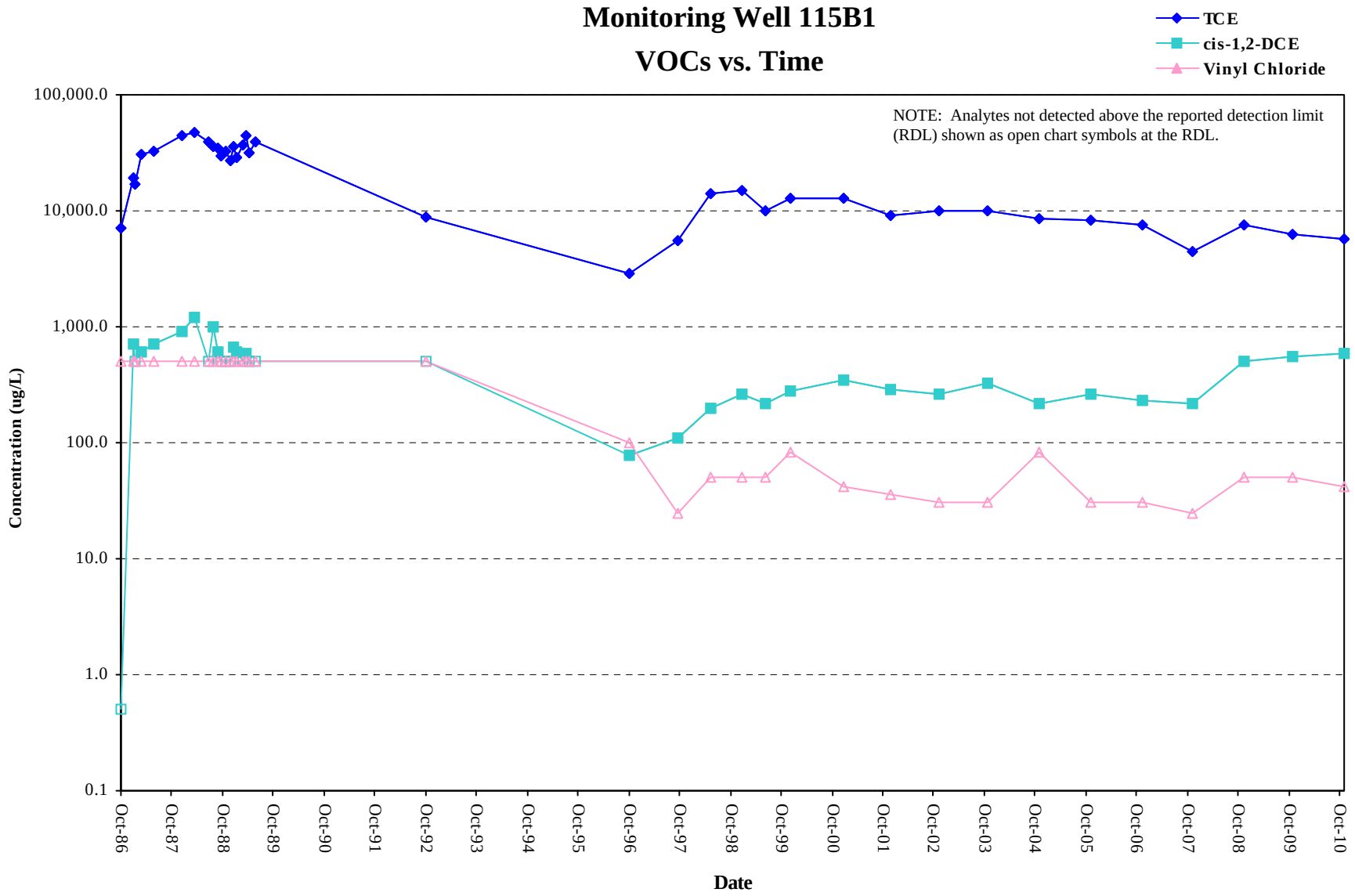


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:53 PM

Weiss Associates

Monitoring Well 115B1
VOCs vs. Time

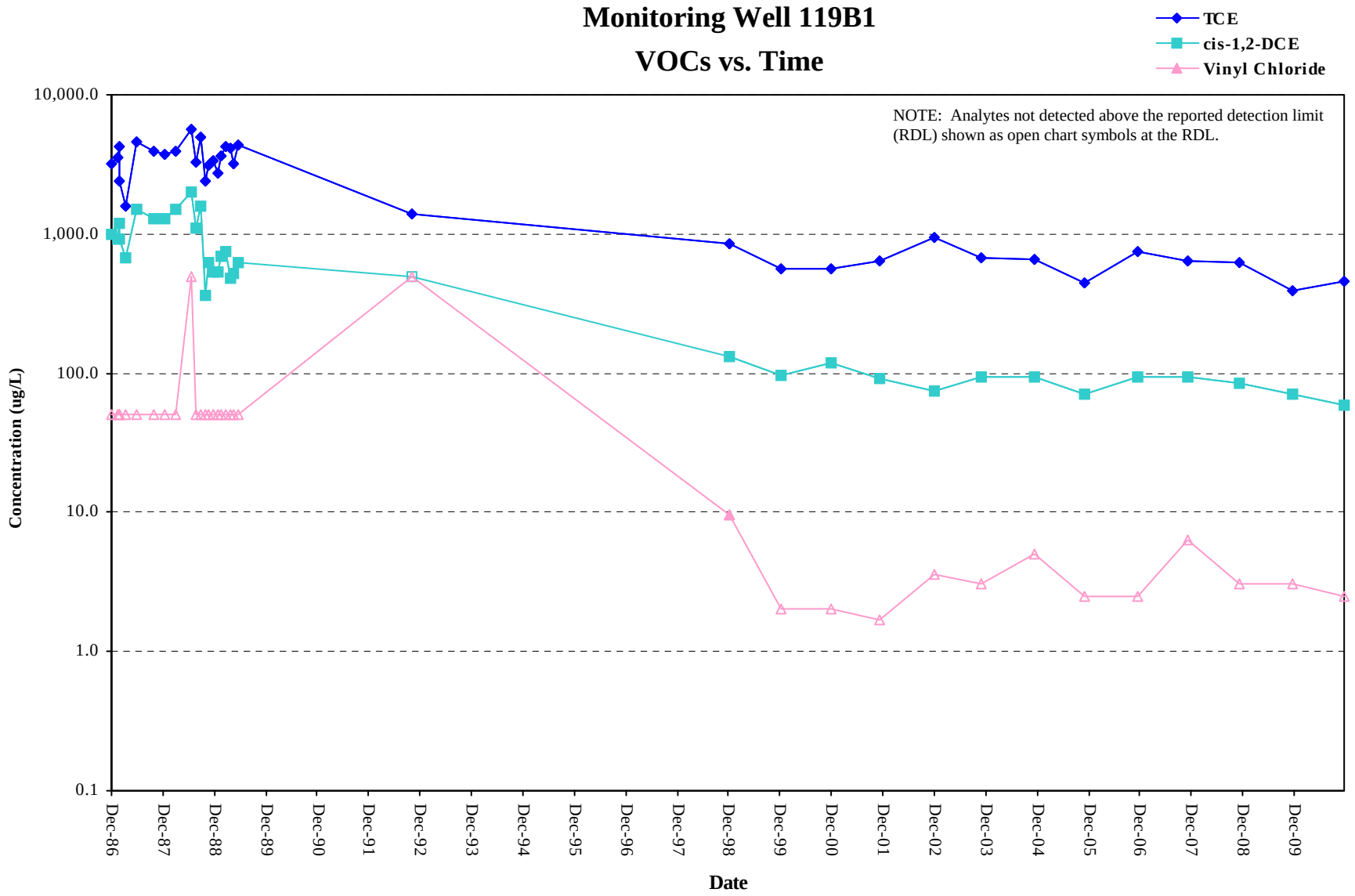


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:54 PM

Weiss Associates

Monitoring Well 119B1
VOCs vs. Time

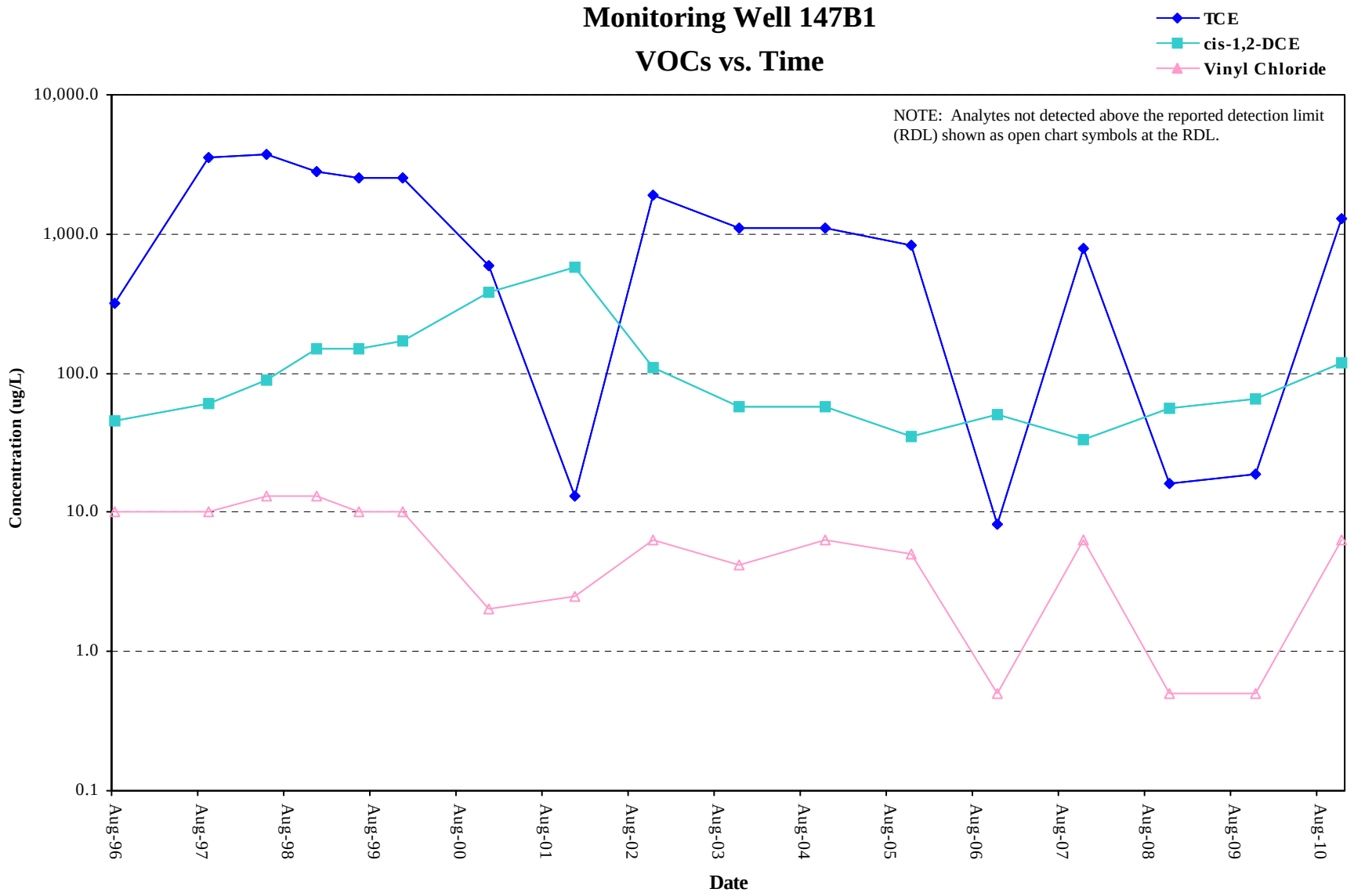


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:05:55 PM

Weiss Associates

Monitoring Well 147B1
VOCs vs. Time



Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

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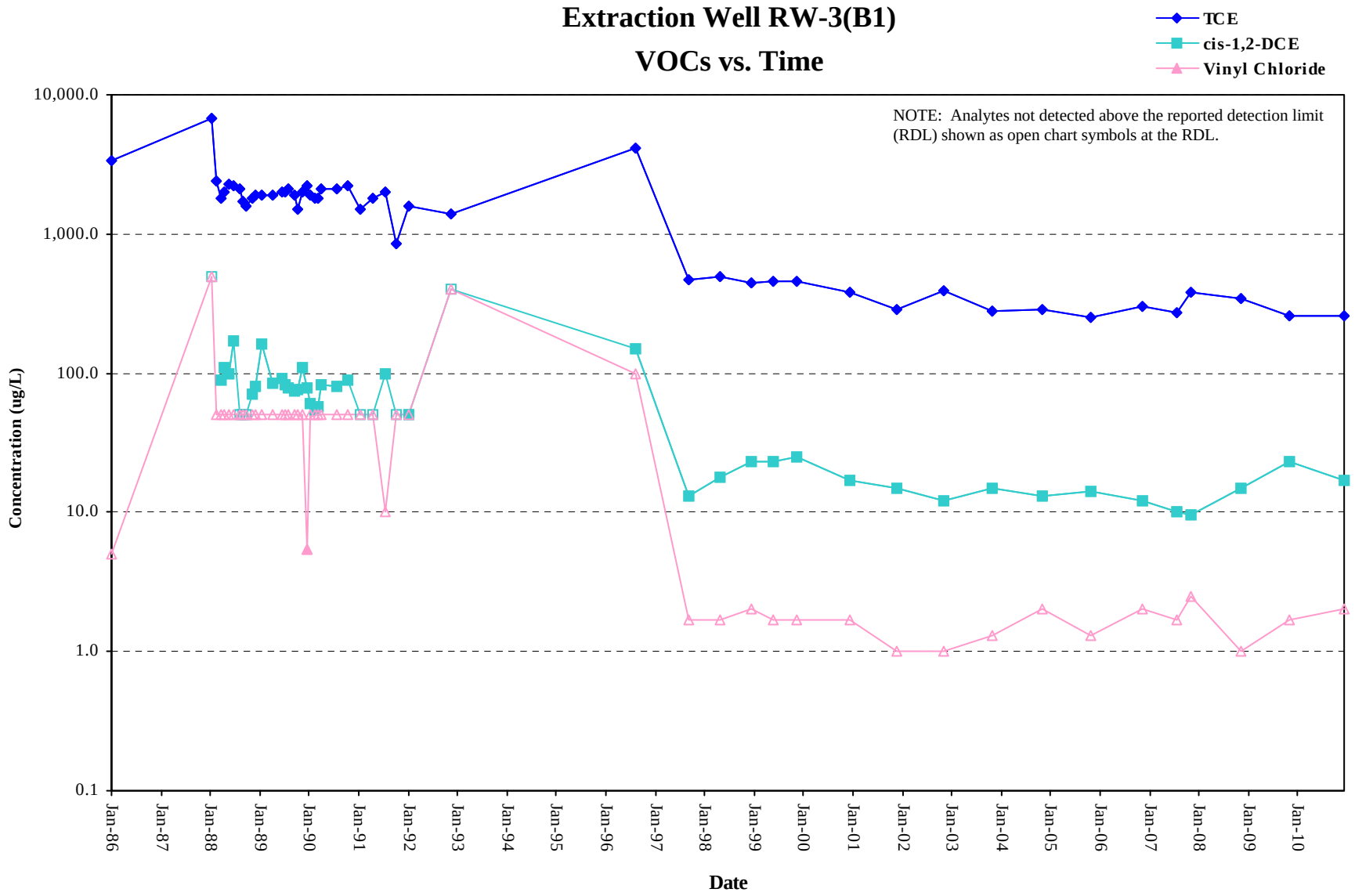
Weiss Associates

Extraction Well RW-3(B1)
VOCs vs. Time



Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

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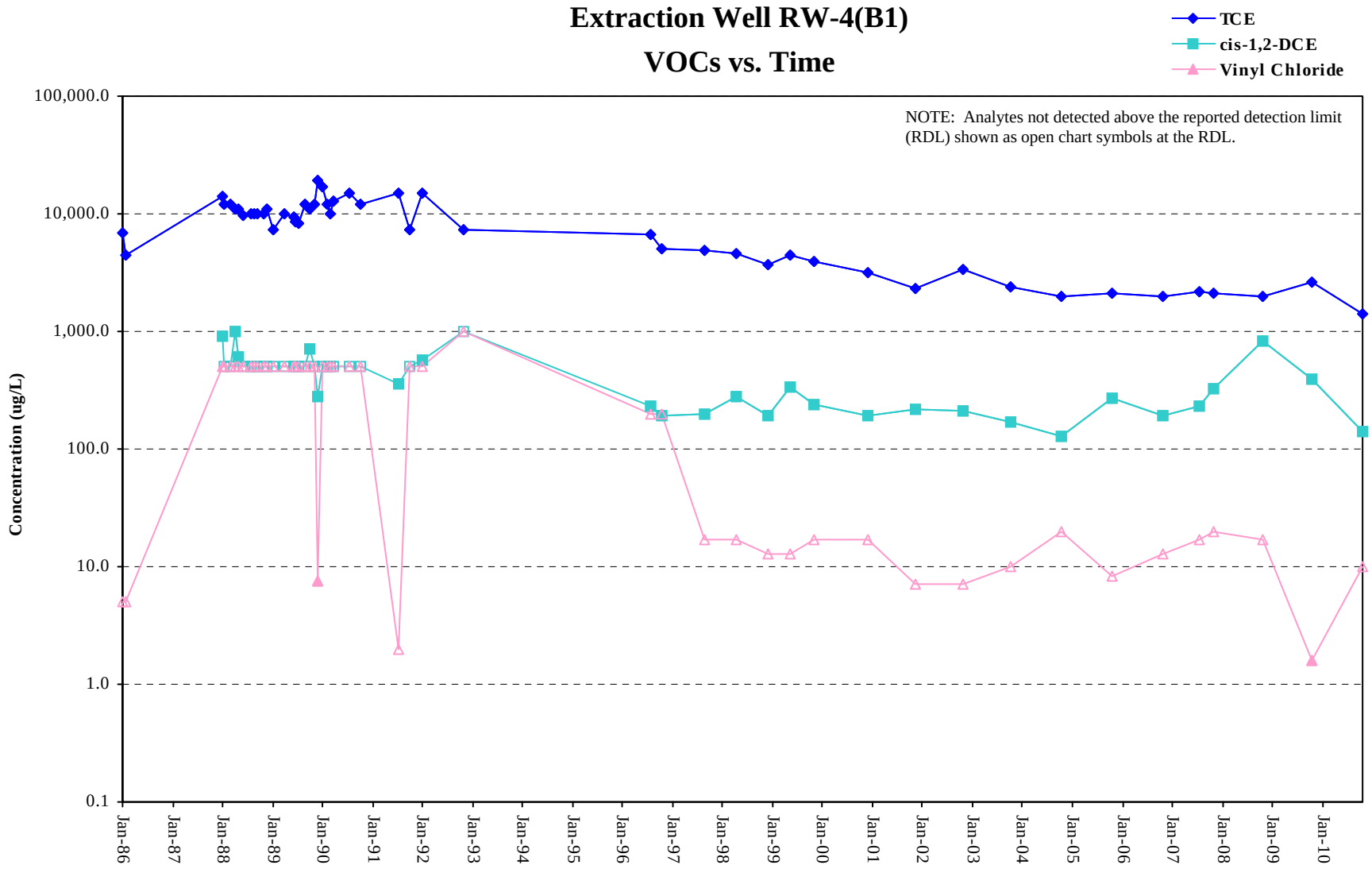
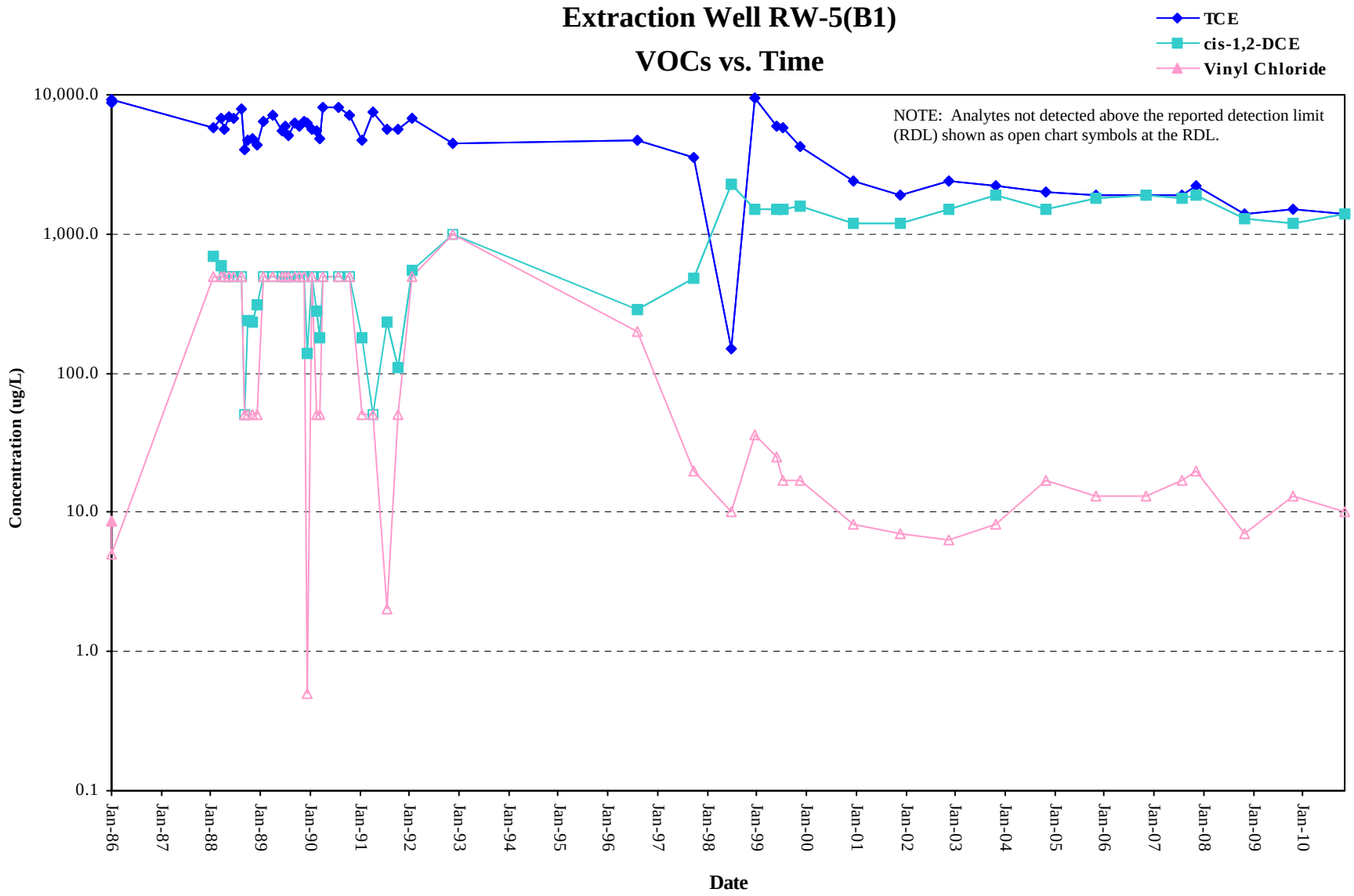
Weiss Associates

Extraction Well RW-4(B1)
VOCs vs. Time



Weiss Associates

Extraction Well RW-5(B1)
VOCs vs. Time



Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

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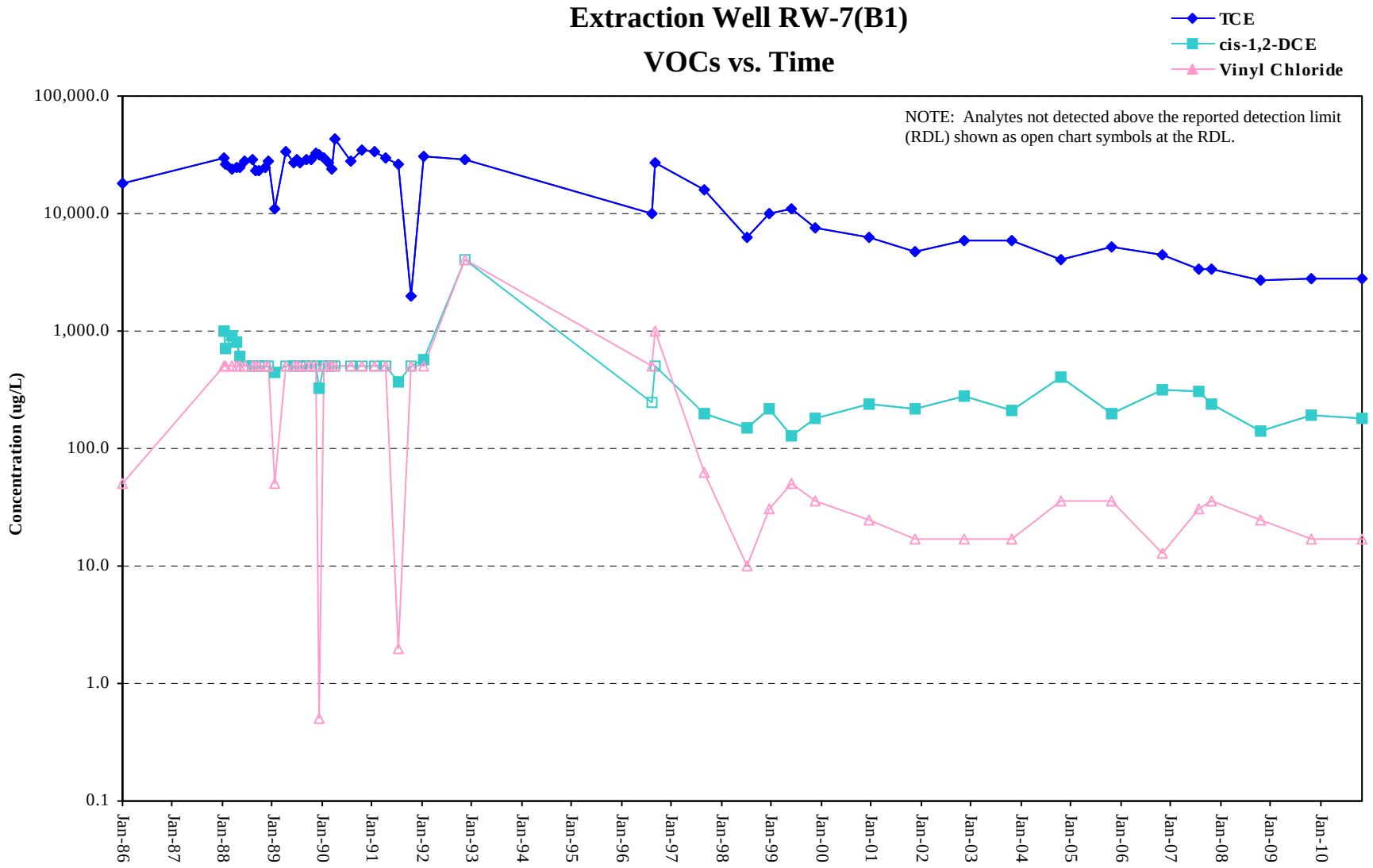
Weiss Associates

Extraction Well RW-7(B1)
VOCs vs. Time

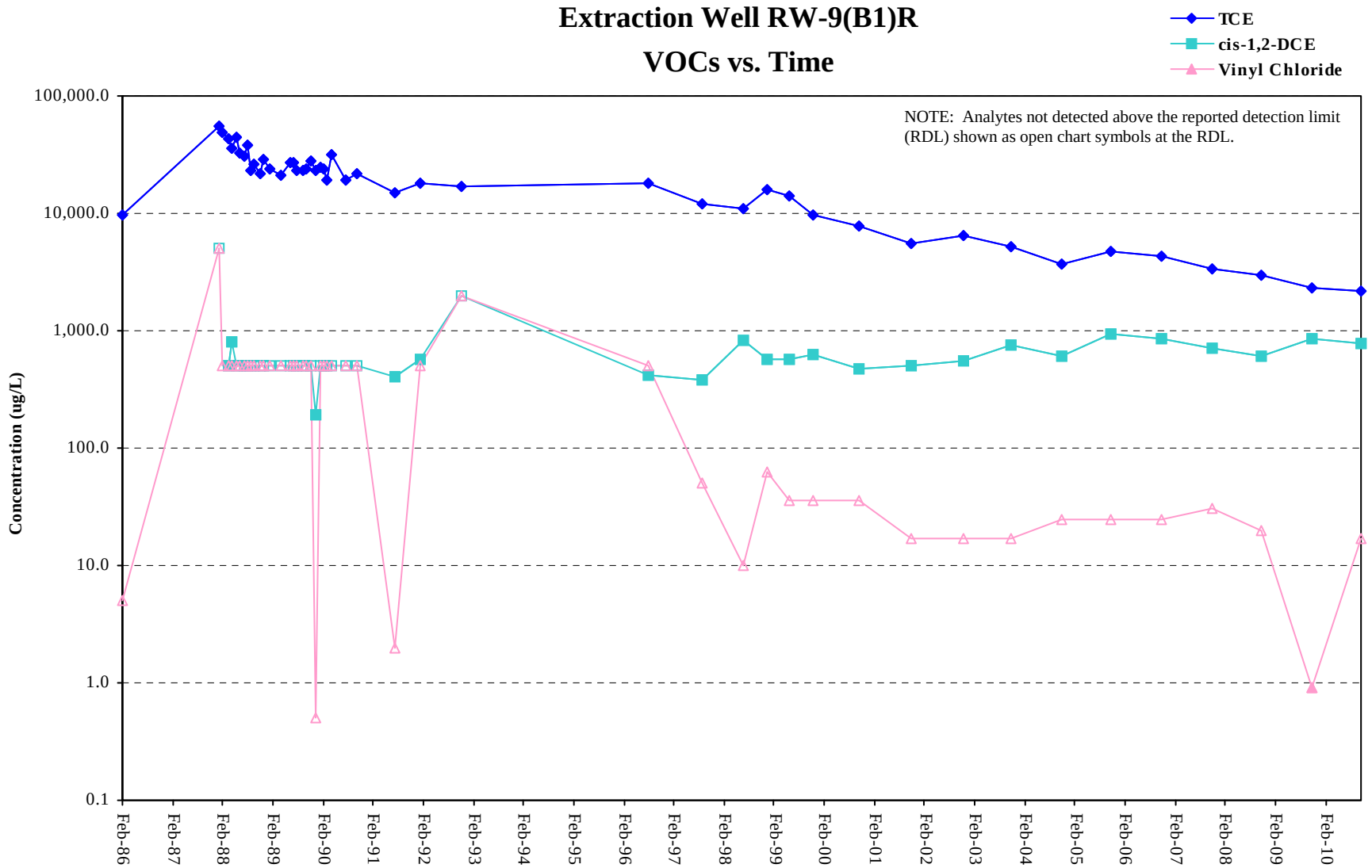


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:02 PM

Weiss Associates

Extraction Well RW-9(B1)R
VOCs vs. Time

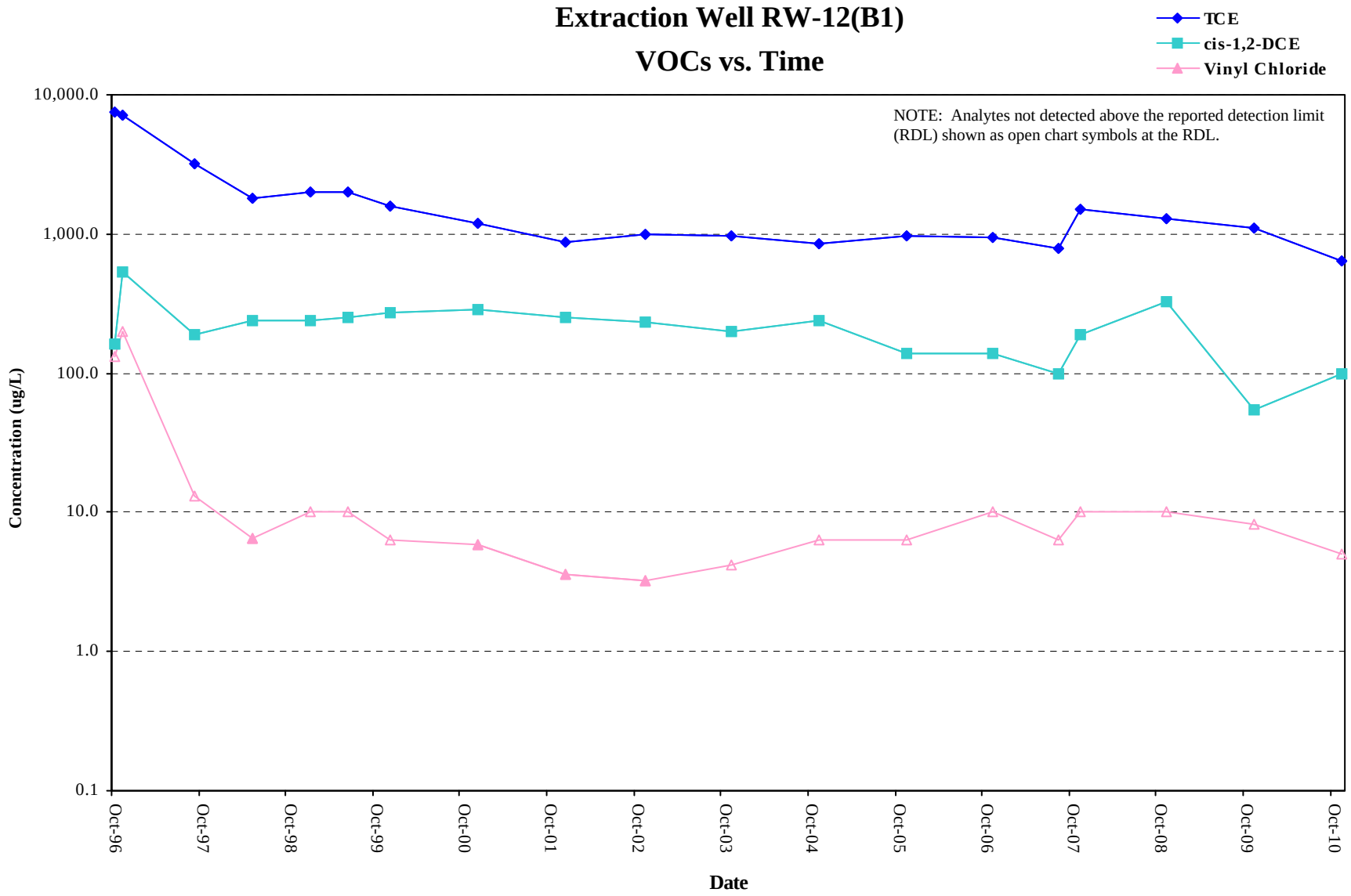


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:03 PM

Weiss Associates

Extraction Well RW-12(B1)
VOCs vs. Time

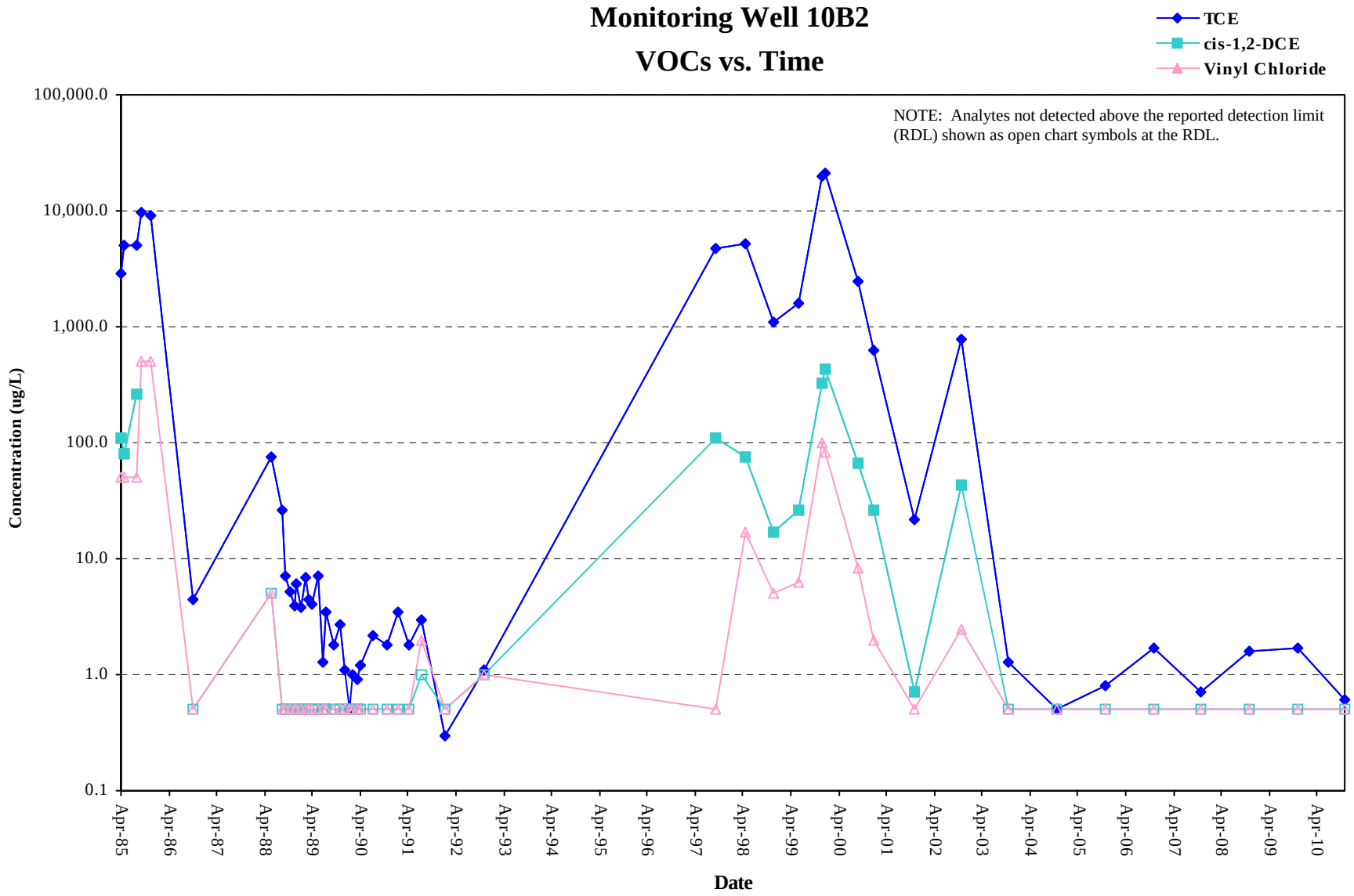


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:05 PM

Weiss Associates

Monitoring Well 10B2
VOCs vs. Time

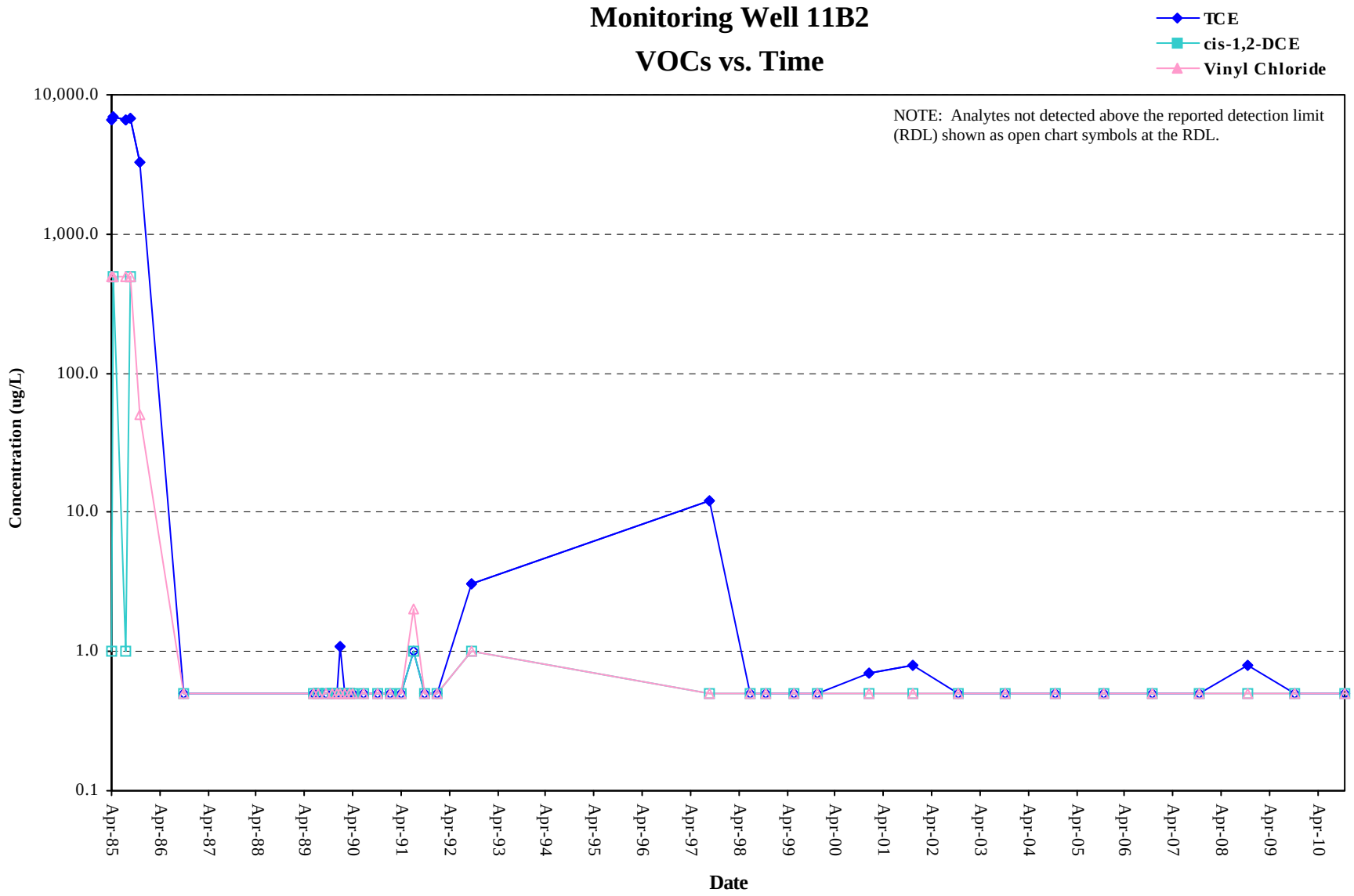


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:06 PM

Weiss Associates

Monitoring Well 11B2
VOCs vs. Time

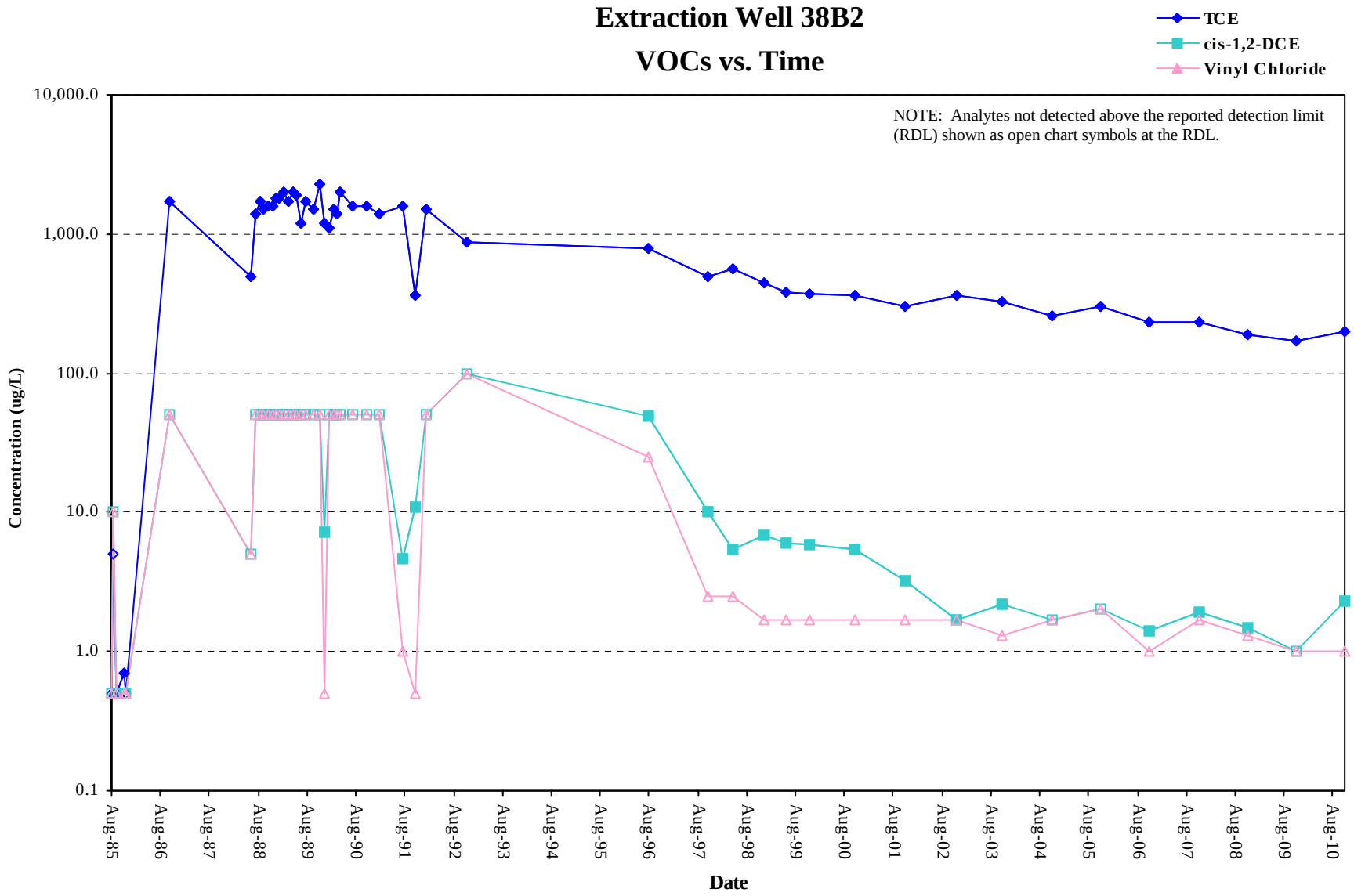


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:08 PM

Weiss Associates

Extraction Well 38B2
VOCs vs. Time

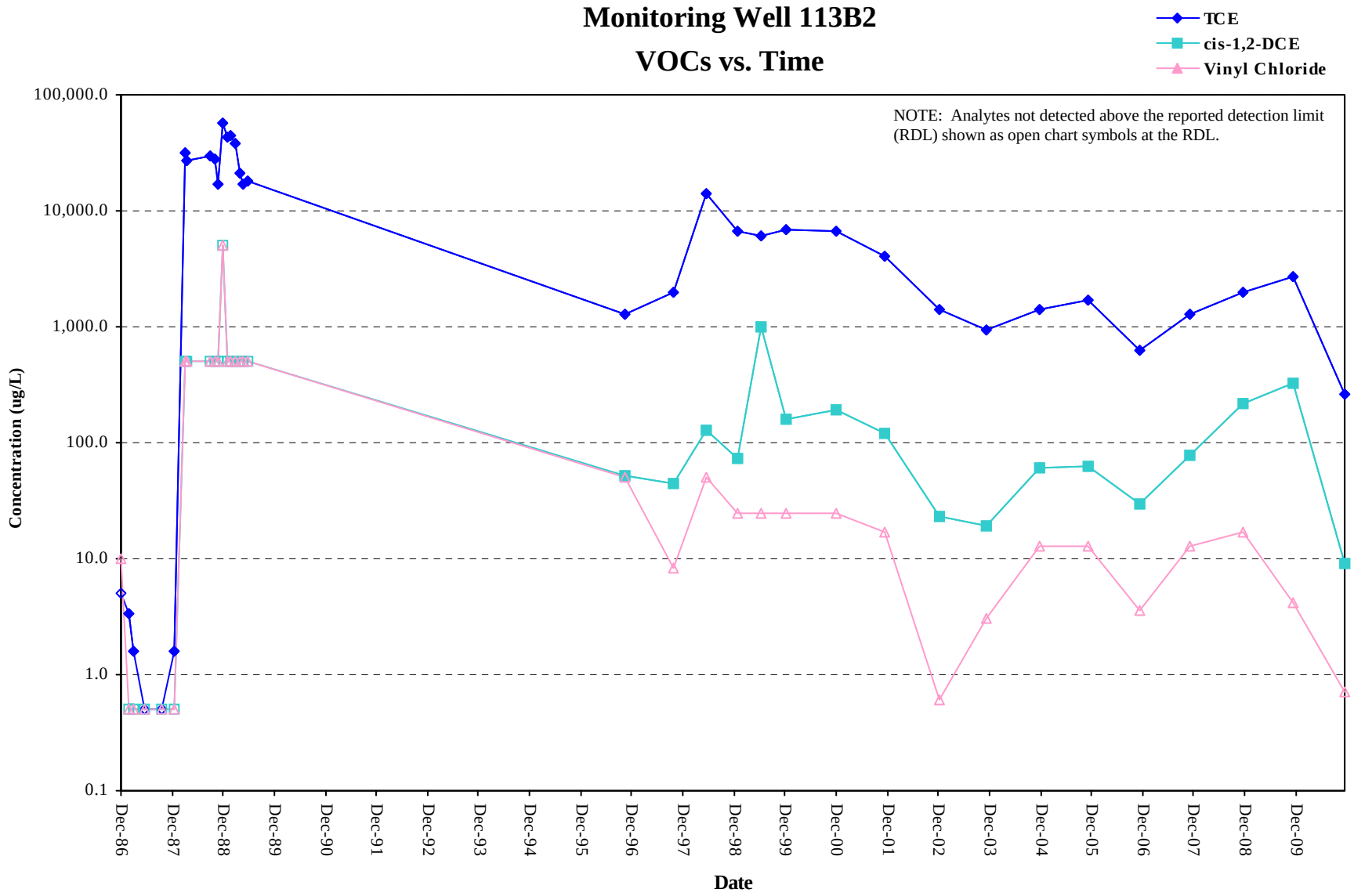


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:09 PM

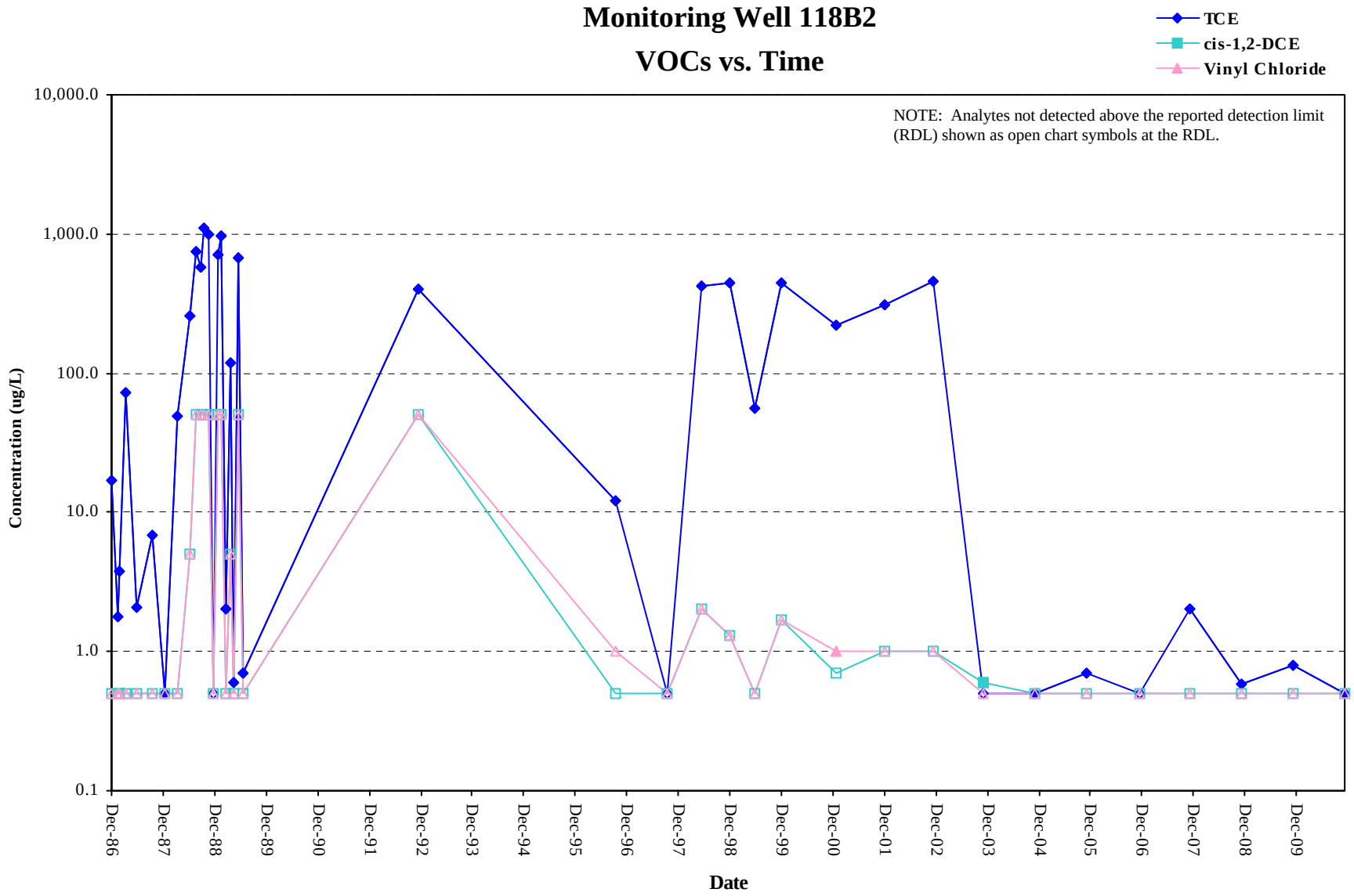
Weiss Associates

Monitoring Well 113B2
VOCs vs. Time



Weiss Associates

Monitoring Well 118B2
VOCs vs. Time

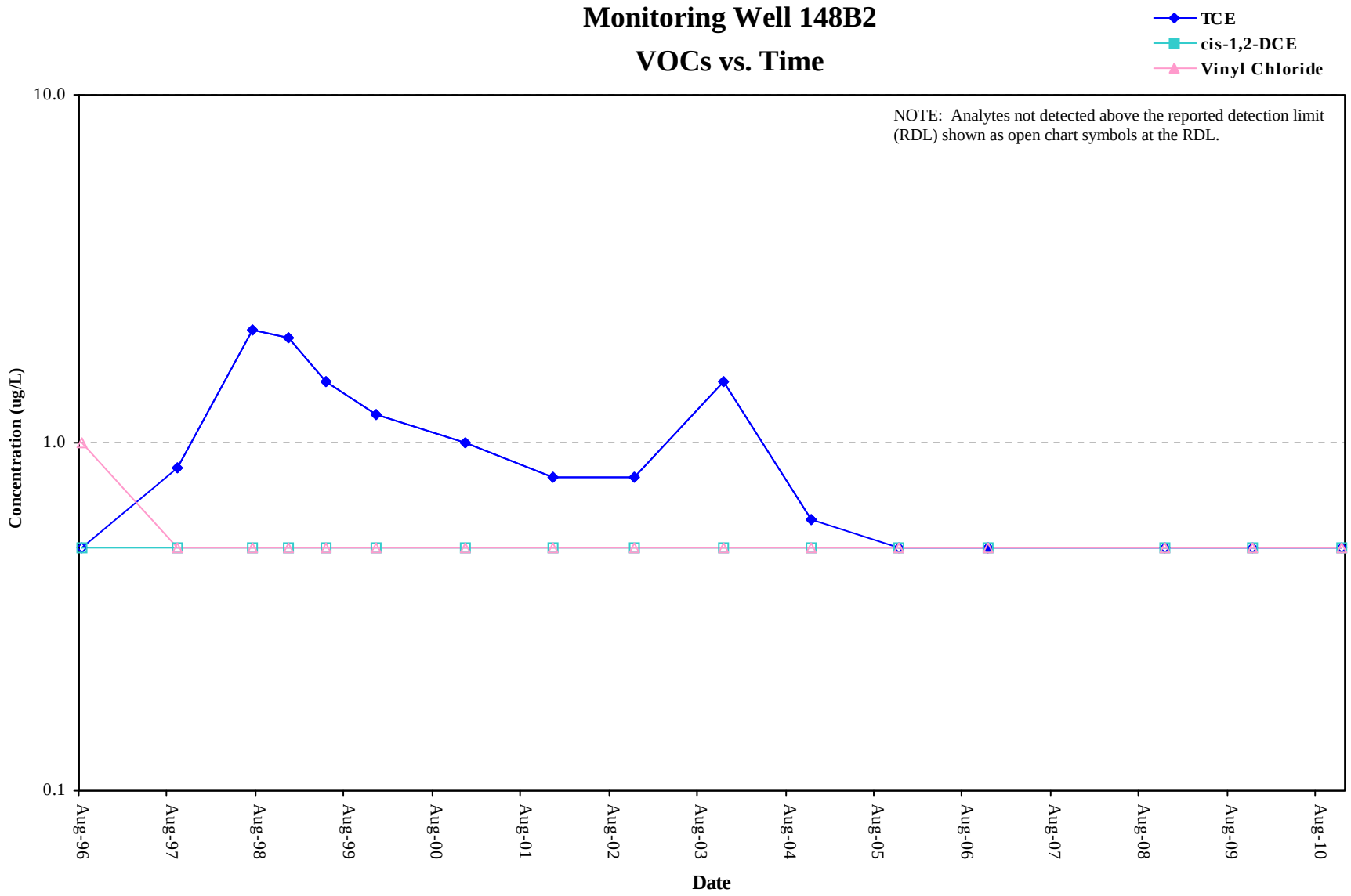


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:12 PM

Weiss Associates

Monitoring Well 148B2
VOCs vs. Time

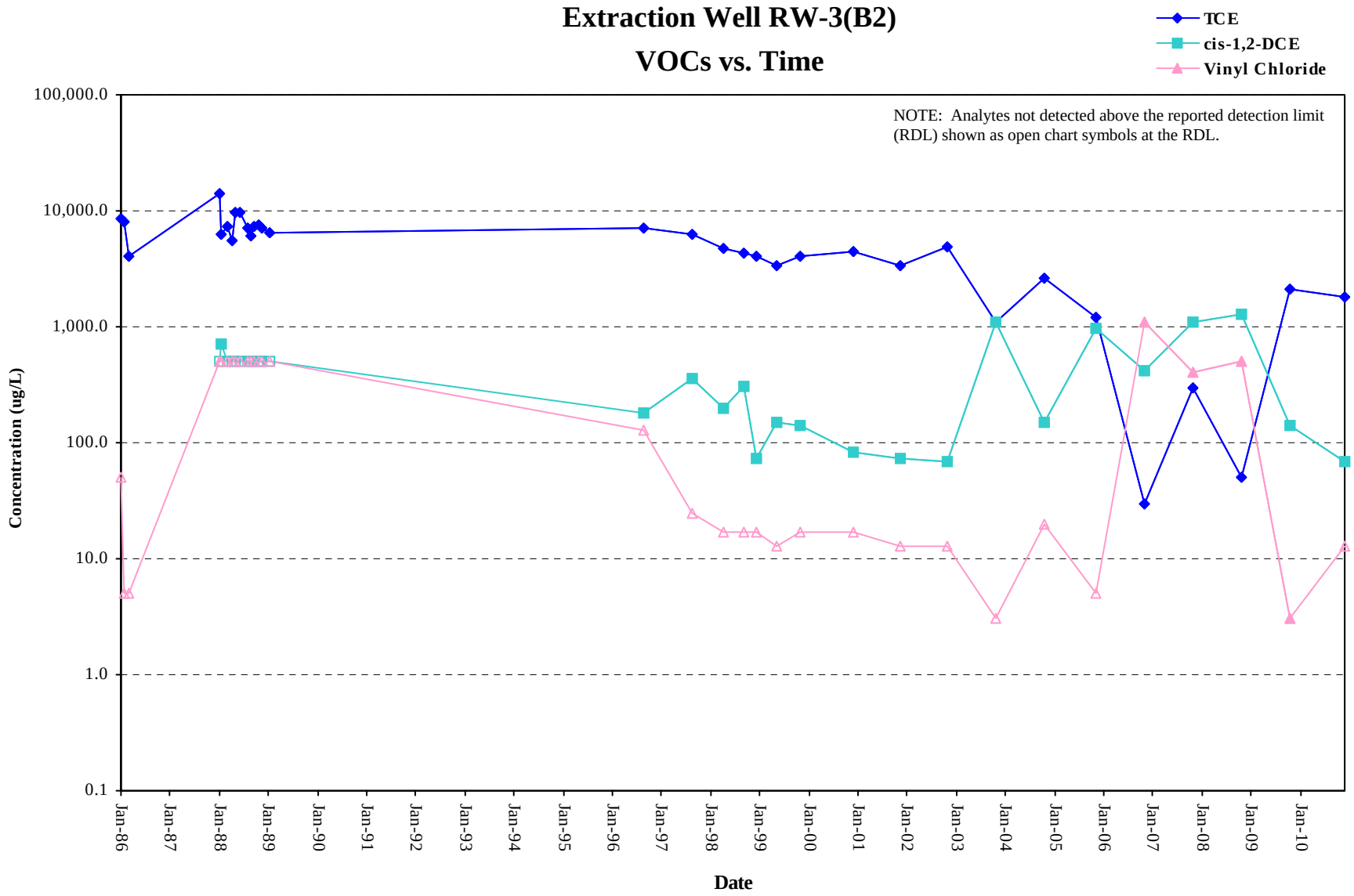


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:13 PM

Weiss Associates

Extraction Well RW-3(B2)
VOCs vs. Time

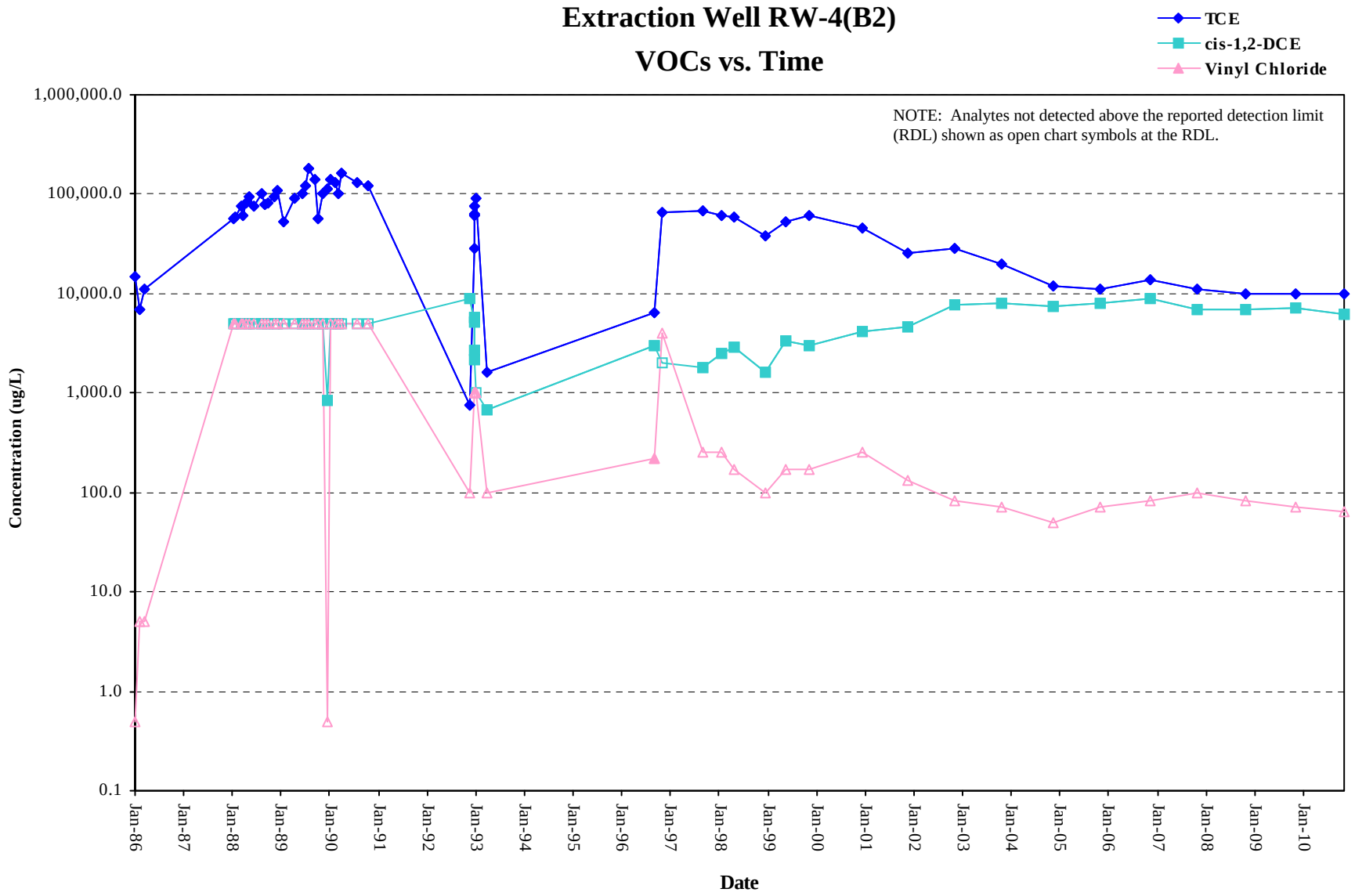


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:15 PM

Weiss Associates

Extraction Well RW-4(B2)
VOCs vs. Time

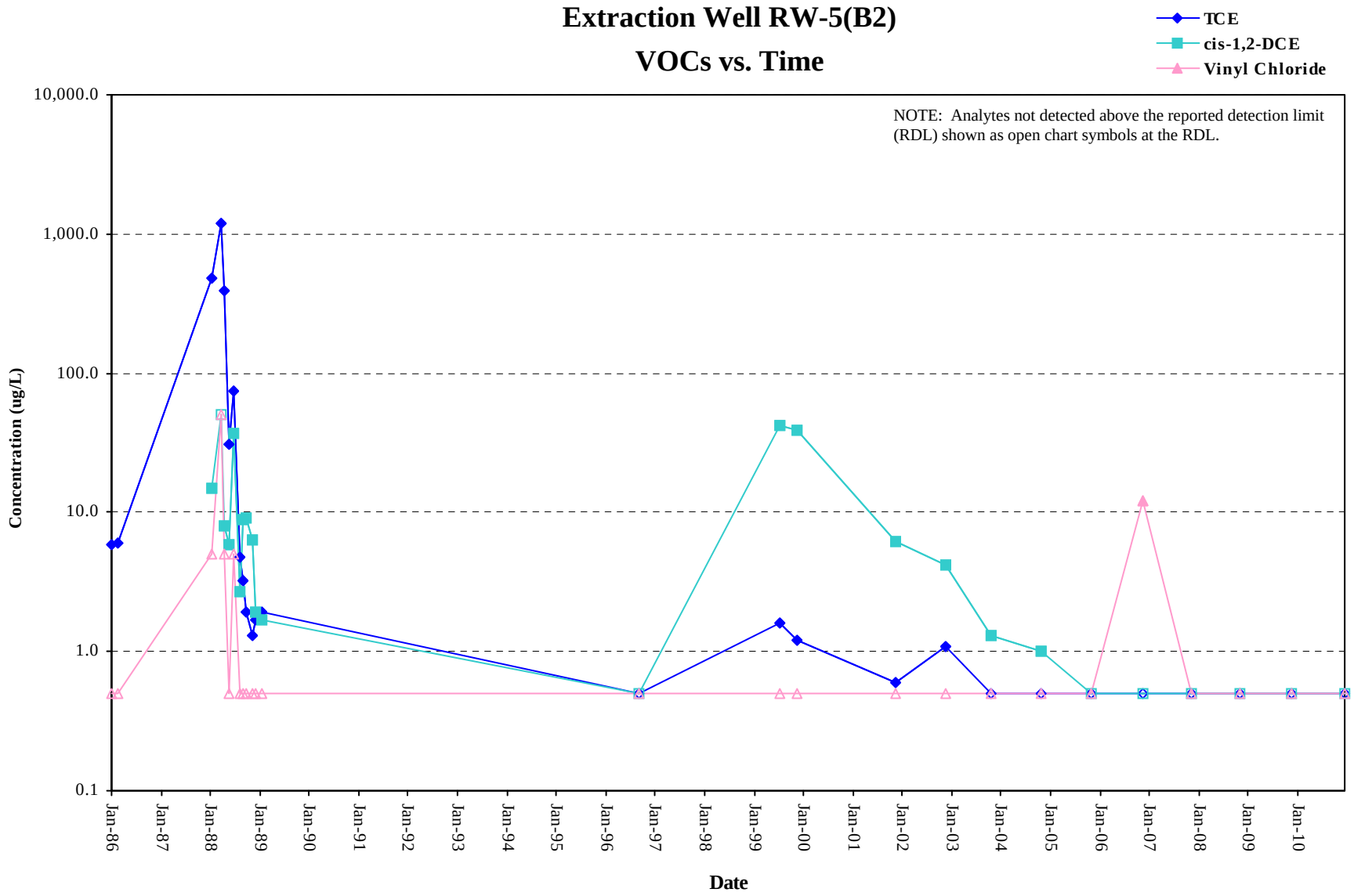


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:16 PM

Weiss Associates

Extraction Well RW-5(B2)
VOCs vs. Time

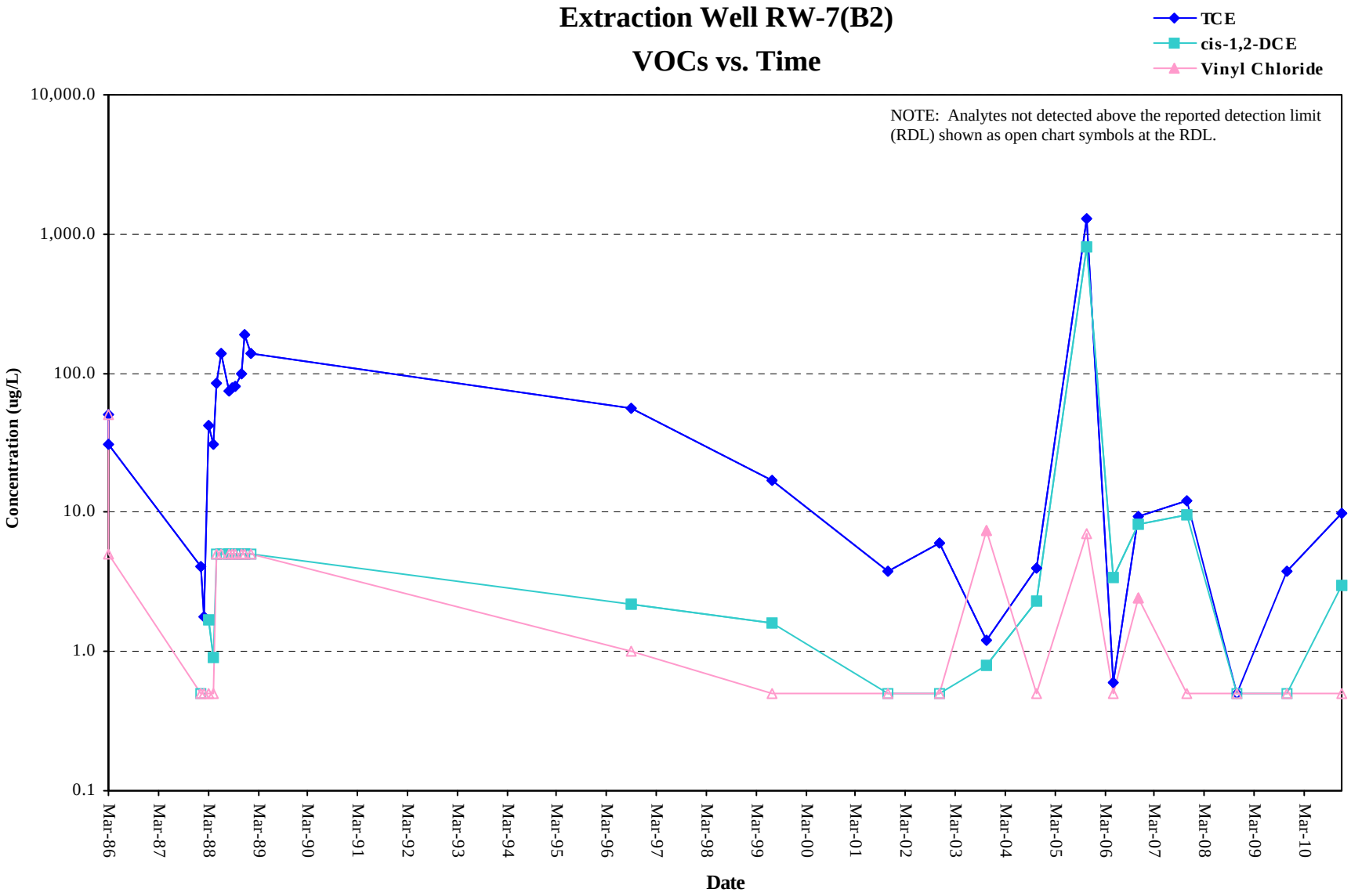


Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:17 PM

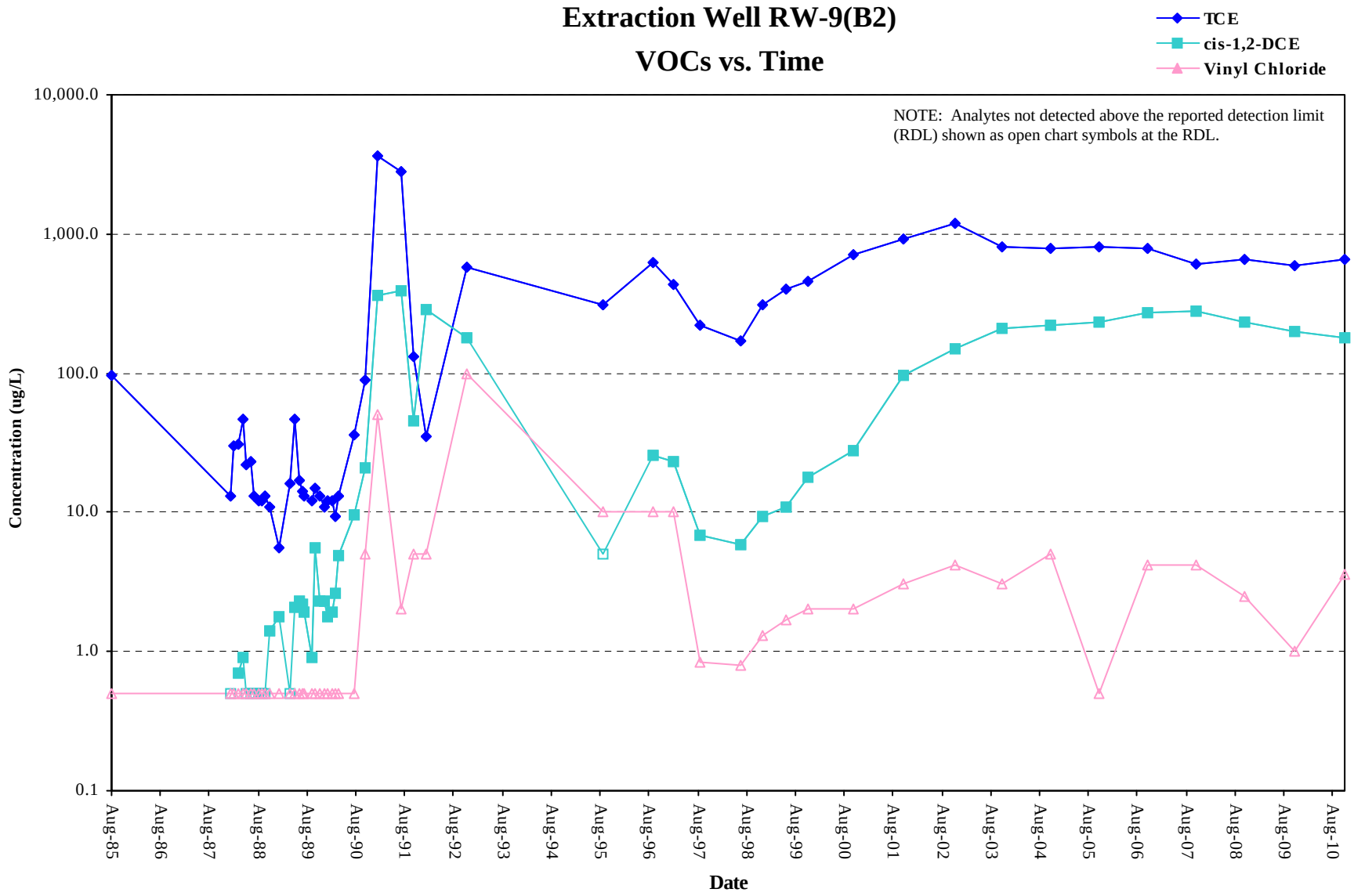
Weiss Associates

Extraction Well RW-7(B2)
VOCs vs. Time



Weiss Associates

Extraction Well RW-9(B2)
VOCs vs. Time



Database: S:\WELLDATA\Schlumberger\Mt View - MEW\SlmbMv.mdb
Report: rptMvChrts2010LogV2 Loc. Group: Bldg1-4

Printed: 5/31/2011 4:06:20 PM